REVENUE REQUIREMENTS AND COST OF SERVICE RATES

BLACK & VEATCH PROJECT NO. 195753 & 195754

PREPARED FOR

City of St. Joseph, Missouri
Water Protection Division

JUNE 2017

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1 Executive Summary

The wastewater utility, owned and operated by the City of St. Joseph, Missouri (Sewer Utility or Water Protection Division), conducts an annual review of its charges for sewer service (Rate Study). The Rate Study consists of three phases: Revenue and Revenue Requirements, Cost of Service, and Rate Design. The Revenue and Revenue Requirements phase (also referred to as the Financial Planning phase) determines the overall rate adjustment required based on cost data and capital project forecasts provided by the City. The Cost of Service phase determines how costs should be equitably recovered from each of the Sewer Utility's customer classes. The last phase, Rate Design, determines how services should be priced to reflect the cost of service and recover 100% of the revenue requirement.

1.1 REVENUES

The Sewer Utility is projected to experience no change in the number of customers for the study period fiscal year (FY) 2018 through FY 2022. Billable volume from current retail customers and wholesale customers is projected to remain constant (Tables 2 and 3).

The projection of billed revenues from sales increases from a base of $28,214,900 in FY 2017 to $28,938,000 in FY 2022 (Table 4). The forecasted usage from FY2017 Rate Study was not achieved and resulted in about $1.3 million less per year in revenue from FY 2017-FY 2022. This was caused by a decline in use per customer and the implementation of a new billing policy that bills customers on the lesser of their winter quarter average usage or actual usage for the month. Miscellaneous operating revenues, which are primarily from penalties for late payment and tax credit revenue, are projected to be approximately $1,136,500 in FY 2017 and only decreasing slightly to about $1,021,200 in FY 2022 (Table 5).

1.2 REVENUE REQUIREMENTS

Operating expenses, which include operation and maintenance expense, routine capital expense, and transfers to other City funds, are expected to be $ 14,921,100 in FY 2017 and are projected to increase to $ 17,305,900 in FY 2022 (Table 6).

In prior years, bad debt has been highlighted as a significant contributor to rate increases. In the past few years the City has continued to make bad debt reduction a priority. This study assumes bad debt to be about 2 percent of the total operating revenues for FY2017 through FY2022. The City's substantial improvement in its bad debt as a percentage of rate revenue is the result of the City using the following steps to address bad debt from unpaid bills:

- Implementing an additional payment plan that allows income qualified customers to have a 12 month payment plan to bring their past due accounts current;
- Working with local Social Service Agencies to assist customers who are having difficulties making payments;
- Reducing the days for payment of an outstanding wastewater utility bill from 90 days to 60 days;
- Disconnecting water service for non-payment of wastewater utility bills;
- Continuing to educate customers on leaks and other household activities that could have the potential for higher payments;
- Encouraging customers to contact the City before their services have been disconnected;
- Upgrading software system to allow for more flexibility in the information that we share with our customers.

As shown in the table below, between FY 2014 and FY 2016, the City reduced its bad debt percentage from 8.8% of revenue to 1.6%. Bad debt is projected to be 2.0% of revenue in FY 2017 through the end of the study period

	FY 2014 ACTUAL	FY 2015 ACTUAL	FY 2016 ACTUAL	FY 2017 PROJECTED	FY 2018 BUDGET
Bad Debt	$1,909,371	$1,447,995	$408,127	$564,000	$642,000
Total Rate Revenue	$21,679,555	$23,782,387	$25,495,085	$28,214,900	$32,121,200
Bad Debt %	8.8%	6.1%	1.6%	2.0%	2.0%

During previous Rate Studies, there have been comments related to the concern of using the Payment in Lieu of Taxes (PILOT) as a method to offset supporting costs for services that the wastewater utility receives from general administration, including Finance and Law support, and not an indirect cost allocation. An additional review of this issue was completed and it was found that PILOT averaged about $80k less per year compared to the indirect cost allocation from FY 2015-FY 2018. In addition, PILOT is being reduced from 7% to 6.5% for FY 2018-FY 2022 to account for the adjustment of applying PILOT to all rate revenue.

The City's current Capital Improvement Program (CIP) for FY 2017 through FY 2022 totals $102.9 million (Table 7). The City's anticipated capital requirements are driven by regulatory needs or capital replacement expenses required to maintain current operations. As a result, the individual flexibility of projects is limited and, in general, the delaying of projects has the largest impact on rates. Once projects are scheduled, the City's procurement process aims to provide the necessary supplies, equipment, and services at the lowest possible cost that is consistent with the quality needed to meet the requirements of the wastewater utility so that the ratepayers receive the maximum value for each dollar expended. Future CIP projects are conservative estimates that City staff are generally able to report success in keeping projects at or below the originally estimated cost. For that reason, future rate increases could be lower than the current forecast as lower project costs related to being under budget or receiving lower bond rates are possible. An example of this is not only the lower bond rates shown with the SRF funding strategy used for the Blacksnake project, but also reducing the SRF loan from $80 million to $67.3 million. This saved the City approximately $5 million in debt service from FY 2018 to FY 2022.

About 2.4% of the CIP is for environmental and regulatory projects mandated by the Missouri Department of Natural Resources (MDNR) for power upgrades of $1.5 million and final stages of the Ammonia project ($976,000). The current CIP includes a total of $59 million in CSO related projects, with the majority going towards the Blacksnake Creek Stormwater Separation project. The CIP is anticipated to be financed with annual operating revenues, $67.3 million ($10.2 million to refund the SRF FY 2016 bond and $57.1 million for construction) State Revolving Fund (SRF) bond issue in FY 2017, a $14.2 million conventional bond issue in FY 2018, and a $4.3 million conventional bond issue in FY 2020. Annual debt service on existing and proposed debt is projected to increase from approximately $12.2 million in FY 2017 to $15.9 million in FY 2022 (Table 9).

With increasing debt costs, it is important to analyze the amount of total capital dollars (debt service and cash financed capital) being spent compared to the total operating requirements of the

Sewer Utility. The table below shows the comparison of the City to other utilities from a benchmark survey completed by National Association of Clean Water Agencies which consists of water and wastewater utilities. As shown on Lines 10 and Line 17, the City's percent of total capital dollars in FY 2019 through FY 2022 are decreasing as a result of continually spending operating funds to keep debt service down along with working to keep new debt issuances lower (2017 SRF loan). It is important to note that capital costs are comprised of debt and cash and the ratio of these two components can vary among utilities depending on the mix of debt and pay-as-you-go funds they use.

Line No.	Description	Estimated	Projected				
		2017	2018	2019	2020	2021	2022
	St. Joseph						
1	Total Operating Requirements	31,290,700	31,360,700	33,667,700	35,332,700	35,404,400	36,253,600
2	Operating and Maintenance	12,396,900	12,216,000	12,677,900	13,176,500	13,685,000	14,218,200
3	Capital Improvements	4,806,800	4,810,200	5,324,700	5,415,500	3,688,500	3,928,200
4	Debt Service	12,187,800	12,290,800	13,609,800	14,623,700	15,870,500	15,902,700
5	Other	1,899,200	2,043,700	2,055,300	2,117,000	2,160,400	2,204,500
6	% Operation and Maintenance	39.6%	39.0%	37.7%	37.3%	38.7%	39.2%
7	% Capital Improvements	15.4%	15.3%	15.8%	15.3%	10.4%	10.8%
8	% Debt Service	39.0%	39.2%	40.4%	41.4%	44.8%	43.9%
9	% Other	6.1%	6.5%	6.1%	6.0%	6.1%	6.1%
10	Total Capital (Line 7 + Line 8)	54.3%	54.5%	56.2%	56.7%	55.2%	54.7%
11	**NACWA Financial Survey 2015 (a)**						
12	**Breakdown of Clean Water Agency Expenditures**						
13	% Operation and Maintenance	41.0%					
14	% Capital Improvements	27.0%					
15	% Debt Service	27.0%					
16	% Other	5.0%					
17	Total Capital (Line 14 + Line 15)	54.0%					

(a) Water and Wastewater Utilities

The following revenue increases are projected to be required to meet the Sewer Utility's revenue requirements through the fiscal year ending June 30, 2022. The rate increase for FY 2018 is lower than last year's Rate Study (3% compared to 5% for last year). Revenue requirements include both the cash obligations and the debt service coverage obligations of the Sewer Utility.

EFFECTIVE DATE	PERCENTAGE OVERALL INCREASE IN REVENUES	RESIDENTIAL INDICATOR[1]
July 1, 2017	11.0%	1.3%
July 1, 2018	3.0%	1.4%
July 1, 2019	3.0%	1.5%
July 1, 2020	2.0%	1.5%
July 1, 2021	2.0%	1.5%

1.3 COST OF SERVICE ANALYSIS

Total cost of service for FY 2018 to be met from wastewater service charges is $$32,121,200 (Table 12). Rates proposed in this report are designed to recover cost of service from each customer class based on the service requirements of the customer class while recognizing contractual provisions for wholesale service.

The cost allocation process was last updated in FY 2015 and will be the basis for cost allocation for the next two years with the exception of certain allocations that will be updated annually. The cost allocations follow standard wastewater utility cost allocation procedures[2] that are shown in Tables 13 through 20.

Upon completion of the Ammonia Removal Project in FY2018, the second phase of the Ammonia charge will be implemented. This will consist of the current fixed charge from phase one and a charge per pound of removal from customers' flows will be added as shown in Table ES-1.

1.4 WASTEWATER RATE ADJUSTMENTS

The proposed cost of service based rates scheduled to become effective July 1, 2017 are shown in Tables 22 and ES-1. The projected recovery by customer class of the allocated cost of service is shown in Tables 24 and ES-2. The projected recovery of allocated cost of service under the proposed rates is 100.0 percent for the retail class and 100.0 percent for the wholesale customer class.

The impact on a residential customer using 4 hundred cubic feet (Ccf), approximately 3,000 gallons, per month will be an increase of $6.65per month, from $53.32 ($0.018 per gallon) to $59.97 ($0.02 per gallon), which is a 12.5% increase.

[1] Residential Indicator is calculated as the average cost per residential household of wastewater charges as a percentage of the median household income (MHI) of St. Joseph. It is a measure of affordability used in evaluating a reasonable schedule of the CSO LTCP.

[2] Water Environment Federation (WEF), Financing and Charges for Wastewater Systems, Manual of Practice No. 27

Table ES-1 Schedule of Proposed Rates for Fiscal Year Ending June 30, 2018

RETAIL

	Monthly Charge $			Limit Fees	
Service Charge					
Inside City	37.69				
Outside City	88.45				
Volume Charge	Monthly $/Ccf				
Inside City	5.57			1.96	$/Ccf
Outside City	12.73			4.48	$/Ccf
		Inside City	Outside City		
Extra Strength Surcharge					
BOD in excess of 300 mg/l		0.254	0.377 $/lb	0.381	$/lb.
Suspended solids in excess of 350 mg/l		0.196	0.465 $/lb	0.239	$/lb.
Ammonia in excess of 30 mg/l		0.105	0.249 $/lb	0.158	$/lb.
Fats, Oils, & Grease in Excess of 100 mg/l		0.286	0.657 $/lb		
Septage		79.00	79.00 $/Kgal		

WHOLESALE (a)

Ammonia Project Fixed Charge				
South St. Joseph Industrial Sewer District	40,490	$/Month		
National Beef Leathers	13,410	$/Month		
Triumph Foods	26,680	$/Month		
Flow charge				
South St. Joseph Industrial Sewer District	0.279	$/Ccf	0.419	$/Ccf
National Beef Leathers	0.207	$/Ccf	0.310	$/Ccf
Triumph Foods	0.210	$/Ccf	0.315	$/Ccf
Pump Station (b)	0.393	$/Ccf		
BOD	0.275	$/lb.	0.413	$/lb.
Suspended Solids	0.114	$/lb.	0.171	$/lb.
Ammonia	0.105	$/lb.	0.158	$/lb.
Fats, Oils, & Grease	0.286	$/lb.	0.000	$/lb.

(a) Applicable to the South St. Joseph Industrial Sewer District (SSJISD), National Beef Leathers, and Triumph for secondary treatment service.

(b) Applicable to SSJISD only.

Table ES-2 Comparison of Cost of Service with Revenue under Proposed Rates

Fiscal Year Ending June 30, 2018

		[A]	[B]	[C]	[D]
Line No.	Customer Class	Allocated Cost of Service	Revenue Under Estimated Rates	Revenue as Percent of Adjusted Cost of Service	Revenue Inc/(Dec) Compared to Existing Rates
		$	$	%	%
	Retail				
1	Residential	18,037,679	17,430,500	96.6	12.5
2	Commercial/Industrial	9,779,494	10,385,200	106.2	12.0
3	Surcharge	750,360	751,900	100.2	(19.6)
4	Septage	154,664	156,400	101.1	12.8
5	Total Retail	28,722,197	28,724,000	100.0	11.1
	Secondary Wholesale Treatment				
6	South St. Joseph Industrial Sewer Di	1,853,953	1,854,200	100.0	5.6
7	National Beef Leathers	360,016	360,200	100.1	36.2
8	Triumph Foods	1,185,037	1,185,200	100.0	10.8
9	Total Secondary Wholesale Treatn	3,399,006	3,399,600	100.0	10.0
10	Total	32,121,203	32,123,600	100.0	11.0

2 Introduction

2.1 PURPOSE

The purpose of this report is to present the findings of our study of the financing needs and rate requirements of the Sewer Utility owned and operated by the City of St. Joseph, Missouri (City). The study addresses three objectives: (1) projection of operating and capital financing costs of the Sewer Utility for a five-year planning period ending June 30, 2022; (2) projection of revenue adjustments through fiscal year (FY) 2022; and (3) development of cost of service based rates for retail and wholesale customers for FY 2018. Unless otherwise noted, references in this report to a specific year are for the City's fiscal year ended June 30.

2.2 SCOPE

The report presents the study of revenue and revenue requirements, cost of service allocations, and proposed rate design for wastewater service. The revenue and revenue requirements study includes consideration of future revenues under existing rates, operation and maintenance expense, principal and interest expense on bonded debt, expenditures for capital improvements, and compliance with existing bond indentures. Annual projections of the number of customers, billed wastewater volumes, revenues, and expenditures are shown for FY 2018 through FY 2022.

Revenue requirements are developed on a cash basis and the allocation of costs to functional cost components follows the design basis of cost causative allocation methods. The analysis provides the basis for the design of schedules of charges for wastewater service that will recover the total cost of wastewater service for the fiscal year ended June 30, 2018.

This report also continues with developing a rate for the Ammonia Removal Project, which consists of a fixed charge designed to recover the debt service associated with the project. The debt service is estimated each year until the project is complete. For FY 2018, the rate recovers principal, interest, and administrative fees for the loan. Upon completion of the Ammonia Removal Project in FY2018, the second phase of the Ammonia charge will be implemented. This will consist of the current fixed charge from phase one and a charge per pound of removal from customers' flows will be added In addition to adding an ammonia fixed charge, the continued phase out of the Secondary Service Minimum (SSM) is also performed in this study.

2.3 GENERAL BACKGROUND

The City operates and maintains the Sewer Utility as a self-supporting enterprise. The Sewer Utility provides services to approximately 25,700 customers including residential, commercial, and industrial accounts.

The utility's wastewater rates are developed to provide sufficient revenues to meet all operation and maintenance expenses of the system, debt service requirements, capital improvement expenditures to be funded from current revenues, and other specific bond ordinance and revenue requirements.

The Sewer Utility also provides secondary treatment service to South St. Joseph Industrial Sewer District (SSJISD), National Beef Leathers, and Triumph Foods (collectively, the "wholesale customers") on a contractual basis. In 1980, the City and SSJISD entered into an agreement whereby the City would provide secondary treatment for the wastewater discharged from SSJISD's primary treatment facilities. The agreement was revised in January 1996 to define the basis for charges for the secondary treatment services and how the service charge to SSJISD would be developed and

updated. The agreement provides that allocation factors used to develop the charges must be updated not less than every five years. The allocation factors were updated three years ago.

The City also has agreements with National Beef Leathers and Triumph Foods. Provisions of the agreement are similar to those of SSJISD, with the exception that National Beef Leathers and Triumph Foods do not pay any costs associated with the SSJISD Pump Station.

Each of the wholesale customers now has a fixed charge for the Ammonia Project related debt service. This charge is based on plant design and the units provided by each wholesale customer for their Significant Industrial Users (SIU) permit. With the addition of the capacity component to the cost of service allocations, each wholesale customer now has a different flow charge. A full description of the capacity component is found in the cost of service section later in this report. Otherwise, they are all subject to the same charge for treatment of BOD, Suspended Solids, FOG, and Ammonia as of FY 2018.

2.4 DISCLAIMER

Subject to the limitations set forth herein, this report was prepared for the City of St. Joseph, Missouri ("City") by Black & Veatch Corporation ("B&V") and is based on information not within the control of B&V. B&V has not been requested to make an independent analysis, to verify the information provided, or to render an independent judgment of the validity of the information provided by others. As such, B&V cannot guarantee the accuracy thereof to the extent that such information, data, or opinions were based on information provided by others.

In conducting the B&V analysis and in forming an opinion of the projection of future operations summarized in this report, B&V has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodologies B&V utilizes in performing the analysis and making these projections follow generally accepted industry practices. While B&V believes that such assumptions and methodologies as summarized in this report are reasonable and appropriate for the purpose for which they are used; depending upon conditions, events, and circumstances that actually occur but are unknown at this time, actual results may materially differ from those projected. Such factors may include, but are not limited to, the ability to execute the capital improvement program on schedule and within budget, the regional and national economic climate, and growth in the service area.

Readers of this report are advised that any projected or forecasted financial, operating, growth, performance, or strategy merely reflects the reasonable judgment of B&V at the time of the preparation of such information and is based on a number of factors and circumstances beyond B&V control. Accordingly, B&V makes no assurances that the projections or forecasts will be consistent with actual results or performance. To better reflect more current trends and reduce to chance of projected error, B&V recommends that periodic updates of the projections contained in this report be conducted so more recent historical trends can be recognized and taken into account.

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special, incidental, indirect, or consequential damages in connection with such use. To the fullest extent permitted by law, such waiver, release, and indemnification shall apply notwithstanding the negligence, strict liability, fault, or breach of warranty or contract of B&V.

3 Revenues

The majority of the Sewer Utility's revenue is derived from rates and charges for sewer service. A summary of the City's existing rates is presented in Table 1. Projections of future revenue under existing rates are based on analyses of historical trends of customer growth and average volume per customer (Tables 2 - 4). Other income sources such as wastewater service penalties, tax credits, and other revenue are presented in Table 5. FY 2017 customer and volume estimates are based on projecting the average of the first eight months of the fiscal year (July 2016 through February 2017).

3.1 CUSTOMER GROWTH

Table 2 summarizes the historical average number of Sewer Utility customers by customer class during FY 2012 through FY 2016 and the projected number of customers for FY 2017 through 2022. Figures shown in Table 2 are annual averages based on the number of bills issued. Customer growth projections are based on an examination of recent trends in the number of customers added to the system. During the past five years the utility has experienced a decrease in the overall number of customers with an average annual decrease of approximately 0.83 percent. There was a significant drop in customer numbers from FY 2012 to FY 2013, which approximately coincides with a switch to a new billing system. There is no projected growth in the number of customers for FY 2018 through FY 2022 for the residential, commercial, and industrial customer classes. In recent years, retail commercial and industrial customers have shown a fluctuation in the number of customers over the years. A large part of this is related to customer changes in the occupants of multi-family dwellings (duplexes and fourplexes) and not actual businesses leaving the wastewater utility.

3.2 BILLED WASTEWATER VOLUME

Historical and projected billed wastewater volumes are shown in Table 3. Total billed wastewater volume (retail and wholesale) from FY 2012 through FY 2016 has decreased from 5,317,791 Ccf to 5,235,002 Ccf.

The billed wastewater volume for retail customers has decreased approximately 335,000 Ccf, between FY 2012 and FY 2017. The drop from FY 2016 to FY 2018 was caused by a decline in use per customer and the implementation of a new billing policy that bills customers on the lesser of their winter quarter average usage or actual usage for the month. Going forward, residential and commercial/industrial volume is projected to increase slightly in FY 2018 (based on a FY2016 use per customer for residential customers and a 3-year average use per customer for other customers) and then remain steady. Both residential and commercial volumes are in line with the customer growth forecast. Total billed wastewater volume (retail and wholesale) is estimated to increase from about 5,133,800 Ccf in FY 2017 to 5,209,500 Ccf in FY 2022, an increase of about 1.5 percent. The majority of this increase is related to new industrial customers for Retail and SSJISD.

3.2.1 Wholesale Customer Growth

Contributed volume from the South St. Joseph Industrial Sewer District (SSJISD) had been gradually increasing from FY 2012 to FY 2016. SSJISD is expected to see a slight drop in FY 2017 to 917,500 Ccf, but once new customers are fully onboard will increase in FY 2018 and remain steady for the rest of the study period at 934,000 Ccf.

National Beef Leathers (NBL) experienced an increase in volumes from 225,690 Ccf in FY 2012 to 484,107 Ccf in FY 2016. Their flow is estimated to decrease from FY 2016 to 2017 by about 12.8

percent to 422,000 Ccf. NBL's contributed volume is projected to be 422,000 Ccf from FY 2018 through FY 2022.

Triumph Foods' flows have decreased each year from FY 2012 to FY2015. They have decreased approximately 10.9 percent overall. They are estimated to increase slightly by 1.8 percent from FY 2015 to FY 2017 and then remain constant for the rest of the study period. The pounds of BOD in Triumph's contributed wastewater decreased in FY 2017 by 10.7percent and contributed pounds of suspended solids increased by 83.4 percent. These loadings are projected to remain flat for the rest of the study period. Triumph Foods' contributed volume is projected to be 986,900 Ccf from FY 2018 through FY 2022.

Table 1 Schedule of Existing Rates (a)

RETAIL

Service Charge	Monthly Charge $
Inside City	33.40
Outside City	78.38

Volume Charge	Monthly $/Ccf	Limit Fees	
Inside City	4.98	1.96	$/Ccf
Outside City	11.38	4.48	$/Ccf

Extra Strength Surcharge	Inside City	Outside City		Limit Fees	
BOD in excess of 300 mg/l	0.254	0.378	$/lb	0.390	$/lb.
Suspended solids in excess of 350 mg/l	0.196	0.465	$/lb	0.329	$/lb.
Fats, Oils, & Grease in Excess of 100 mg/l	0.274	0.629	$/lb		
Septage	70.00	70.00	$/Kgal		

WHOLESALE (a)

Ammonia Project Fixed Charge				
South St. Joseph Industrial Sewer District	30,610	$/Month		
National Beef Leathers	10,140	$/Month		
Triumph Foods	20,180	$/Month		
Flow charge				
South St. Joseph Industrial Sewer District	0.3160	$/Ccf	0.514	$/Ccf
National Beef Leathers	0.2340	$/Ccf	0.379	$/Ccf
Triumph Foods	0.2350	$/Ccf	0.378	$/Ccf
Pump Station (b)	0.3580	$/Ccf		
BOD	0.2810	$/lb.	0.426	$/lb.
Suspended Solids	0.1520	$/lb.	0.251	$/lb.
Fats, Oils, & Grease	0.2740	$/lb.		

(a) Rates were fully effective on August 1, 2016.
(b) Applicable to the South St. Joseph Industrial Sewer District (SSJISD), National Beef Leathers, and Triumph Foods for secondary treatment service.
(c) Applicable to SSJISD only.

Table 2 Historical and Projected Number of Customers

Fiscal Years Ending June 30

Customer Class	Historical					Estimated (a)	Projected				
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
RETAIL											
Inside City											
Residential	24,294	23,286	23,342	23,299	23,211	23,382	23,382	23,382	23,382	23,382	23,382
Commercial/Industrial	2,511	2,118	2,020	2,122	2,052	2,118	2,118	2,118	2,118	2,118	2,118
Surcharge		9	9	10	10	9	9	9	9	9	9
Outside City											
Residential		624	186	178	196	171	171	171	171	171	171
Commercial/Industrial		23	22	34	32	30	30	30	30	30	30
WHOLESALE											
SSJISD	1	1	1	1	1	1	1	1	1	1	1
National Beef Leathers	1	1	1	1	1	1	1	1	1	1	1
Triumph Foods	1	1	1	1	1	1	1	1	1	1	1
Total	26,808	26,063	25,582	25,646	25,504	25,713	25,713	25,713	25,713	25,713	25,713

(a) FY 2017 Number of customers is based on average of first eight months of fiscal year

Table 3 Historical and Projected Contributed Volume

Fiscal Years Ending June 30

Customer Class	Historical					Estimated (a)	Projected				
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
	Ccf	Ccf	Ccf	Ccf	Ccf	Ccf	Ccf	Ccf	Ccf	Ccf	Ccf
RETAIL											
Inside City											
Residential	1,581,966	1,528,749	1,580,272	1,459,517	1,252,600	1,167,162	1,178,500	1,178,500	1,178,500	1,178,500	1,178,500
Commercial/Industrial	1,560,489	972,068	1,110,592	1,323,167	1,158,867	1,188,400	1,235,500	1,235,500	1,235,500	1,235,500	1,235,500
Surcharge		339,970	315,831	345,638	401,396	438,900	438,900	438,900	438,900	438,900	438,900
Outside City											
Residential		38,532	11,698	11,202	9,154	8,800	8,600	8,600	8,600	8,600	8,600
Commercial/Industrial		5,205	4,913	4,936	7,126	4,100	5,100	5,100	5,100	5,100	5,100
Subtotal Retail	3,142,455	2,884,524	3,023,306	3,144,460	2,829,143	2,807,362	2,866,600	2,866,600	2,866,600	2,866,600	2,866,600
WHOLESALE											
SSJISD	861,009	902,767	958,593	946,047	938,460	917,500	934,000	934,000	934,000	934,000	934,000
National Beef Leathers	225,690	290,546	308,733	439,217	484,107	422,000	422,000	422,000	422,000	422,000	422,000
Triumph Foods	1,088,637	1,013,746	1,002,465	969,712	983,292	986,900	986,900	986,900	986,900	986,900	986,900
Subtotal Wholesale	2,175,336	2,207,059	2,269,791	2,354,976	2,405,859	2,326,400	2,342,900	2,342,900	2,342,900	2,342,900	2,342,900
Total System	5,317,791	5,091,583	5,293,097	5,499,435	5,235,002	5,133,762	5,209,500	5,209,500	5,209,500	5,209,500	5,209,500

(a) FY 2017 contributed volume is based on average of first eight months of fiscal year

3.3 WASTEWATER SERVICE CHARGE REVENUES UNDER EXISTING RATES

Estimates of revenues from wastewater service charges are based on projections of customer growth, billable wastewater volume, and surcharge billings. The estimates are obtained by applying the existing service charge and volume charge for each customer class to the projected number of customers and estimated billable wastewater volume. Approximately 99 percent of the retail customers pay the inside city rate while 1 percent pay the outside city rate. The City currently has nine retail surcharge customers, five of which have significant extra strength surcharges. Surcharge revenue in FY 2016 decreased 36.7 percent to an estimated $401,909. Multiple customers have significantly reduced their overage pounds resulting in surcharge revenue from FY 2014 to FY 2016 to decrease by 68 percent. Revenue is projected to be $935,700from FY2018 (based on existing rates) through the remainder of the study period. The increase in revenue is the result of a new SIU customer that is expected to be operational for an entire year in FY 2018. As shown in Table 4, wastewater billed revenue from sales under existing rates are projected to be $28,214,900 in FY 2017, and increase to $28,938,000in FY 2022.

3.4 OTHER REVENUE

Historical and projected miscellaneous operating and non-operating revenues are shown in Table 5. Miscellaneous operating revenues consist of Sewer Service Penalties, System Development Fees, BUILD Credit Revenue and Other Revenue. Miscellaneous revenue is projected to total about $1,136,500 in FY 2017, and remain fairly steady through the study period, with projected FY 2022 miscellaneous revenue of approximately $1,021,200.

As shown in Table 5, the City is receiving tax credits related to the Missouri Development Finance Board (MDFB) BUILD bonds. The BUILD program provides financial incentives for the location or expansion of large business projects that will result in specified levels of new jobs within a three-year period. The revenue is used to pay down existing debt service, specifically the 2004C Revenue Bonds.

The revenues shown in Table 5 do not include earnings from the investment of available cash balances. Interest earnings are considered in a subsequent section of this report.

Table 4 Historical and Projected Billed Revenue from Sales (Existing Rates)

Fiscal Years Ending June 30

Customer Class	Historical					Estimated	Projected				
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
	$	$	$	$	$	$	$	$	$	$	$
RETAIL											
Residential	9,941,598	10,926,734	12,139,563	13,548,199	14,234,597	15,234,596	15,499,100	15,499,100	15,499,100	15,499,100	15,499,100
Commercial/Industrial	5,454,130	5,044,030	6,057,964	7,162,555	7,806,267	8,952,200	9,273,900	9,273,900	9,273,900	9,273,900	9,273,900
Extra Strength Surcharges	723,851	1,281,068	1,251,538	634,660	401,909	752,000	935,700	935,700	935,700	935,700	935,700
Septage			57,785	129,456	138,185	138,600	138,600	138,600	138,600	138,600	138,600
Subtotal Retail	16,119,579	17,251,832	19,506,850	21,474,870	22,580,958	25,077,396	25,847,300	25,847,300	25,847,300	25,847,300	25,847,300
WHOLESALE											
SSJISD	1,036,998	1,178,478	1,381,013	1,364,209	1,660,694	1,799,500	1,756,200	1,756,200	1,756,200	1,756,200	1,756,200
National Beef Leathers	52,200	116,600	144,600	174,200	272,200	273,000	264,400	264,400	264,400	264,400	264,400
Triumph Foods	464,374	567,774	647,093	769,108	981,234	1,065,000	1,070,100	1,070,100	1,070,100	1,070,100	1,070,100
Subtotal Wholesale	1,553,572	1,862,852	2,172,706	2,307,517	2,914,128	3,137,500	3,090,700	3,090,700	3,090,700	3,090,700	3,090,700
Total System	17,673,151	19,114,684	21,679,555	23,782,387	25,495,085	28,214,896	28,938,000	28,938,000	28,938,000	28,938,000	28,938,000

Table 5 Historical and Projected Miscellaneous Revenues

Fiscal Years Ending June 30

Description	Historical					Estimated	Projected				
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
	$	$	$	$	$	$	$	$	$	$	$
Miscellaneous Revenues											
Sewer Service Penalties	303,000	370,974	422,973	647,983	489,288	500,000	500,000	500,000	500,000	500,000	500,000
Sewer System Development Fees	30,000	41,316	27,700	31,500	39,286	30,000	30,000	34,000	38,000	42,000	46,000
Refund Prior Year Expenditures	0	-3,823	233	0	17	0	0	0	0	0	0
BUILD Credit Revenue	387,700	381,400	380,100	378,900	377,500	387,700	387,700	385,900	384,800	383,700	382,500
Other Revenue	36,400	77,500	92,100	247,200	704,000	218,800	104,700	92,800	92,800	92,700	92,700
Total Miscellaneous Revenue	757,100	867,368	923,106	1,305,583	1,610,091	1,136,500	1,022,400	1,012,700	1,015,600	1,018,400	1,021,200

4 Revenue Requirements

Revenues required to provide for the continued operation of the Sewer Utility must be sufficient to meet the cash requirements for operation and maintenance expense, principal and interest payments on bonded debt, routine annual capital improvements and replacements, and other major capital expenditures that are not financed through debt. In addition, revenues must be adequate to meet applicable rate covenants included in the City's ordinances authorizing the outstanding revenue bonds. The revenue requirements developed in this report incorporate the financial conditions as of July 1, 2016, and are projected for the five-year period ending June 30, 2022.

4.1 OPERATING EXPENSE

Operating expenses of the Sewer Utility include the cost of operating and maintaining the sewer collection and treatment facilities, routine capital expenditures, and transfers to other City departments or funds for services provided. These expenses are classified as Wastewater Plant Administration, Wastewater Treatment, Laboratory, and Sewer Maintenance. Other operating expenses include Routine Capital Expense and Transfers. Because these costs are a continuing normal annual obligation of the utility, they are met from operating revenue as they are incurred.

Projected operating expense is summarized in Table 6. Operating expense for FY 2017 is estimated to be $14,921,100. This is about a 3.2percent increase from FY 2016 actual expenses of $14,458,900. This increase is not primarily attributed to one specific increase, but to numerous small increases over several areas. Operating expense for FY 2018 is budgeted to be $15,315,400. This is a 62.6 percent increase over the FY2017 total. Operating expenses are projected to increase an average of 3.1 percent per year to $ 17,305,900in FY 2022.

The City continues to be focused on reducing bad debt and, as mentioned in the Executive Summary, has taken several steps to help reduce it. Bad debt is budgeted to remain stable at 2 percent of the total operating revenue for the study period. Bad debt is estimated at $564,000 in FY 2017, and reaches up to $709,000 in 2022.

Routine capital expenditures are purchases from the operating budget that are incurred annually for normal replacement of equipment and system expenses. As such, they are funded from annual revenues. Routine capital expenses are summarized in Table 6. The FY 2018 budget includes $1,055,700 for various in-house rehabilitation projects.

In addition, the Sewer Utility transfers monies annually to the City's General Fund to pay the utility's allocated share of the City's general and administrative costs. The Sewer Utility also transfers monies to the Computer Network Fund that provides monies for replacement of computers. In FY 2018, the basis for transfers to the General Fund is based on portions of the GIS system and costs for claims technician ($58,800) and a payment in lieu of tax (PILOT). The proposed budget estimates PILOT transfers of $1.9 million. Computer Network Fund may vary from year to year based on need; $ 34,000 is budgeted in FY 2018 with projected growth of about 3 percent annually. The Sewer Utility also transfers monies to the City's Aviation Department to pay for costs related to sludge disposal at the City airport. The Aviation Department transfers are budgeted for $48,300 in FY 2018 and are projected to be eliminated after FY 2018.

Table 6 Projected Operating Expense

Fiscal Years Ending June 30

Line No.	Description	Historical			Estimated	Budgeted	Projected			
		2014	2015	2016	2017	2018	2019	2020	2021	2022
				$	$	$	$	$	$	$
	Operation & Maintenance Expense									
1	Wastewater Plant Administration	2,753,400	2,860,700	1,806,500	2,991,900	2,176,000	2,240,100	2,305,000	2,364,400	2,426,200
2	Wastewater Treatment	5,578,400	6,495,300	6,483,800	6,817,700	6,967,100	7,239,800	7,542,000	7,855,500	8,184,200
3	Laboratory	604,700	622,100	669,600	612,600	721,600	752,300	784,700	818,700	854,600
4	Sewer Maintenance	1,760,100	1,807,400	1,958,800	1,974,700	2,351,300	2,445,700	2,544,800	2,646,400	2,753,200
5	Subtotal Direct O & M Expense	10,696,600	11,785,500	10,918,700	12,396,900	12,216,000	12,677,900	13,176,500	13,685,000	14,218,200
	Transfers									
6	General Fund	1,535,500	86,000	86,000	58,800	58,800	60,600	62,400	64,300	66,200
7	PILOT	0	1,441,900	1,554,000	1,761,600	1,902,600	1,959,700	2,018,500	2,058,900	2,100,000
8	Computer Network	22,900	30,500	28,300	30,500	34,000	35,000	36,100	37,200	38,300
9	Aviation	48,300	48,300	48,300	48,300	48,300	0	0	0	0
10	Subtotal Transfers	1,606,700	1,606,700	1,716,600	1,899,200	2,043,700	2,055,300	2,117,000	2,160,400	2,204,500
11	Total Direct O&M and Transfers	12,303,300	13,392,200	12,635,300	14,296,100	14,259,700	14,733,200	15,293,500	15,845,400	16,422,700
12	Routine Capital Expense	1,060,700	868,200	1,823,600	625,000	1,055,700	808,200	832,500	857,500	883,200
13	Total Operating Expense	13,364,000	14,260,400	14,458,900	14,921,100	15,315,400	15,541,400	16,126,000	16,702,900	17,305,900

4.2 CAPITAL IMPROVEMENT PROGRAM

The Sewer Utility's capital improvement program (CIP) provides for the major repair and replacement of existing facilities, as well as treatment plant expansions, required major environmental upgrades, and collection system extensions to provide service to new customers. As shown in Table 7, the proposed capital improvement program totals $47.8 million in FY 2018 (Line 59). The major project scheduled for FY 2018 is the construction phase of the project for Stormwater Separation Conduits in the Blacksnake watershed ($27.1 million).

The CIP shown in Table 7 is divided into six major sections: Environmental and Regulatory projects, CMOM Projects, CSO Long Term Control Plan projects, System Expansion projects, Collection System capital projects, and Water Protection Facility (WPF) capital projects.

4.2.1 Environmental and Regulatory Projects

The first section of Table 7 shows the projects classified as Environmental and Regulatory Projects. This section contains projects that are mandated by MDNR as part of the City's NPDES permit. The two projects for this section are the final components of the Ammonia Project ($976,000) and the KCPL/WPF Power Upgrades ($1.5 million) in FY 2018.

4.2.2 Capacity, Management, Operation and Maintenance (CMOM) Projects

The next section of Table 7 shows the projects classified as Capacity, Management, Operation and Maintenance (CMOM) Projects. CMOM is a program that is mandated in the City's NPDES permit. It provides documentation and planning which demonstrates actions being taken to prevent overloading of wastewater treatment plants, maintenance of the collection system, and the overflow prevention of sanitary sewage into lakes and streams. The specific CMOM projects are shown on Lines 4 through 21 of Table 7. All CMOM projects are forecast to be funded with annual revenues and not debt financed except the Large Diameter Sewer Rehab project.

4.2.3 CSO Long Term Control Plan Projects

The focus of CSO LTCP projects included in the 5-year study period is to remove excess stormwater from entering the collection system with Stormwater Separation Conduits in the Blacksnake watershed. The total amount forecast for these projects from FY 2017 through FY 2022 is $59 million and will be financed with operating revenue and State Revolving Fund (SRF) bonds.

4.2.4 System Expansion Projects

In July 2007, the Department of Public Works was directed by the City Council to implement a plan to extend sewer mains throughout the city. Due to a lack of demand and economic conditions, few expansion projects have been executed to date. A total of $3.6 million is scheduled during the study period.

4.2.5 Capital Projects - Collection System and WPF

Lines 29 through 58 of Table 7 show the major capital projects necessary to maintain the sewer collection system and the existing water protection facility (WPF). These sections are comprised of projects that are necessary to operate and maintain the collection system and WPF in a safe and efficient manner. The major projects in FY 2018 are for the Odor Control – Parkway A ($3 million), MO Ave Sewer Rehab ($3million), and WPF Levee Stormwater Pump Station ($5 million).

Table 7 Proposed Capital Improvement Program

Fiscal Years Ending June 30

Line No.	Description	Estimated 2017	Projected 2018	2019	2020	2021	2022	Total	Funding Source
		$	$	$	$	$	$	$	
	ENVIRONMENTAL AND REGULATORY PROJECTS								
1	Ammonia Project	-	975,900	-	-	-	-	975,900	2014B
2	KCP&L and WPF Power Upgrades - Phase 2	-	1,474,000	-	-	-	-	1,474,000	2018 Conv
3	**Subtotal**	-	**2,449,900**	-	-	-	-	**2,449,900**	
	CMOM Projects								
4	TV Van	269,703	162,997	-	228,000	-	-	660,700	Cash
5	Other Rolling Stock - Sewer Maint.	-	-	621,000	-	-	-	621,000	Cash
6	Portable TV Unit	-	-	98,000	-	-	-	98,000	Cash
7	Easement Jet Machine	-	295,000	-	-	-	-	295,000	Cash
8	Purchase 50% of Street Sweeper A	-	-	196,000	-	-	-	196,000	Cash
9	Purchase 50% of Street Sweeper B	119,500	68,500	-	-	-	-	188,000	Cash
10	CMOM Cast-in-place Pipe Lining	376,100	380,000	391,000	403,000	415,000	449,000	2,414,100	Cash
11	CMOM Increased Root Control & Line Cleaning	126,700	127,000	130,000	134,000	138,000	150,000	805,700	Cash
12	CMOM Emergency Collection System Repairs	570,700	570,000	587,000	605,000	623,000	674,000	3,629,700	Cash
13	Major Mainline Sewer Repairs	56,100	53,000	55,000	56,000	58,000	63,000	341,100	Cash
14	CMOM Spray on Liner, Manhole, & Sewer Line Repair	188,600	185,000	190,000	196,000	202,000	219,000	1,180,600	Cash
15	CMOM Cave in Repairs	101,600	101,000	104,000	108,000	111,000	120,000	645,600	Cash
16	Large Diameter Sewer Rehab (for Sinking Fund - spend every five years)	-	299,500	500,000	-	-	-	799,500	2018 Conv
17	Large Diameter Sewer Rehab (for Sinking Fund - spend every five years)	500,000	200,500	-	-	-	-	700,500	2015A
18	I/I reduction	579,700	591,000	621,000	652,000	684,000	754,000	3,881,700	Cash
19	Manhole Inspection program from O & M	59,000	59,000	62,000	65,000	-	75,000	320,000	Cash
20	GPS Equipment	3,000	84,000	47,000	49,000	51,000	57,000	291,000	Cash
21	Update Aerial Photography	-	44,000	-	49,000	-	57,000	150,000	Cash
22	**Subtotal**	**2,950,703**	**3,220,497**	**3,602,000**	**2,545,000**	**2,282,000**	**2,618,000**	**17,218,200**	
	CSO LONG TERM CONTROL PLAN PROJECTS								
23	Green Solutions	-	607,000	217,000	228,000	239,000	200,000	1,491,000	Cash
24	Water Quality Education Program from O & M	75,000	81,000	85,000	90,000	-	75,000	406,000	Cash
25	Blacksnake Stormwater Separation Conduit	30,000,000	27,100,000	-	-	-	-	57,100,000	SRF
26	**Subtotal**	**30,075,000**	**27,788,000**	**302,000**	**318,000**	**239,000**	**275,000**	**58,997,000**	
	SYSTEM EXPANSION PROJECTS								
27	System Expansion Projects	1,465,111	-	593,500	1,551,000	-	-	3,609,611	Cash
28	**Subtotal**	**1,465,111**	-	**593,500**	**1,551,000**	-	-	**3,609,611**	
	CAPITAL PROJECTS - COLLECTION SYSTEM								
29	Brown's Branch PS - Rehab.	-	1,088,000	-	-	-	-	1,088,000	2018 Conv
30	Roof - Brown's Branch PS	-	-	-	-	11,000	-	11,000	Cash
31	SSJISD PS - Replace VS Drives w/ EM Mag Drives	-	-	-	1,551,000	-	-	1,551,000	2020 Conv
32	Odor Control - Parkway A	-	3,000,000	-	-	-	-	3,000,000	2015A
33	Rosecrans Lagoon Liner Replacement	-	1,350,900	-	-	-	-	1,350,900	2015A
34		-	**5,438,900**	-	**1,551,000**	**11,000**	-	**7,000,900**	
	CAPITAL PROJECTS - Water Protection Facility								
35	ICP/Mass Spectr. Equipment	140,000	-	-	-	-	-	140,000	Cash
36	Roof - Admin Bldg	-	251,000	-	-	-	-	251,000	Cash
37	Digester Heat Exchangers (X - 6)	-	-	665,000	-	-	-	665,000	2018 Conv
38	Replace Gas Burnoff	-	67,000	-	-	-	-	67,000	Cash
39	Sludge Piping Replacement	-	-	-	-	171,000	-	171,000	Cash
40	Primary Sludge PS - Roofs	-	13,000	-	-	-	-	13,000	Cash
41	Motor Control Room (Belt Press Room	-	-	-	111,000	-	-	111,000	Cash
42	Replace Raw Sludge Magnetic Flowmeter	-	-	-	-	14,000	-	14,000	Cash
43	Primary Clarifier Complex - Piping Replacement	-	-	-	-	26,000	-	26,000	Cash
44	Primary Clarifier Complex - Replace Progressive Cavity Pumps	-	-	-	-	26,000	-	26,000	Cash
45	Plant PS - Replace Centrifugal Raw Wastewater Pumps (X - 3)	-	-	177,000	-	-	-	177,000	Cash
46	Total for all Roofs	-	-	140,000	-	-	-	140,000	Cash
47	DAF Motor Control Center	-	-	-	-	-	86,000	86,000	Cash
48	Replacement Diffusers	-	425,000	372,000	-	-	-	797,000	2018 Conv
49	Rehab Aeration Arms	-	-	-	586,000	-	-	586,000	2020 Conv
50	Additional Centrifugal Blowers	-	-	-	1,773,000	-	-	1,773,000	2020 Conv
51	Return Sludge PS #1 - Motor Control Center	-	-	74,000	-	-	-	74,000	Cash
52	Return Sludge PS #2 - Motor Control Center	-	-	74,000	-	-	-	74,000	Cash
53	Aeration Basins - Replace Sheaths	-	168,000	-	-	-	-	168,000	2018 Conv
54	Furnace - Maintenance Garage	-	15,000	-	-	-	-	15,000	Cash
55	Rehab Muffin Monsters, build 1 of 3 every year (3 year cycle)	51,000	-	54,000	58,000	62,000	66,000	291,000	Cash
56	Mo Ave Sewer Rehab	-	3,000,000	-	-	-	-	3,000,000	2018 Conv
57	WPF Levee Stormwater PS	-	5,000,000	-	-	-	-	5,000,000	2018 Conv
58	**Subtotal**	**191,000**	**8,939,000**	**1,556,000**	**2,528,000**	**299,000**	**152,000**	**13,665,000**	
59	**Total**	**34,681,814**	**47,836,297**	**6,053,500**	**8,493,000**	**2,831,000**	**3,045,000**	**102,940,611**	
	SUMMARY								
60	**Financed with 2014B**	-	975,900	-	-	-	-	**975,900**	
61	**Financed with 2015A**	500,000	4,551,400	-	-	-	-	**5,051,400**	
62	**Total financed through SRF Bonds**								
63	Environmental/Regulatory Projects	-	-	-	-	-	-	-	
64	CSO LTCP Projects	30,000,000	27,100,000	-	-	-	-	57,100,000	
65	Collection System Capital Projects	-	-	-	-	-	-	-	
66	WWTP Capital Projects	-	-	-	-	-	-	-	
67								**57,100,000**	
	Total financed through Conventional Bonds								
68	Environmental/Regulatory Projects	-	1,474,000	-	-	-	-	1,474,000	
69	CMOM Projects	-	299,500	500,000	-	-	-	799,500	
70	CSO LTCP Projects	-	-	-	-	-	-	-	
71	System Expansion Projects	-	-	-	-	-	-	-	
72	Collection System Capital Projects	-	1,088,000	-	1,551,000	-	-	2,639,000	
73	WWTP Capital Projects	-	8,593,000	1,037,000	2,359,000	-	-	11,989,000	
								16,901,500	
74	**Total financed through Operating Funds**	4,181,814	3,754,497	4,516,500	4,583,000	2,831,000	3,045,000	22,911,811	
75	Total Annual Expenditures	34,681,814	47,836,297	6,053,500	8,493,000	2,831,000	3,045,000	**102,940,611**	

4.3 FINANCING PLAN

Total planned investment from FY 2017 through FY 2022 is $102.9 million, as shown on Table 7. The CIP financing plan is presented in Table 8. The funding sources are summarized on Lines 1 through 6 and the Capital Fund requirements, or use of funds, are shown on Lines 7 through 12. The Capital Fund had a balance of $6.03 million, as shown in Table 7 Line 60 and 61, is from the 2014B ($5,755,000) and 2015A ($10,300,000) Revenue bonds. The use of these funds can be seen in the Funding Source column on Table 7.

In April 2011 and again in February 2015, the voters of St. Joseph voted for bond approval that allows the city to apply to the Missouri Department of Natural Resources to participate in its SRF program. The SRF program provides low interest loans that have lower interest rates than conventional bond issues. The projected interest rate and term for future SRF bonds are 1.25% for 30 years. This compares to 20-year conventional bonds with a 3.5%-5.0% interest rates used in this study. Bonding assumptions were provided by the City's advisors.

The SRF bonds are being used for the major capital projects in the study period, as shown in Table 7 Lines 62-67. This study assumes that SRF funds will be available for all projects requesting SRF funding. Should some projects be denied SRF funding, additional conventional bonds may be required which could impact future rate increases.

The CIP presented in Table 7 is anticipated to be funded with the remaining proceeds from the 2014B revenue bonds ($975,900) and 2015A revenue bonds($5.1million), as well as SRF Bond in 2017 ($67.3 million), and conventional bonds in 2018 ($14.2 million), and 2020 ($4.3 million).

The Operating Fund will be used to fund projects not included in the bond issues, such as a majority of the CMOM Program, CSO Green Solutions, system expansion projects, etc. The operating fund can also be used to offset minor contingencies on the proposed projects.

Table 8 Capital Flow of Funds

Fiscal Years Ending June 30

Line No.	Description	Estimated 2017	Projected 2018	2019	2020	2021	2022	Total
		$	$	$	$	$	$	$
	SOURCE OF FUNDS							
1	Funds on Hand at Beginning of Year	6,027,300	42,627,300	1,537,000	0	0	0	6,027,300
2	Transfer from Operating Fund	4,181,800	3,754,500	4,516,500	4,583,000	2,831,000	3,045,000	22,911,800
3	Conventional Bond at Par	0	14,170,000	0	4,264,000	0	0	18,434,000
4	Net Short Term Bond	0	0	0	0	0	0	0
5	SRF Loan	67,300,000	0	0	0	0	0	67,300,000
6	Total Funds Available	77,509,100	60,551,800	6,053,500	8,847,000	2,831,000	3,045,000	114,673,100
	USE OF FUNDS							
7	Major Capital Improvement Program	34,681,800	47,836,300	6,053,500	8,493,000	2,831,000	3,045,000	102,940,600
8	Bond Issuance Costs	0	135,800	0	40,200	0	0	176,000
9	Bond Reserve Fund	0	1,042,700	0	313,800	0	0	1,356,500
10	Net Payoff on Other Loans	200,000	10,000,000	0	0	0	0	10,200,000
11	Reimbursement to Operating Fund	0	0	0	0	0	0	0
12	Total Use of Funds	34,881,800	59,014,800	6,053,500	8,847,000	2,831,000	3,045,000	114,673,100
13	Funds on Hand at End of Year	42,627,300	1,537,000	0	0	0	0	0

4.4 DEBT SERVICE REQUIREMENTS

Table 9 presents a summary of the annual total of the monthly deposits into the Sewer Debt Fund for both the existing and proposed revenue bonds. The financial plan presented in this report uses the $10 million SRF bond to fund design work on Blacksnake and that will be paid off early with the proceeds from the $67.3 million SRF bond. The FY 2017 SRF bond issue of $67.3 million is used for

the Stormwater Separation Conduits in the Blacksnake watershed and has a 30-year term and an average interest rate of 1.25 percent, plus a 0.5 percent administration fee.

Conventional bonds will be used to fund the remaining projects that are not covered with cash and unlikely to receive SRF funding. There are 11 projects included in these bond issuances for various major replacement or rehabilitation projects. The conventional bond issues are projected in 2018 ($14.2 million) and 2020 (4.3million). The forecast assumes 4.0 percent interest for 20 years, consistent with prior year assumptions provided by the City's financial advisor.

Annual debt service payments increase significantly after FY 2018 due to the full principal and interest payments starting for new debt being issued in FY2017. Annual debt service increases from $12.2 million in FY 2017 to $15.9 million by FY 2022.

Table 9 Existing and Proposed Debt Service

Fiscal Years Ending June 30

Description	2017	2018	2019	2020	2021	2022
	$	$	$	$	$	$
State Environmental Improvement & Energy Resources Authority, Series 1993	0	0	0	0	0	0
State Environmental Improvement & Energy Resources Authority, Series 1997	538,800	0	0	0	0	0
Sewer System Revenue Bonds Series 2003	62,500	60,300	58,100	60,900	58,400	60,900
Sewer System Revenue Bonds Series 2004	837,300	838,300	838,600	838,400	837,500	841,100
Sewer System Revenue Bonds Series 2011	1,593,900	1,594,100	1,593,300	1,591,500	1,593,700	1,589,700
State Revolving Fund Loan Series 2013	940,200	876,200	880,400	882,200	885,900	889,200
State Revolving Fund Loan						
Series 2014	3,659,300	3,400,500	3,412,100	3,425,400	3,439,400	3,453,100
Series 2014A	1,537,100	1,551,200	1,565,900	1,580,200	1,596,100	1,611,500
Series 2016	397,500	0	0	0	0	0
Conventional Bonds						
Series 2014B	378,700	379,700	380,600	386,400	387,000	387,500
Series 2015A	719,100	718,700	898,100	721,300	722,300	722,300
Series 2015B	1,534,300	2,096,000	2,098,400	2,098,800	2,099,300	2,096,500
Subtotal Existing Annual Debt Service	12,198,700	11,515,000	11,725,500	11,585,100	11,619,600	11,651,800
PROPOSED BONDS						
Proposed SRF Bonds FY 2017 Issue ($67.3 million)	0	350,700	841,600	1,868,000	2,894,400	2,894,400
Proposed Conventional Bonds FY 2018 Issue ($14.2 million)	0	425,100	1,042,700	1,042,700	1,042,700	1,042,700
Proposed Conventional Bonds FY 2020 Issue ($4.3 million)	0	0	0	127,900	313,800	313,800
Subtotal Proposed Annual Debt Service	0	775,800	1,884,300	3,038,600	4,250,900	4,250,900
Total Annual Debt Service	12,198,700	12,290,800	13,609,800	14,623,700	15,870,500	15,902,700

5 Summary of Revenue Requirements and Proposed Adjustment to Revenue

The total revenue requirements of the Sewer Utility consist of operation and maintenance expense, debt service requirements, routine annual capital outlays, and cash financing of major capital improvements. Revenue levels must also be sufficient to meet existing and future revenue bond covenants that net revenues in each fiscal year be not less than 110 percent of the debt service requirement. It is also essential that the Sewer Utility maintain sufficient cash balances to provide for Operating Fund encumbrances, offset fluctuations in revenues and expenditures, and provide for funds for use in emergencies. Charges for wastewater service provide the principal source of revenues to meet these requirements with additional revenue being derived from miscellaneous operating and non-operating income and from interest earnings.

Table 10 combines the projected revenues and revenue requirements into a pro forma operations statement or cash flow summary. The cash flow summary provides a basis for evaluation of the timing and size of wastewater revenue increases that are indicated to be necessary to meet the projected revenue requirements for the period FY 2018 through FY 2022. Projected revenues from wastewater service charges under existing rates are shown on Lines 1 through 4. The indicated total additional revenues under proposed rate increases are shown on Line 10. The increased revenues are the result of the rate increases shown on Lines 5 through 9. The revenue increase effective dates shown on Lines 5 through 9 of Table 10 indicate when additional revenue associated with the revenue increases will be realized. These revenue increases are primarily needed to cover large increases in debt service due to implementation of mandated regulatory projects and the CSO LTCP, in addition to higher cash financed capital projects, which reduce net revenues available for debt coverage purposes, and net operating reserve balances available to cover a working capital allowance.

Projected miscellaneous operating revenues from Table 5 are shown on Line 12. Interest income from the Operating and Capital Fund balances are shown on Line 13. These monies are projected to yield an average annual interest rate of 1.0 percent for the period. Interest income on the Bond Reserve Fund, shown on Line 14, is also calculated using a 1.0 percent interest rate. With the proposed revenue increases, total Sewer Utility revenues are projected to range from $ 29,631,300 in FY 2017 to $ 36,678,700 in FY 2022 (Line 15).

Revenue requirements for operation and maintenance expense, including transfers, debt service, routine annual capital outlays, and cash financed capital projects are taken from Tables 6, 8, and 9 and are summarized on Lines 16 through 24. These annual operating requirements are projected to increase from $31,290,700 in FY 2017 to $36,253,600 in FY 2022, as shown on Line 26 of Table 10.

The projected net annual operating balance is shown on Line 27 and ranges from a low of negative $1.7 million in FY 2017 to a high of approximately $2.1 million in FY 2018. Any annual surpluses accrued will be used to finance future capital projects and reduce the amount of future bond issues. The end of year operating cash balances shown on Line 28 include monies that have not been encumbered and which, by ordinance, must be available to the Sewer Utility. The City's current policy on operating reserves is 120 days of O&M expenses, which is approximately $5 million on Line 30. This serves two primary purposes: first, with the substantial amount of new debt the City is forecast to take on in the coming years, it is prudent utility practice to have additional liquidity to offset fluctuations in revenues and expenditures and allow for contingencies; and second, it provides the City with a stronger base for the City to maintain its current credit rating. With the significant amount of debt the City plans to issue to fund its CSO LTCP and mandated regulatory

projects, there is a risk the rating agencies could lower the City's credit rating, possibly increasing the cost of issuing additional debt.

Table 10 Operating Flow of Funds

Fiscal Years Ending June 30

Line No.	Operating Fund		Estimated 2017	Projected 2018	2019	2020	2021	2022
			$	$	$	$	$	$
	Revenue							
1	Retail Revenue Under Existing Rates (Table 4)		25,077,400	25,847,300	25,847,300	25,847,300	25,847,300	25,847,300
2	SSJISD Under Existing Rates (Table 4)		1,799,500	1,756,200	1,756,200	1,756,200	1,756,200	1,756,200
3	National Beef Leathers Under Existing Rates (Table 4)		273,000	264,400	264,400	264,400	264,400	264,400
4	Triumph Foods Under Existing Rates (Table 4)		1,065,000	1,070,100	1,070,100	1,070,100	1,070,100	1,070,100
	Additional Sewer Revenue Required:							
	Revenue Increase Effective Date	Annualized Revenue Increase (a)						
5	July 1, 2017	11.00%		3,183,200	3,183,000	3,183,200	3,183,200	3,183,200
6	July 1, 2018	3.00%			963,600	963,600	963,600	963,600
7	July 1, 2019	3.00%				992,500	992,500	992,500
8	July 1, 2020	2.00%					681,500	681,500
9	July 1, 2021	2.00%						695,200
10	Total Additional Sewer Revenue		-	3,183,200	4,146,600	5,139,300	5,820,800	6,516,000
11	Total Sewer Revenue		28,214,900	32,121,200	33,084,600	34,077,300	34,758,800	35,454,000
12	Miscellaneous Revenue (Table 5)		1,136,500	1,022,400	1,012,700	1,015,600	1,018,400	1,021,200
13	Interest Income - Operating & Capital Fund (b)		135,000	128,000	27,000	29,000	41,000	45,000
14	Interest Income - Bond Reserve Fund		144,900	150,100	155,400	156,900	158,500	158,500
15	Total Operating Fund Revenues Available		29,631,300	33,421,700	34,279,700	35,278,800	35,976,700	36,678,700
	Revenue Requirements							
16	Operation and Maintenance Expense (Table 6) (c)		14,296,100	14,259,700	14,733,200	15,293,500	15,845,400	16,422,700
17	Net Revenues		15,335,200	19,162,000	19,546,500	19,985,300	20,131,300	20,256,000
	Debt Service							
18	Existing Debt Service (Table 9)		12,198,700	11,515,000	11,725,500	11,585,100	11,619,600	11,651,800
19	Proposed Bond Debt Service (Table 9)		-	775,800	1,884,300	3,038,600	4,250,900	4,250,900
20	Total Debt Service		12,198,700	12,290,800	13,609,800	14,623,700	15,870,500	15,902,700
21	Less: Interest on EIERA Reserve Fund		(14,900)	-	-	-	-	-
22	EIERA Administrative Fee		4,000	-	-	-	-	-
23	Net Effective Debt Service		12,187,800	12,290,800	13,609,800	14,623,700	15,870,500	15,902,700
24	Routine Capital Outlay (Table 6)		625,000	1,055,700	808,200	832,500	857,500	883,200
25	Transfer to (from) Capital Fund		4,181,800	3,754,500	4,516,500	4,583,000	2,831,000	3,045,000
26	Total Operating Requirements		31,290,700	31,360,700	33,667,700	35,332,700	35,404,400	36,253,600
27	Net Annual Balance		(1,659,400)	2,061,000	612,000	(53,900)	572,300	425,100
28	Beginning of Year Balance		4,330,000	2,670,600	4,731,600	5,343,600	5,289,700	5,862,000
29	End of Year Balance		2,670,600	4,731,600	5,343,600	5,289,700	5,862,000	6,287,100
30	Desired Working Capital Allowance (d)		4,700,100	4,688,100	4,843,800	5,028,000	5,209,400	5,399,200

(a) Average annual revenue adjustment percentage. Revenues reflect twelve effective months in the first year of revenue adjustment
(b) Interest earnings based on budget and projected fund balances
(c) Includes Operation & Maintenance Expense and Transfers
(d) Working capital allowance calculated as 120 days operation and maintenance expense

5.1 DEBT SERVICE COVERAGE

For existing debt, an annual debt service coverage test must be met regardless of whether additional bonds will be issued during the study period. The annual coverage test compares annual net revenues with annual debt service. Bond covenants stipulate that annual Net Revenues Available for Debt Service must be at least 110 percent of annual principal and interest payments.

5.2 RATE COVENANT

A summary of the annual revenue bonds test found in the bond indentures for the Series 1992 Bonds and similarly, in Section 902 of Article IX of the outstanding EIERA bonds, is as follows:

> The City will fix, establish, maintain and collect such rates and charges for the use and services furnished by or through the System as will produce Revenues sufficient to (a) pay the costs of the operation and maintenance of the System; (b) pay the principal of and interest on the Bonds as and when the same become due at the Maturity thereof or any Interest Payment Date; (c) enable the City to have in each fiscal year Net Revenues not less than 110 percent of the amount required to be paid in such fiscal year on account of both principal of and interest on all System Revenue Bonds at the time outstanding; and (d) provide reasonable and adequate reserves for the payment of the Bonds and the interest thereon and for the protection and benefit of the System as provided in the Ordinance. The City will require the prompt payment of accounts for service rendered by or through the System and will promptly take whatever action is legally permissible to enforce and collect delinquent charges. The City will, from time to time as often as necessary, in accordance with and subject to applicable legal requirements, revise the rates and charges aforesaid in such manner as may be necessary or proper so that the Net Revenues will be sufficient to cover the obligations of the City under the provisions of the Ordinance. If in any fiscal year Net Revenues are less than as hereinbefore provided, the City will immediately employ a Consultant to make recommendations with respect to such rates and charges. A copy of the Consultant's report and recommendations shall be filed with the City Clerk and with the Purchaser of the Bonds and shall be furnished to any Owner of the Bonds requesting a copy of the same, at the cost of such Owner. The City is required, to the extent feasible, to follow the recommendations of the Consultant.

In order for parity bonds to be issued, two additional bonds tests exist, only one of which must be met for parity to be attained. The historical additional bonds test stipulates that net revenues available for debt service (adjusted as defined in the bond resolution) be 110 percent of average annual debt service. The future additional bonds test requires that net revenues available for debt service (adjusted as defined in the bond resolution) be 110 percent of average annual debt service for the average of the two years following commercial operation of the capital improvements financed from the proceeds of the issue.

The financial plan demonstrated herein assumes issuance of bonds in fiscal year 2018, and 2020. For purposes of this report, 110 percent coverage is assumed for all future bond issues. A summary of the EIERA, SRF, and other conventional bonds additional bonds tests is as follows:

1. The City shall not be in default in the payment of principal of or interest on any Bonds or the Parity bonds or in making any payment at the time required to be made into the respective funds and accounts created by and referred to in this Ordinance or any Parity Ordinance; and

2. The City shall obtain a certificate showing either of the following:

    a. The average annual Net Revenues Available for Debt Service as set forth in the last available annual audits for the two Fiscal Years immediately preceding the issuance of additional bonds, are at least 110 percent of the average annual debt service on the System Revenue Bonds, including the additional bonds proposed to be issued, to be paid out of the Net Revenues Available for Debt Service in succeeding Fiscal Years. Interest to be paid on any SRF Program Bonds may be reduced by the SRF Subsidy, if any. If the City has made any increase in rates for the use and services of the System and the increase has not been in

effect during all of the two Fiscal Years for which annual audits are available, the City may add the additional Net Revenues Available for Debt Service which would have resulted if the rate increase been in effect for the entire period to the audited Net Revenues Available for Debt Service; or

b. The estimated average annual Net Revenues Available for Debt Service for the two Fiscal Years immediately following the Fiscal Year in which the improvements to the System being financed by the additional bonds are to be in commercial operation, as certified by the Consultant, is at least 110 percent of the average annual debt service on the System Revenue Bonds, including the additional bonds to be issued, to be paid out of the Net Revenues Available for Debt Service in succeeding Fiscal Years following the commencement of commercial operation of the improvements. Interest to be paid on any SRF Program Bonds may be reduced by the SRF Subsidy, if any. In determining the amount of estimated Net Revenues Available for Debt Service for the purpose of this subsection, the Consultant may adjust the estimated net income and revenues by adding the estimated increase in Net Revenues Available for Debt Service resulting from any increase in rates for the use and services of the System approved by the City.

Additional revenue bonds or other obligations of the City issued under the conditions set forth in this Section shall stand on a parity with the Bonds and shall enjoy complete equality of lien on and claim against the net revenues of the System with the Bonds, and the City may make equal provision for paying said bonds and the interest thereon out of the revenue Fund and may likewise provide for the creation of reasonable system debt service funds and system debt reserve funds for the payment of such additional bonds and the interest thereon out of moneys in the Revenue Fund.

Debt service coverage for existing and proposed bonds is shown in Table 11. The annual and future bond coverage test (Line 9 and 17) must meet or exceed 110 percent. The annual coverage ranges from a high of 156 percent in 2017 to low of 127 percent in 2020 and 2021. The future additional bonds test minimum coverage of 110 percent is met every year, ranging from 114 percent to 155 percent.

The City needs to closely monitor both the annual debt service coverage and the additional bonds test as part of the annual budgeting process. Projected rate adjustments may need to be modified to assure that the City will meet the bond ordinance requirements.

Table 11 Debt Service Coverage Tests

Fiscal Years Ending June 30

Line No.	Description	2018	2019	2020	2021	2022
		$	$	$	$	$
	ANNUAL COVERAGE					
1	Total Operating Fund Revenues (a)	33,421,700	34,279,700	35,278,800	35,976,700	36,678,700
2	O&M Expense and Transfers	(14,259,700)	(14,733,200)	(15,293,500)	(15,845,400)	(16,422,700)
3	Net Operating Revenue	19,162,000	19,546,500	19,985,300	20,131,300	20,256,000
	Debt Service (b)					
4	Existing Bonds	5,687,100	5,867,100	5,697,300	5,698,200	5,698,000
5	Existing SRF	5,827,900	5,858,400	5,887,800	5,921,400	5,953,800
6	Proposed Bonds	775,800	1,884,300	3,038,600	4,250,900	4,250,900
7	EIERA Subsidy (c)	0	0	0	0	0
8	Net Debt Service	12,290,800	13,609,800	14,623,700	15,870,500	15,902,700
9	Annual Coverage = Line 3 / Line 8 (d)	156%	144%	137%	127%	127%
	ADDITIONAL BONDS TEST - FUTURE (e)					
10	Total Operating Fund Revenues (f)	33,421,700	33,316,100	33,322,700	33,339,100	33,345,900
11	O&M Expense and Transfers	(14,259,700)	(14,733,200)	(15,293,500)	(15,845,400)	(16,422,700)
12	Annual Appropriation Debt Service	(5,672,200)	(6,471,100)	(6,420,600)	(6,609,300)	(6,606,100)
13	Net Operating Revenue	13,489,800	12,111,800	11,608,600	10,884,400	10,317,100
14	Parity Debt Service (g)	6,618,600	7,138,700	8,203,100	9,261,200	9,296,600
15	Average Net Revenues Available for Debt Service (h)	11,860,200	11,246,500	10,600,750	n/a	n/a
16	Average Annual Debt Service (h)	7,670,900	8,732,150	9,278,900		
17	Future Coverage = Line 15 / Line 16 (i)	155%	129%	114%		

(a) Includes interest on Capital Fund
(b) Represents payments to bondholders.
(c) EIERA Admin Fee less Interest on EIERA Reserve Fund
(d) Requires 1.10 times coverage.
(e) Additional Bond Test is for FY16 & FY17 Blacksnake Stormwater Separation Conduit
(f) Does not include rate increases beyond FY19
(g) All Existing Bonds & Only Proposed Bonds through FY19
(h) Calculated as average of two years following test year.
(i) Requires 1.10 times coverage.

6 Cost of Service Analysis

The cost of service phase of the study consists of three steps: (1) the determination of the total cost of service to be recovered from charges for wastewater service, (2) the allocation of cost of service to functional cost components which recognize the system characteristics, and (3) the distribution of functionalized cost of service components to customer classes.

Revenue requirements to be derived from charges for wastewater service are synonymous with the total cost of service. As a basis for developing an equitable rate structure, these costs are allocable to the various customer classifications according to respective service requirements. Allocations of revenue requirements to customer classes should take into account the quantity of wastewater discharged, the number of customers, the quantity of pollutant loadings, and relative responsibility for infiltration/inflow into the wastewater system.

6.1 COST OF SERVICE TO BE ALLOCATED

The costs of service to be recovered from wastewater service revenue consist of the elements of operation and maintenance expense and capital costs, as shown in Table 12. Operation and maintenance expense includes costs directly related to the collection and treatment of wastewater, including administrative functions and maintenance of system facilities. Capital related costs include projected debt service payments on existing and proposed bonds and major capital improvements financed from revenues. The projected revenue requirement for the Sewer Utility for FY 2018 totals $31,360,700 (Line 6). Revenue requirements that are met from sources other than wastewater revenue such as miscellaneous revenues and interest income on Operating, Capital, and Bond Reserve Funds are deducted from total revenue requirements on Lines 7 through 10. There will be no full year rate adjustment for FY 2018 since this year's rate increases will be in place for the full fiscal year. The projected increase in the City's Operating Fund is $2,061,000 as shown on Line 12. The resulting total cost of service for FY 2018 totals $32,121,200.

Table 12 Development of Total Cost of Service

For Fiscal Year 2018

Line No.	Description	O&M Costs	Capital Costs	Total
	Revenue Requirements			
1	Operation and Maintenance Expense	14,259,700		14,259,700
2	Existing Debt Service		11,515,000	11,515,000
3	Proposed Debt Service		775,800	775,800
4	Routine Capital Outlay	1,055,700		1,055,700
5	Transfer to (from) Capital Fund	-	3,754,500	3,754,500
6	Total Revenue Requirements	$15,315,400	$16,045,300	$31,360,700
	Adjustments to Revenue Requirements			
7	Miscellaneous Revenues	992,400	30,000	1,022,400
8	Interest Income - Operating and Capital Funds		128,000	128,000
9	Interest Income - Bond Reserve Fund	-	150,100	150,100
10	Subtotal	$14,323,000	$15,737,200	$30,060,200
11	Full Year Rate Adjustment	0	0	-
12	Increase (Decrease) in Fund Balances	-	2,061,000	2,061,000
13	Total FY 2018 Cost of Service	$14,323,000	$17,798,200	$32,121,200

6.2 FUNCTIONAL COST COMPONENTS

The cost of wastewater service is analyzed by system function to properly allocate the costs to various classes of customers. Costs of service are separated into applicable functional cost components. The cost components are Volume, Capacity, Biochemical Oxygen Demand (BOD), Suspended Solids (SS), Ammonia, and Fats, Oil, and Grease (FOG) for both common to retail customers and common to all customers, SSJISD Pump Station, Septage, and Billing.

Volume costs are those costs, which vary directly with the volume of wastewater flow in the system. Included in the volume component are costs associated with primary and secondary clarifiers and disinfection.

Capacity costs recognizes that certain facilities are designed to handle peak wastewater flows, in contrast to other "volume related" facilities that are based on annual flows, or average daily flows. The Capacity factor is the ratio of peak flow to average daily flow and represents the average peak flow a customer will have on any given day. It is calculated by taking the flow for Contributed and Infiltration/Inflow (I/I) for each class, multiplying each by an appropriate capacity factor, and then dividing it by the number of days in the year. The capacity factors for the different customers are as follows:

- Retail – Contribution 1.5 and Infiltration/Inflow 4.0
- Triumph Foods - Contribution 1.5
- National Beef Leathers - Contribution 1.5
- SSJISD – Contribution 2.5

It should be noted the SSJISD has a higher capacity factor than the other wholesale (and retail) customers. This is to reflect their prior issues with high flow during wet weather periods. These capacity factors will be reassessed in the next cost allocation update in 2019.

BOD strength costs include those costs, which are influenced in magnitude by the BOD in the influent flow. Principal costs included in the BOD component are the operating and capital costs related to roughing filters, aeration facilities, and that portion of sludge disposal facilities required for handling and disposal of BOD related sludge.

Suspended solids strength costs consist of the treatment plant related costs that vary with the quantity of suspended solids in the influent flow. Included in this cost component are the costs of sludge pumping and disposal of sludge resulting from removal of suspended solids from the raw wastewater.

FOG strength costs include those costs, which are influenced in magnitude by the FOG in the influent flow. Similar to BOD, principal costs included in the FOG component are the operating and capital costs related to roughing filters, aeration facilities, and that portion of sludge disposal facilities required for handling and disposal of FOG related sludge.

Ammonia strength costs include those costs, which are influenced in magnitude by the ammonia in the influent flow. Principal costs included in the Ammonia component are mainly related to operating as a majority of the capital costs are recovered from the Ammonia Fixed charge. The operating costs related to Ammonia are Secondary Treatment, sludge, vehicles, gas, chemical, power, general treatment, and treatment repair and replacement. The portion allocated to Ammonia is related to the portion of sludge related to Ammonia that is removed from the system.

Septage cost are related to the operating and capital costs to treat and handle septage that is discharged at the Septage Upload Station by septage haulers that truck in waste from septic tanks or other hauled wastewater.

SSJISD Pump Station costs are costs associated with the SSJISD Pump Station and related facilities. Billing costs are costs associated with billing and collection, including bad debt expense.

6.3 ALLOCATION TO COST COMPONENTS

Each element of cost is allocated to functional cost components on the basis of the parameter or parameters having significant influence on the magnitude of the element of cost. The separation of costs into functional components provides a means for distributing such costs to the various classes of customers on the basis of the respective requirements for service of each particular class. Costs are allocated directly to cost components to the extent they are identifiable. General and administrative cost elements are then allocated on the basis of the allocation of other costs to which they are most nearly related. As mentioned in the Introduction of this report, the allocation factors must be updated at least every 5 years, and were last updated in FY 2015. The fixed asset allocation will be updated annually.

6.3.1 O&M Allocation Components

The first step in the O&M cost allocation process is to assign the O&M expenses shown in Table 13, developed from the budget details, to various categories of costs which are necessary for subsequent assignment to appropriate functional cost components. The allocation percentages for each line item are summarized in Table 13. The Headings from Table 13 (Column A - O) are carried forward and used in the Description Column in Table 14. Each of the cost categories from Table 13 are then distributed to the different functional cost components recognizing the primary cost driver for each of the various costs. The description for how each allocation is determined is found in Column Q. The dollar amounts, from Table 13 Column A, are then distributed in Table 15 based on the allocations identified in Table 14. The totals in Line 15 of Table 15 are also found on Line 6 in Table 12. Total O&M is then adjusted (Total O&M less Miscellaneous Revenues, Table 12 Line 7) and allocated based on Line 15.

Table 13 O&M Functional Cost Components

Line No.	Description	[A] Total	[B] Primary	[C] Secondary	[D] Sludge	[E] Pumping	[F] Vehicles	[G] Gas	[H] Power	[I] Chemicals	[J] Laboratory	[K] Gen. Treatment	[L] Treatment - Repair & Replace	[M] Sewer Maintenance	[N] General WW	[O] Billing
	WW Treatment															
1	Personnel	2,789,200	34.20%	33.37%	10.19%	18.65%	3.59%									
2	Chemicals	438,600								100.00%						
3	Motor Fuel & Lubricants	100,000								100.00%						
4	Other Materials and Supplies	729,100										100.00%				
5	Gas Service	165,000						100.00%								
6	Electric Service	1,556,700							100.00%							
7	Transfer to Aviation	48,300			100.00%											
8	Routine Repair and Replacement	2,244,200											100.00%			
9	Laboratory	721,600									100.00%					
10	Admin. & General	2,176,000										28.00%				72.00%
11	Sewer Maintenance	2,351,300												100.00%		
12	Transfer to General Fund	1,995,500													100.00%	
13	Total Wastewater O&M	15,315,500	953,898	930,844	332,409	520,135	100,213	165,000	1,556,700	538,600	721,600	1,338,274	2,244,200	2,351,300	1,995,500	1,566,826

Table 14 O&M Cost Allocation Factors

Line No.	Description	Total	Common to Retail						Common to All						SSJISD	Septage	Billing	Basis of Allocation
		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]	[O]	[P]	[Q]
			Volume	Capacity	BOD	TSS	Ammonia	FOG	Volume	Capacity	BOD	TSS	Ammonia	FOG				
1	Primary Treatment	100.00%	90.0%		3.0%	6.0%		1.0%										90% Primary Volume and Sludge Based on Appendix A-1 (Primary Only)
2	Secondary Treatment	100.00%							19.1%	0.0%	61.5%	16.7%	2.7%					Appendix A-2
3	Sludge	100.00%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
4	Pumping	100.00%		81.6%											18.4%			Based on Fixed Assets
5	Vehicles	100.00%	9.5%	5.4%	7.7%	15.3%		2.6%	2.8%	2.9%	32.1%	14.4%	6.4%		0.9%			Appendix A-3
6	Gas	100.00%	44.0%						56.0%									Average Day Primary & Secondary
7	Electric Service	100.00%	45.5%	0.0%	1.9%	3.7%		0.6%	5.3%	0.0%	35.5%	3.4%	1.5%		2.6%			Appendix A-5
8	Chemicals	100.00%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
9	Laboratory	100.00%	12.5%	0.0%	12.5%	12.5%		12.5%	16.7%	0.0%	16.7%	16.6%	0.0%		0.0%			Appendix A-6
10	General Treatment	100.00%	23.4%	10.5%	5.3%	8.3%	0.0%	3.2%	7.3%	0.1%	26.0%	11.0%	2.6%	0.0%	2.4%			Allocate on Basis of Treatment O&M , Less Power, Chem.
11	Treatment Repair & Replacement	100.00%	2.4%	7.6%	3.1%	7.7%	0.0%	1.1%	8.5%	42.1%	20.4%	5.4%	0.5%	0.0%	0.0%	1.1%	0.0%	Allocate on Basis of Treatment Plant in Service
12	Sewer Maintenance	100.00%		100.0%														Primary Capacity
13	Transfer to General Fund	100.00%	16.2%	47.1%	2.7%	3.9%	0.0%	1.9%	5.1%	0.0%	14.5%	5.9%	1.0%	0.0%	1.6%			Allocate on Basis of Treatment O&M and Sewer Maint., Less Power, & Chem.
14	Billing	100.00%															100.0%	Billing

Table 15 O&M Allocated Costs

Line No.	Description	[A] Total	[B] Common to Retail: Volume	[C] Common to Retail: Capacity	[D] Common to Retail: BOD	[E] Common to Retail: TSS	[F] Common to Retail: Ammonia	[G] Common to Retail: FOG	[H] Common to All: Volume	[I] Common to All: Capacity	[J] Common to All: BOD	[K] Common to All: TSS	[L] Common to All: Ammonia	[M] Common to All: FOG	[N] SSJISD	[O] Septage	[P] Billing
		$	$	$	$	$	$	$	$	$	$	$	$	$	$		$
1	Primary Treatment	953,898	858,508	-	28,617	57,234	-	9,539	-	-	-	-	-	-	-		-
2	Secondary Treatment	930,844	-	-	-	-	-	-	177,791	-	572,469	155,451	25,133	-	-		-
3	Sludge	332,409	-	-	34,238	67,147	-	11,634	-	-	130,304	61,163	27,922	-	-		-
4	Pumping	520,135	-	424,431	-	-	-	-	-	-	-	-	-	-	95,705		-
5	Vehicles	100,213	9,520	5,412	7,716	15,333	-	2,606	2,806	2,906	32,169	14,431	6,414	-	902		-
6	Gas	165,000	72,600	-	-	-	-	-	92,400	-	-	-	-	-	-		-
7	Electric Service	1,556,700	708,299	-	29,577	57,598	-	9,340	82,505	-	552,629	52,928	23,351	-	40,474		-
8	Chemicals	538,600	-	-	55,476	108,797	-	18,851	-	-	211,131	99,102	45,242	-	-		-
9	Laboratory	721,600	90,200	-	90,200	90,200	-	90,200	120,507	-	120,507	119,786	-	-	-		-
10	General Treatment	1,338,274	312,949	140,383	70,625	110,620	-	43,381	98,338	949	348,336	146,944	34,198	-	31,551		-
11	Treatment Repair & Replacement	2,244,200	53,795	171,208	69,839	172,799	-	23,685	191,134	945,690	458,176	121,279	11,221	-	-	25,328	-
12	Sewer Maintenance	2,351,300	-	2,351,300	-	-	-	-	-	-	-	-	-	-	-		-
13	Transfer to General Fund	1,995,500	323,522	938,984	54,281	77,624	-	38,482	101,660	981	288,821	118,449	20,078	-	32,617		-
14	Billing	1,566,826	-	-	-	-	-	-	-	-	-	-	-	-	-		1,566,826
15	Total O&M	15,315,500	2,429,393	4,031,716	440,569	757,352	-	247,718	867,142	950,526	2,714,542	889,533	193,559	-	201,249	25,328	1,566,826
16	Less: O&M Adjustments	(992,400)															
17	Net O&M From Rates	14,323,000	2,272,100	3,770,400	412,000	708,300	-	231,700	810,900	888,900	2,538,600	831,900	181,000	-	188,200	23,700	1,465,300

6.3.2 Capital Allocation Components

The first step in the Capital allocation process was to assign the various fixed assets line items to appropriate functional cost components. The fixed asset categories are shown in Table 16 in the Description Column. The description for how each fixed asset category is to be assigned to one or more of the functional cost components is found in Column Q. The results of the allocations of the fixed assets are shown in Table 17. The total capital costs to be recovered from wastewater rates are shown on Line 43 of Table 17. This total may also be found in Table 12 by adding Line 2, 3, and 5 and subtracting Lines 7 through 9.

The specific allocation of the Ammonia Removal project is found on Table 16 Lines 27 through 28 and the results of the allocation are shown in Table 17 Lines 33 and 34. Table 17 Line 44 shows the applicable amount of debt service for the Ammonia project. This amount is recovered in the fixed charge shown in Table 23. This amount is separated from the capital allocations and is shown in Column N of Tables 19 and 20. This year the fixed charge now includes principal, interest, and administration fees from the SRF loan that will applicable to the Ammonia Removal project in FY 2018.

The allocation of Existing and Proposed Debt Service (Table 17 Lines 39-42) includes Construction Work in Progress (CWIP) (Appendix I-6.7). Starting in FY15, the fixed asset (plant) allocation factors are updated every year as part of the rate study.

Table 16 Capital Cost Allocation Factors

Line No.	Description	[A] Total	[B] Common to Retail: Volume	[C] Common to Retail: Capacity	[D] Common to Retail: BOD	[E] Common to Retail: Suspended Solids	[F] Common to Retail: Ammonia	[G] Common to Retail: FOG	[H] Common to All: Volume	[I] Common to All: Capacity	[J] Common to All: BOD	[K] Common to All: Suspended Solids	[L] Common to All: Ammonia	[M] Common to All: FOG	[N] SSJISD	[O] Septage	[P] Billing	[Q] Basis of Allocation
	COLLECTION & CONVEYANCE																	
1	Collection and Conveyance Mains	100%		100.0%														Primary Capacity
2	Pumping & Lift Stations	100%		100.0%														Primary Capacity
3	SSJISD Pump Stations	100%													100.0%			SSJISD
	TREATMENT																	
4	Grit Basins	100%				100.0%												Suspended Solids
5	Primary Clarifiers	100%	90.0%		3.0%	5.9%		1.0%										90% Primary Volume and Sludge Based on Appendix A-1 (Primary Only)
6	Other Primary	100%		100.0%														Primary Capacity
7	Pumping	100%		100.0%														Primary Capacity
8	Septage	100%														100.0%		Septage
9	Trickling Filters	100%									100.0%							Secondary Capacity
10	Blowers	100%									82.4%		17.6%					BOD & Ammonia on Appendix A-1
11	Aeration	100%									82.4%		17.6%					BOD & Ammonia on Appendix A-1
12	Secondary Clarifiers	100%							90.0%		8.2%		1.8%					90% Secondary Volume 10% Secondary BOD & SS
13	Other Secondary	100%							30.1%	10.4%	44.6%	7.6%	7.3%	0.0%				Secondary Treatment Plant
14	Sludge Pumping	100%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
15	Aerobic Digesters	100%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
16	Dissolved Air Flotation (DAF)	100%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
17	Sludge Handling	100%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
18	Outfall	100%								100.0%								Secondary Capacity
19	Meters	100%							100.0%									Secondary Volume
20	Laboratory	100%							100.0%									Secondary Volume
21	General	100%	5.3%	11.8%	2.6%	11.0%	0.0%	0.9%	18.8%	6.5%	27.9%	4.8%	4.6%	0.0%	0.0%	5.9%		Treatment Plant
	SECONDARY EXPANSION																	
22	Secondary Expansion - Secondary Clarifiers	100%							90.0%		8.2%		1.8%					90% Secondary Volume 10% Secondary BOD & SS
	ADMINISTRATIVE																	
23	Admin. & General	100%	4.3%	18.7%	2.1%	9.0%	0.0%	0.7%	19.5%	5.3%	23.2%	3.9%	3.8%	0.0%	0.0%	4.8%	4.5%	Total Treatment Plant
24	Billing Software	100%															100.0%	Billing
	CONTRIBUTIONS																	
25	Secondary Expansion - Secondary Clarifiers	100%							90.0%		8.2%		1.8%					90% Secondary Volume 10% Secondary BOD & SS
26	Collection and Conveyance Mains	100%		100.0%														Primary Capacity
	AMMONIA PROJECT																	
27	Secondary Expansion - Ammonia Project	100%	0.0%	0.0%	0.0%	0.0%		0.0%	16.0%	2.8%	60.9%	3.1%	17.3%		0.0%			Appendix A-12
28	Ammonia Phase I	100%	0.0%	0.0%	0.0%	0.0%		0.0%	16.0%	2.8%	60.9%	3.1%	17.3%		0.0%			Appendix A-12

Table 17 Capital Allocated Costs

Line No.	Description	[A] Total	[B] Common to Retail: Volume	[C] Common to Retail: Capacity	[D] Common to Retail: BOD	[E] Common to Retail: Suspended Solids	[F] Common to Retail: Ammonia	[G] Common to Retail: FOG	[H] Common to All: Volume	[I] Common to All: Capacity	[J] Common to All: BOD	[K] Common to All: Suspended Solids	[L] Common to All: Ammonia	[M] Common to All: FOG	[N] SSJISD	[O] Septage	[P] Billing	[Q] Basis of Allocation
	COLLECTION & CONVEYANCE																	
1	Collection and Conveyance Mains	101,407,358	-	101,407,358	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	Pumping & Lift Stations	1,886,992	-	1,886,992	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	SSJISD Pump Stations	1,689,472	-	-	-	-	-	-	-	-	-	-	-	-	1,689,472	-	-	
4	Subtotal	104,983,822	-	103,294,350	-	-	-	-	-	-	-	-	-	-	1,689,472	-	-	
	TREATMENT																	
5	Grit Basins	6,606,547	-	-	-	6,606,547	-	-	-	-	-	-	-	-	-	-	-	
6	Primary Clarifiers	850,079	765,071	-	25,502	50,155	-	8,501	-	-	-	-	-	-	-	-	-	
7	Other Primary	487,044	-	487,044	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	Pumping	2,320,542	-	2,320,542	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	Septage	269,210	-	-	-	-	-	-	-	-	-	-	-	-	-	269,210	-	
10	Trickling Filters	1,560,260	-	-	-	-	-	-	-	-	1,560,260	-	-	-	-	-	-	
11	Blowers	533,027	-	-	-	-	-	-	-	-	438,963	-	94,064	-	-	-	-	
12	Aeration	744,150	-	-	-	-	-	-	-	-	612,830	-	131,321	-	-	-	-	
13	Secondary Clarifiers	3,449,303	-	-	-	-	-	-	3,104,373	-	284,060	-	60,870	-	-	-	-	
14	Other Secondary	91,344	-	-	-	-	-	-	27,479	9,476	40,720	6,974	6,695	-	-	-	-	
15	Sludge Pumping	626,114	-	-	64,490	126,475	-	21,914	-	-	245,437	115,205	52,594	-	-	-	-	
16	Aerobic Digesters	9,280,847	-	-	955,927	1,874,731	-	324,830	-	-	3,638,092	1,707,676	779,591	-	-	-	-	
17	Dissolved Air Flotation (DAF)	13,646	-	-	1,406	2,757	-	478	-	-	5,349	2,511	1,146	-	-	-	-	
18	Sludge Handling	8,628,769	-	-	888,763	1,743,011	-	302,007	-	-	3,382,477	1,587,693	724,817	-	-	-	-	
19	Outfall	26,093,003	-	-	-	-	-	-	-	26,093,003	-	-	-	-	-	-	-	
20	Meters	31,018	-	-	-	-	-	-	31,018	-	-	-	-	-	-	-	-	
21	Laboratory	1,014,080	-	-	-	-	-	-	1,014,080	-	-	-	-	-	-	-	-	
22	General	5,040,462	266,864	593,030	131,060	553,594	-	44,477	949,095	327,274	1,406,431	240,874	231,248	-	-	296,515	-	
23	Subtotal	67,639,446	1,031,935	3,400,617	2,067,148	10,957,270	-	702,206	5,126,044	26,429,752	11,614,620	3,660,933	2,082,345	-	-	565,725	-	
	SECONDARY EXPANSION																	
24	Secondary Expansion - Secondary Clarifiers	12,449,974	-	-	-	-	-	-	11,204,977	-	1,025,292	-	219,705	-	-	-	-	
25	Subtotal	12,449,974	-	-	-	-	-	-	11,204,977	-	1,025,292	-	219,705	-	-	-	-	
	ADMINISTRATIVE																	
26	Admin. & General	3,165,388	137,117	592,480	67,340	284,442	-	22,853	617,153	168,156	734,487	123,763	121,357	-	-	152,352	143,888	
27	Billing Software	41,525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41,525	
28	Subtotal	3,206,913	137,117	592,480	67,340	284,442	-	22,853	617,153	168,156	734,487	123,763	121,357	-	-	152,352	185,413	
	CONTRIBUTIONS																	
29	Secondary Expansion - Secondary Clarifiers	(12,449,974)	-	-	-	-	-	-	(11,204,977)	-	(1,025,292)	-	(219,705)	-	-	-	-	
30	Collection and Conveyance Mains	(3,362,207)	-	(3,362,207)	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	**CWIP**	14,049,923	13,496	11,183,991	62,646	890,329	-	9,177	655,655	345,418	447,330	161,184	90,552	-	182,749	7,394	-	Appendix A-13
32	Subtotal Existing Plant	186,517,897	1,182,549	115,109,231	2,197,134	12,132,040	-	734,236	6,398,852	26,943,327	12,796,437	3,945,880	2,294,254	-	1,872,221	725,471	185,413	
	AMMONIA PROJECT																	
33	Secondary Expansion - Ammonia Project	41,359,833	-	-	-	-	-	-	6,597,717	1,176,462	25,176,094	1,263,884	7,145,676	-	-	-	-	
34	Ammonia Phase I	1,700,606	-	-	-	-	-	-	271,280	48,373	1,035,174	51,968	293,811	-	-	-	-	
35	Subtotal	43,060,439	-	-	-	-	-	-	6,868,998	1,224,835	26,211,267	1,315,851	7,439,487	-	-	-	-	
36	**TOTAL**	229,578,336	1,182,549	115,109,231	2,197,134	12,132,040	-	734,236	13,267,850	28,168,162	39,007,705	5,261,731	9,733,741	-	1,872,221	725,471	185,413	
37	Existing Plant	100.0%	0.7%	60.3%	1.2%	6.5%	0.0%	0.4%	3.3%	15.4%	7.2%	2.2%	1.3%	0.0%	1.0%	0.4%	0.1%	
38	Plant Including CWIP	100.0%	0.6%	61.7%	1.2%	6.5%	0.0%	0.4%	3.4%	14.4%	6.9%	2.1%	1.2%	0.0%	1.0%	0.4%	0.1%	
39	Existing Debt Service	11,515,000	73,059	7,106,464	135,644	748,992	-	45,329	395,044	1,663,392	790,010	243,606	141,640	-	115,585	44,788	11,447	Plant Including CWIP
40	Less: Misc Revenues	1,752,900	11,122	1,081,800	20,649	114,017	-	6,900	60,137	253,214	120,261	37,083	21,561	-	17,595	6,818	1,743	Plant Including CWIP
41	Transfer to Capital Fund	3,754,500	23,821	2,317,084	44,227	244,211	-	14,780	128,805	542,354	257,585	79,428	46,182	-	37,687	14,603	3,732	Plant Including CWIP
42	Proposed Debt	775,800	4,922	478,784	9,139	50,462	-	3,054	26,615	112,068	53,225	16,412	9,543	-	7,787	3,018	771	Plant Including CWIP
43	Net Capital for Rates	17,798,200	112,924	10,984,132	209,658	1,157,682	-	70,063	610,601	2,571,028	1,221,081	376,530	218,926	-	178,654	69,227	17,693	
44	Less: Debt Service for Ammonia Project	2,428,900							296,727	1,249,412	593,395	182,978	106,389					
45	Net Capital for Rates Less: Ammonia Project	15,369,300	112,924	10,984,132	209,658	1,157,682	-	70,063	313,875	1,321,616	627,687	193,552	112,537	-	178,654	69,227	17,693	

6.4 DISTRIBUTION OF COSTS TO CUSTOMER CLASSES

The total cost responsibility of customer classes is determined by the allocation of the costs of service for each cost component to customers based on the respective units of service of each class. Each class is assigned its proportionate share of the costs by function using projected units of service.

6.4.1 Customer Classification

For purposes of cost of service analysis and rate design, wastewater customers are classified to reflect groups of customers with similar service requirements. The classifications used by the City for record keeping purposes are satisfactory for this purpose. The customer classifications include residential, commercial, SSJISD, National Beef Leathers, and Triumph Foods. Costs are also allocated to BOD, suspended solids, ammonia, and FOG surcharges for commercial customers with wastewater strength that exceeds 300 mg/l for BOD, 350 mg/l for suspended solids, 30 mg/l for ammonia, and 100 mg/l for FOG.

6.4.2 Units of Service

Volume related costs vary with, and are allocated on, the basis of the volume of billable wastewater volume and infiltration and inflow conveyed by the wastewater system. Capacity related costs vary by customer class and the units are calculated by taking contributed flow multiplied by the capacity factor and then dividing by the number of days in the year. This provides the average day capacity units. Infiltration and inflow also has a capacity component as shown on Table 18 Column G. Strength costs are related to the function of reducing BOD, suspended solids, ammonia, and FOG concentrations and are allocated to customer classes in proportion to the respective strength loadings. Septage units are based on the gallons of waste received at the septage upload station. Billing costs are related to the number of bills sent to customers.

The estimated FY 2018 service requirements or units of service for the various customer classes are shown in Table 18. Estimates of annual billable wastewater volume and number of bills are based on the projection of the number of Sewer Utility customers and their estimated billable wastewater volume. Contributed wastewater volume shown for the residential class is based upon the average water usage billed during the winter period that serves as the basis for assessing charges.

Infiltration/inflow includes flow entering the wastewater system from groundwater infiltration through wastewater service pipe and main joints and inflow from manhole covers and the combined wastewater system. Infiltration/inflow is estimated to total approximately 66 percent of the total wastewater flow reaching the primary treatment plant on an annual basis.

Each customer class, with the exception of the secondary wholesale customers whose flows are measured at the treatment plant, should bear its proportionate share of the costs associated with infiltration/inflow. 60 percent of infiltration/inflow is allocated to customer classes in proportion to the number of individual customers and 40 percent is allocated in proportion to customer class contributed volume. Table 18 shows the results of the allocations.

The BOD, suspended solids, ammonia, and FOG responsibility of each retail customer class is based on the estimated average strength concentrations and contributed wastewater volume for each class. The average strength for contributed wastewater flow is estimated to be 251 mg/l for BOD, 472 mg/l for suspended solids, 31 mg/l for ammonia, and 41 mg/l for FOG. Infiltration/inflow is

estimated to have a BOD strength of 75 mg/l, suspended solids strength of 220 mg/l, ammonia strength of 5 mg/l, and FOG strength of 8 mg/l.

The estimates of suspended solids, ammonia, and BOD strengths in excess of normal limits are assigned to the surcharge customer classification, and are shown separately in Table 18. The estimates are based on extra strength data maintained by the Sewer Utility and utilized for current average billings.

Estimates of the strength related loadings on the secondary treatment plant (common to all) are based on the strength of the effluent from the primary treatment plant and the strength of the flows from the secondary wholesale customers.

In an effort to mitigate the impact of the decrease in loadings at the secondary plant primarily due to the closing of the Monfort Plant in November 1993, a Secondary Service Minimum (SSM) class was added to the cost allocation procedures by means of contracts between the City and SSJISD. Contract provisions provide that wholesale rates shall be established using a minimum flow of 1,725,000 hundred cubic feet of flow, 6,800,000 pounds of BOD, and 3,250,000 pounds of suspended solids. By City policy, the costs associated with the Secondary Service Minimum class are recovered in the retail volume charge; therefore lessening the impact to the wholesale customers.

As part of updating the cost of service allocations in FY 2015, the City began phasing out the SSM. This will be accomplished by reducing the subsidy units, minimum flow of 1,725,000 hundred cubic feet of flow, 6,800,000 pounds of BOD, and 3,250,000 pounds, by 20 percent each year until the units are completely removed. This means that for FY 2018 only 20 percent of the units will be available to reduce the impact to the wholesale customer. The full units are shown on Table 18 Line 9 and the adjusted units are shown on Table 19 Line 9.

Table 18 Retail and Wholesale Units of Service

Line No.		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[K]	[L]	[M]	[O]	[P]
		Assignable Volume			Capacity			Common to Retail			Common to All			Retail	Retail
		Contributed Volume	Infiltration/ Inflow	Total	Contributed	Infiltration/ Inflow	Total	BOD	SS	FOG	BOD	SS	Ammonia	Customers	Bills
		Ccf	Ccf	Ccf	Ccf/Day	Ccf/Day	Ccf/Day	lbs	lbs	lbs	lbs	lbs	lbs		
	Retail														
1	Residential	1,187,100	4,062,500	5,249,600	4,900	44,500	49,400	3,760,600	9,073,300	506,500	2,632,400	3,629,300	356,400	23,553	282,636
2	Commercial/Industrial	1,679,500	1,616,900	3,296,400	6,900	17,700	24,600	3,387,200	7,166,300	510,400	2,371,000	2,866,500	375,300	2,157	25,884
3	Surcharge							2,913,200	9,100	35,600	2,039,200	3,600	0		
4	Septic							107,400	214,800	1,200	75,200	85,900	0		
5	Subtotal	2,866,600	5,679,400	8,546,000	11,800	62,200	74,000	10,168,400	16,463,500	1,053,700	7,117,800	6,585,300	731,700	25,710	308,520
	Wholesale														
6	SSJISD			934,010	6,400	0	6,400				2,294,059	754,571	226,411		
7	National Beef Leathers			421,952	1,700	0	1,700				47,921	200,511	723,000		
8	Triumph Foods			986,900	4,100	0	4,100				1,457,100	1,227,300	1,116,300		
9	Secondary Service Minimum (a)			0							3,000,921	1,067,619	0		
10	Subtotal	0	0	2,342,862	12,200	0	12,200	0	0	0	6,800,000	3,250,000	2,065,711	0	0
11	Total	2,866,600	5,679,400	10,888,862	24,000	62,200	86,200	10,168,400	16,463,500	1,053,700	13,917,800	9,835,300	2,797,411	25,710	308,520

(a) Per agreements with SSJISD, the total flow, BOD loading, and suspended solids loading for Secondary Service for cost allocation purposed is to be at least 1,725,000 Ccf, 6,800,000 pounds of BOD, and 3,250,000 pounds of Suspended Solids.

6.4.3 Customer Class Costs of Service

Costs of service are allocated to the customer classes by application of unit costs of service to respective service requirements. The unit costs are developed by dividing the total cost allocated to each functional cost component by the total applicable units of service. The customer class cost of service is obtained by applying the unit costs of service to the number of units for which the customer class is responsible. Table 19 shows the development of the unit costs of service for each functional cost component, and Table 20 shows the subsequent application of unit costs to the respective service requirements of each customer class. By City policy, the cost of service for retail customers is adjusted in Column P to reflect the Secondary Service Minimum class cost of service.

Table 19 Unit Cost of Service

For Fiscal Year Ending June 30, 2018

Line No.	Description	[A] Common to Retail Volume	[B] Common to Retail Capacity	[C] Common to Retail BOD	[D] Common to Retail Suspended Solids	[E] Common to Retail FOG	[F] Common to All Volume	[G] Common to All Capacity	[H] Common to All BOD	[I] Common to All Suspended Solids	[J] Common to All Ammonia	[K] SSJISD Pump Station	[L] Septage	[M] Billing	[N] Ammonia Debt Service	[O] Total
	Units of Service															
	Units	Ccf	Ccf/Day	lbs	lbs	lbs	Ccf	Ccf/Day	lbs	lbs	lbs	Ccf	Mgal.	Bills		
	Retail															
1	Residential	5,249,600	49,400	3,760,600	9,073,300	506,500	5,249,600	49,400	2,632,400	3,629,300	356,400			282,636		
2	Commercial/Industrial	3,296,400	24,600	3,387,200	7,166,300	510,400	3,296,400	24,600	2,371,000	2,866,500	375,300			25,884		
3	Surcharge			2,913,200	9,100	35,600			2,039,200	3,600	0					
4	Septage			107,400	214,800	1,200			75,200	85,900	0		1,980			
5	Wholesale															
6	SSJISD						934,010	6,400	2,294,059	754,571	226,411	934,010				
7	National Beef Leathers						421,952	1,700	47,921	200,511	723,000					
8	Triumph Foods						986,900	4,100	1,457,100	1,227,300	1,116,300					
9	Secondary Service Minimum (reduced by 80%)						0		600,184	213,524						
10	Total	8,546,000	74,000	10,168,400	16,463,500	1,053,700	10,888,862	86,200	11,517,064	8,981,205	2,797,411	934,010	1,980	308,520		
	Functional Cost Allocations															
11	Net Operation, Maint. & Replacement - $	2,272,100	3,770,400	412,000	708,300	231,700	810,900	888,900	2,538,600	831,900	181,000	188,200	23,700	1,465,300		14,323,000
12	Net Capital- $	112,924	10,984,132	209,658	1,157,682	70,063	313,875	1,321,616	627,687	193,552	112,537	178,654	69,227	17,693	2,428,900	17,798,200
13	Total Cost of Service - $	2,385,024	14,754,532	621,658	1,865,982	301,763	1,124,775	2,210,516	3,166,287	1,025,452	293,537	366,854	92,927	1,482,993	2,428,900	32,121,200
14	Total Annual Units	8,546,000	74,000	10,168,400	16,463,500	1,053,700	10,888,862	86,200	11,517,064	8,981,205	2,797,411	934,010	1,980	308,520		
15	Op, Maint & Replace. Unit Cost (a) - $/Unit	0.2659	50.9514	0.0405	0.0430	0.2199	0.0745	10.3121	0.2204	0.0926	0.0647	0.2015	11.9683	4.7494		
16	Capital Unit Cost (a) - $/Unit	0.0132	148.4342	0.0206	0.0703	0.0665	0.0288	15.3320	0.0545	0.0216	0.0402	0.1913	34.9592	0.0573		
17	Total Unit Cost (a)- $/Unit	0.2791	199.3856	0.0611	0.1133	0.2864	0.1033	25.6440	0.2749	0.1142	0.1049	0.3928	46.9275	4.8068		

(a) Unit costs are dollars per one hundred cubic feet ($/Ccf) for volume and dollars per pound ($/lb) for BOD, suspended solids, ammonia, and FOG.

Table 20 Customer Class Allocated Cost of Service

For Fiscal Year Ending June 30, 2018

Line No.	Description	[A] Common to Retail: Volume	[B] Common to Retail: Capacity	[C] Common to Retail: BOD	[D] Common to Retail: Suspended Solids	[E] Common to Retail: FOG	[F] Common to All: Volume	[G] Common to All: Capacity	[H] Common to All: BOD	[I] Common to All: Suspended Solids	[J] Common to All: Ammonia	[K] SSJISD Pump Station	[L] Septage	[M] Billing	[N] Ammonia Debt Service	[O] Total	[P] Adjusted Retail Cost of Service
	Allocated Cost of Service																
	Residential																
1	Operation, Maint. & Replacement - $	1,395,696	2,516,997	152,371	390,356	111,375	390,942	509,416	580,236	336,170	23,060			1,342,365		7,748,984	
2	Capital - $	69,367	7,332,650	77,538	638,017	33,679	151,321	757,399	143,467	78,214	14,338			16,208	898,071	10,210,269	
3	Residential Subtotal - $	1,465,063	9,849,647	229,909	1,028,373	145,054	542,263	1,266,815	723,703	414,384	37,398			1,358,573	898,071	17,959,253	18,037,679
	Commercial/Industrial																
4	Operation, Maint. & Replacement - $	876,404	1,253,403	137,241	308,311	112,233	245,486	253,677	522,618	265,515	24,283			122,935		4,122,106	
5	Capital - $	43,558	3,651,482	69,839	503,921	33,938	95,020	377,166	129,221	61,775	15,098			1,484	563,929	5,546,431	
6	Commercial Monthly Subtotal - $	919,962	4,904,885	207,080	812,232	146,171	340,506	630,843	651,839	327,290	39,381			124,419	563,929	9,668,537	9,779,494
	Surcharge																
7	Operation, Maint. & Replacement - $	0	0	118,036	392	7,828	0	0	449,482	333	0			0		576,071	
8	Capital - $	0	0	60,066	640	2,367	0	0	111,138	78	0			0		174,289	
9	Surcharge Subtotal - $	0	0	178,102	1,032	10,195	0	0	560,620	411	0			0		750,360	750,360
	Septage																
10	Operation, Maint. & Replacement - $	0	0	4,352	9,241	264	0	0	16,576	7,957	0		23,700	0		62,090	
11	Capital - $	0	0	2,214	15,104	80	0	0	4,098	1,851	0		69,227	0		92,574	
12	Septage Subtotal - $	0	0	6,566	24,345	344	0	0	20,674	9,808	0		92,927	0		154,664	154,664
	Secondary Service Minimum (a)																
13	Operation, Maint. & Replacement - $	0	0	0	0	0	0	0	132,293	19,778	0		0	0		152,071	
14	Capital - $	0	0	0	0	0	0	0	32,710	4,602	0		0	0		37,312	
	Subtotal Secondary Service Minimum - $	0	0	0	0	0	0		165,003	24,380	0		0	0		189,383	0
15	Subtotal Retail - $	2,385,025	14,754,532	621,657	1,865,982	301,764	882,769	1,897,658	2,121,839	776,273	76,779		92,927	1,482,992	1,462,000	28,722,197	28,722,197
	South St. Joseph Industrial Sewer District																
16	Operation, Maint. & Replacement - $						69,556	65,997	505,658	69,893	14,649	188,200		0		913,953	
17	Capital - $						26,923	98,125	125,028	16,262	9,108	178,654		0	485,900	940,000	
18	SSJISD Subtotal - $						96,479	164,122	630,686	86,155	23,757	366,854		0	485,900	1,853,953	1,853,953
	National Beef Leathers																
19	Operation, Maint. & Replacement - $						31,423	17,531	10,563	18,573	46,780	0		0		124,870	
20	Capital - $						12,163	26,064	2,612	4,321	29,086	0		0	160,900	235,146	
21	National Beef Leathers Subtotal						43,586	43,595	13,175	22,894	75,866	0		0	160,900	360,016	360,016
	Triumph Foods																
22	Operation, Maint. & Replacement - $						73,495	42,279	321,175	113,681	72,228	0		0		622,858	
23	Capital - $						28,448	62,861	79,413	26,449	44,908	0		0	320,100	562,179	
24	Triumph Foods Subtotal						101,943	105,140	400,588	140,130	117,136	0		0	320,100	1,185,037	1,185,037
25	Total	2,385,025	14,754,532	621,657	1,865,982	301,764	1,124,777	2,210,515	3,166,288	1,025,452	293,538	366,854	92,927	1,482,992	2,428,900	32,121,203	32,121,203

(a) Per agreement with SSJISD cost allocations are based on minimum units of service from Secondary Service customers. Secondary Service Minimum is allocated costs for the units of service required to meet the minimum amount. Secondary Service Minimum allocated costs are recovered from Retail Service customers.

A comparison of projected revenue under existing rates and allocated cost of service are shown in Table 21. This table provides guidance to the rate design phase to show what class increase could be justified. The indicated revenue changes required to meet costs of service are shown for each customer class. The indicated changes in retail rates range from negative 19.8 percent to 16.4 percent. The average indicated increase for retail customers is 11.1 percent. The indicated rate change for wholesale customers is an increase of 5.6 percent for South St. Joseph Industrial Sewer District, an increase of 36.2 percent for National Beef Leathers, and an increase of 10.7 percent for Triumph Foods. The overall adjustment indicated for wholesale customers is an increase of 10.0 percent. It is important to note that these increases are indicated rate increases based on cost of service results and not actual. Please use Table 24 for these purposes.

Table 21 Comparison of Revenue Under Existing Rates with Allocated Cost of Service

For Fiscal Year Ending June 30, 2018

Line No.	Customer Class	Revenue Under Existing Rates	Allocated Cost of Service	Adjusted Allocated Cost of Service	Indicated Percent Change
		$	$	$	%
	Retail				
1	Residential	15,499,100	17,959,253	18,037,679	16.4
2	Commercial/Industrial	9,273,900	9,668,537	9,779,494	5.5
3	Surcharge	935,700	750,360	750,360	(19.8)
4	Septage	138,600	154,664	154,664	11.6
5	Secondary Service Minimum		189,383		
6	Total Retail	25,847,300	28,722,197	28,722,197	11.1
	Secondary Wholesale Treatment				
7	South St. Joseph Industrial Sewer Di	1,756,200	1,853,953	1,853,953	5.6
8	National Beef Leathers	264,400	360,016	360,016	36.2
9	Triumph Foods	1,070,100	1,185,037	1,185,037	10.7
10	Total Secondary Wholesale	3,090,700	3,399,006	3,399,006	10.0
11	Total	28,938,000	32,121,203	32,121,203	11.0

7 Wastewater Rate Adjustments

The revenue requirements studies described in the preceding sections of this report provide a basis for the design of wastewater rates. It should be recognized, however, that these studies are the result of engineering estimates, based on historical data and, to some extent, upon judgment and experience. Detailed results should not be used as literal and exact answers, but as guides for rate adjustments. Judgment and City policy must enter into the final choice of rates, and consideration must be given to factors such as previous rate levels, existing contractual requirements, and past local practice.

7.1 PROPOSED WASTEWATER RATES

Table 22 presents the proposed wastewater rate schedule recommended to be fully effective July 1, 2017. The proposed rates provide for an 11.0 percent overall revenue increase once the rates are in effect.

7.2 LIMIT FEES

Limit fees started in FY 2016 and are applicable to SIUs in the retail and wholesale classes. The limit fees are applicable to wholesale customers and any retail SIUs with a permit and the limit fees will be applicable to both volume and strength limits.

The retail class will continue with the same procedure of extra strength surcharges over a certain strength limit as it has been in the past. Retail SIUs will also have a limit fee in addition to normal surcharge billings if the daily maximum limits in its permit are exceeded. These two types of fees serve two different purposes. Extra strength surcharges are used to recover the cost of removing pollutants from wastewater in an equitable manner relative to the each customer's contribution. The limit fees for exceeding the daily permit limit are to provide a financial incentive to enforce the permit and protect the biological treatment process from washing out.

Limit Fees are applied to SIU customers when the daily maximum, as defined in each customer's permit, for Volume, BOD, TSS, and ammonia are exceeded for any given day. The limit fee would be applied to everything exceeding the daily maximum limit in each SIU customer's permit. All contributed volume and strength would be billed at normal rates up to the daily limit and the limit fee would be applied on the incremental flow and pollutants above that amount. This revenue is not part of the cost of service and will be above and beyond what is assumed for revenue estimates. These rates are based on cost of service rates multiplied by a factor of 1.5. The limit fees for Retail SIU customers are adjusted so they are only paying 1.5 times the contributed portion of the volume charge. The portion of the rate associated with I/I is based on a system calculation that is not entirely in their control, therefore it is removed from the limit fee calculation.

A sample calculation for a day with an overage for a wholesale customer is as follows. Based on a daily charge using the proposed rates in Table 22, if the limit was 600 lbs. per day and the actual discharge was 850 lbs. BOD, would be (600 lbs. x $0.275/lb.) + [(850-600) lbs. x $0.413/lb.].

Table 22 Schedule of Proposed Rates

for Fiscal Year Ending June 30, 2018

RETAIL

	Monthly Charge $				
Service Charge					
Inside City	37.69				
Outside City	88.45				
				Limit	
Volume Charge	Monthly $/Ccf			Fees	
Inside City	5.57			1.96	$/Ccf
Outside City	12.73			4.48	$/Ccf
		Inside	Outside		
Extra Strength Surcharge		City	City		
BOD in excess of 300 mg/l		0.254	0.377	$/lb	0.381 $/lb.
Suspended solids in excess of 350 mg/l		0.196	0.465	$/lb	0.239 $/lb.
Ammonia in excess of 30 mg/l		0.105	0.249	$/lb	0.158 $/lb.
Fats, Oils, & Grease in Excess of 100 mg/l		0.286	0.657	$/lb	
Septage		79.00	79.00	$/Kgal	

WHOLESALE (a)				
Ammonia Project Fixed Charge				
South St. Joseph Industrial Sewer District	40,490	$/Month		
National Beef Leathers	13,410	$/Month		
Triumph Foods	26,680	$/Month		
Flow charge				
South St. Joseph Industrial Sewer District	0.279	$/Ccf	0.419	$/Ccf
National Beef Leathers	0.207	$/Ccf	0.310	$/Ccf
Triumph Foods	0.210	$/Ccf	0.315	$/Ccf
Pump Station (b)	0.393	$/Ccf		
BOD	0.275	$/lb.	0.413	$/lb.
Suspended Solids	0.114	$/lb.	0.171	$/lb.
Ammonia	0.105	$/lb.	0.158	$/lb.
Fats, Oils, & Grease	0.286	$/lb.	0.000	$/lb.

(a) Applicable to the South St. Joseph Industrial Sewer District (SSJISD), National Beef Leathers, and Triumph for secondary treatment service.

(b) Applicable to SSJISD only.

7.3 AMMONIA PROJECT FIXED CHARGE

The rates in Table 22 have a fixed charge for wholesale customers to recover their share of the debt service related to the Ammonia Removal project, as shown in Table 23, Line 4. The driver for this is if a customer significantly reduces its ammonia loadings, due to changes in onsite treatment, they will still be responsible for the fixed cost of the treatment process that was designed for them. This allocation will be updated every five years, or if a SIU joins the system. Table 23 provides the basis for how the charge is structured. The first step in developing the fixed charge was to functionalize the individual components of the Ammonia project based on their designed function, with the results shown on Line 3. The units on Lines 5-8 form the allocations in Lines 13-16. Then the debt

service charge on Line 4 is multiplied by each allocation to form the totals in Line 13-16. These costs are totaled in Column A Line 17. The wholesale amounts are then divided by twelve to create a monthly bill and the retail amount is divided by the contributed flows. The reason flows are used for the retail calculation is there is no customer with higher than normal strength flows. Therefore, flows are the main determinant of each customer's contribution to the system and not the number of connections.

The debt service is estimated each year until the project is complete. Once construction is complete, the payment will be based on the loan amortization schedule.

Table 23 Development of Ammonia Project Fixed Charge for Wholesale

Line No.	Description		[A] Total	[B] Volume	[C] Capacity	[D] BOD	[E] Suspended Solids	[F] Ammonia
	Ammonia Project Capital Costs							
1	Existing Plant		$ 41,359,833	$ 6,597,717	$ 1,176,462	$ 25,176,094	$ 1,263,884	$ 7,145,676
2	CIP		$ 1,700,606	$ 271,280	$ 48,373	$ 1,035,174	$ 51,968	$ 293,811
3	Total		$ 43,060,439	$ 6,868,998	$ 1,224,835	$ 26,211,267	$ 1,315,851	$ 7,439,487
4	Debt Service Applicable to Ammonia Project		$ 2,428,900	$ 387,500	$ 69,100	$ 1,478,500	$ 74,200	$ 419,600
	Units for Plant Design			Ccf	Ccf/Day	lbs	lbs	lbs
5	Retail			7,612,000	61,600	6,376,700	3,651,200	946,000
6	South St Joseph			975,936	6,700	2,555,000	1,095,000	375,950
7	Triumph			1,219,920	5,000	1,095,000	657,000	693,500
8	National Beef			487,968	2,000	73,000	219,000	876,000
	Allocation to Customer Classes							
9	Retail	= Line 5 / Total Units for Plant		73.9%	81.8%	63.1%	64.9%	32.7%
10	South St Joseph	= Line 6 / Total Units for Plant		9.5%	8.9%	25.3%	19.5%	13.0%
11	Triumph	= Line 7 / Total Units for Plant		11.8%	6.6%	10.8%	11.7%	24.0%
12	National Beef	= Line 8 / Total Units for Plant		4.7%	2.7%	0.7%	3.9%	30.3%
	Allocated Ammonia Capital Costs to Customer Classes							
13	Retail	= Line 4 x Line 9	$ 1,462,000	$ 286,500	$ 56,600	$ 933,500	$ 48,100	$ 137,300
14	South St Joseph	= Line 4 x Line 10	$ 485,900	$ 36,700	$ 6,100	$ 374,000	$ 14,500	$ 54,600
15	Triumph	= Line 4 x Line 11	$ 320,100	$ 45,900	$ 4,600	$ 160,300	$ 8,700	$ 100,600
16	National Beef	= Line 4 x Line 12	$ 160,900	$ 18,400	$ 1,800	$ 10,700	$ 2,900	$ 127,100
17	Total Applicable to Ammonia Project		$ 2,428,900	$ 387,500	$ 69,100	$ 1,478,500	$ 74,200	$ 419,600

		Costs	Units		Charge	
18	Retail	$ 1,462,000	2,866,600	Ccf	$ 0.51	$/Ccf
19	South St Joseph	$ 485,900	12	Bills	$ 40,490	$/Bill
20	Triumph	$ 320,100	12	Bills	$ 26,680	$/Bill
21	National Beef	$ 160,900	12	Bills	$ 13,410	$/Bill
22	Total	$ 2,428,900				

Presented in Table 24 is a comparison of adjusted allocated cost of service with revenue under proposed rates. The proposed retail rates are projected to recover 100.0 percent of the cost of service and results in an average increase over existing rates of 11.1 percent. The proposed wholesale rates are projected to recover 100.0 percent of the cost of service and results in an average increase over existing rates of 10.0 percent.

Table 24 Comparison of Cost of Service With Revenue Under Proposed Rates

for Fiscal Year Ending June 30, 2018

Line No.	Customer Class	[A] Allocated Cost of Service	[B] Revenue Under Estimated Rates	[C] Revenue as Percent of Adjusted Cost of Service	[D] Revenue Inc/(Dec) Compared to Existing Rates
		$	$	%	%
	Retail				
1	Residential	18,037,679	17,430,500	96.6	12.5
2	Commercial/Industrial	9,779,494	10,385,200	106.2	12.0
3	Surcharge	750,360	751,900	100.2	(19.6)
4	Septage	154,664	156,400	101.1	12.8
5	Total Retail	28,722,197	28,724,000	100.0	11.1
	Secondary Wholesale Treatment				
6	South St. Joseph Industrial Sewer District	1,853,953	1,854,200	100.0	5.6
7	National Beef Leathers	360,016	360,200	100.1	36.2
8	Triumph Foods	1,185,037	1,185,200	100.0	10.8
9	Total Secondary Wholesale Treatment	3,399,006	3,399,600	100.0	10.0
10	Total	32,121,203	32,123,600	100.0	11.0

7.4 COMPARISON OF TYPICAL CUSTOMER BILLS

A comparison of typical bills for various quantities of billable wastewater volume under the proposed schedule of wastewater rates with those under existing rates is shown in Table 25. The resulting increase in the typical bills is also indicated. The average residential user contributes approximately 4 Ccf per month, or approximately 3,000 gallons. At this level, a customer's monthly bill would increase by $6.65 to $59.97 ($0.02 per gallon).

Table 25 Typical Retail Sewer Bills Under Existing and Proposed Rates

Monthly Billed Sewer Volume	Inside City			Outside City		
	Existing Rates	Estimated Rates	Increase	Existing Rates	Estimated Rates	Increase
Ccf	$	$	%	$	$	%
0	33.40	37.69	12.8	78.38	88.45	12.8
2	43.36	48.83	12.6	101.14	113.90	12.6
4	53.32	59.97	12.5	123.90	139.36	12.5
6	63.28	71.11	12.4	146.66	164.82	12.4
10	83.20	93.39	12.2	192.18	215.73	12.3
30	182.80	204.79	12.0	419.78	470.29	12.0
50	282.40	316.19	12.0	647.38	724.86	12.0
75	406.90	455.44	11.9	931.88	1,043.06	11.9
100	531.40	594.69	11.9	1,216.38	1,361.27	11.9
150	780.40	873.19	11.9	1,785.38	1,997.68	11.9
200	1,029.40	1,151.69	11.9	2,354.38	2,634.09	11.9
500	2,523.40	2,822.69	11.9	5,768.38	6,452.56	11.9
1,000	5,013.40	5,607.69	11.9	11,458.38	12,816.68	11.9

Appendix A - Detailed Allocation to Cost Components

Updated for

Fiscal Year 2018

Revised O&M and Plant Allocators

For Fiscal Year 2018

Appendix A-1 Sludge Handling Cost Allocation Factors

Primary Sludge	Secondary Sludge	Total
pounds	pounds	pounds
9,815,099	18,609,833	28,424,932
34%	66%	100%

Description	Common to Retail				Common to All			
	Volume	BOD	Suspended Solids	FOG	Volume	BOD	Suspended Solids	Ammonia
Sludge Handling (a)		10.3%	20.2%	3.5%		39.2%	18.4%	8.4%

(a) Assume Primary Treatment related sludge is 34 percent of the total sludge processed and allocate 10 percent to Primary Treatment related BOD and 20 percent to Primary Treatment related Suspended Solids. Allocate the remaining 66 percent, 39 percent to Secondary Treatment related BOD and 18 percent to Secondary Treatment related Suspended Solids.

Appendix A-2 Secondary Operations Allocation Factors

Secondary Cost Components	EPA Manual Estimated Hours (a)	Common to Retail					Common to All				
		Volume	Capacity	BOD	Suspended Solids	FOG	Volume	Capacity	BOD	Suspended Solids	Ammonia
Aeration	2,700								2,700		
Secondary Clarifiers	3,000						3,000				
Trickling Filters	5,000								5,000		
Sludge Digestion	5,000								1,960	2,620	420
Total	15,700	0	0	0	0	0	3,000	0	9,660	2,620	420
Percentage	100%	0.0%	0.0%	0.0%	0.0%	0.0%	19.1%	0.0%	61.5%	16.7%	2.7%

(a) "Estimating Cost and Manpower Requirements for Conventional Wastewater Treatment Facilities", Office of Research and Monitoring-Environmental Protection Agency, 1971.

Appendix A-3 Wastewater Treatment Plant Vehicle Allocation Factors

Description	Total	Common to Retail					Common to All					SSJISD Pump Station
		Volume	Capacity	BOD	Suspended Solids	FOG	Volume	Capacity	BOD	Suspended Solids	Ammonia	
Sludge Related (a)	70.00%			7.21%	14.14%	2.45%			27.44%	12.88%	5.88%	
Other (b)	30.00%	9.50%	5.39%	0.54%	1.16%	0.18%	2.76%	2.86%	4.68%	1.52%	0.48%	0.93%
Total	100.00%	9.50%	5.39%	7.75%	15.30%	2.63%	2.76%	2.86%	32.12%	14.40%	6.36%	0.93%
Total (Rounded)	100%	9.5%	5.4%	7.7%	15.3%	2.6%	2.8%	2.9%	32.1%	14.4%	6.4%	0.9%

(a) Allocation based on Sludge Handling Cost allocation Factors, Appendix A-1.
(b) Allocation based on Wastewater Treatment Plant and Lift Station Personnel Expense Allocation Factors, excluding Vehicles, Appendix A-4.

Appendix A-4 Wastewater Treatment Plant and Personnel Expense

Activity	Percentage Dist (a)	Common to Retail					Common to All					SSJISD Pump Station
		Volume	Capacity	BOD	Suspended Solids	FOG	Volume	Capacity	BOD	Suspended Solids	Ammonia	
	%	%	%	%	%	%	%	%	%	%	%	%
Primary Operations	12%	12.4%										
Secondary Operations (b)	12%						2.0%		7.0%	2.0%	0.0%	
Sludge - Belt Press (c)	5%			0.5%	1.0%	0.2%			1.9%	0.9%	0.4%	
Sludge - Haul & Spread (c)	5%			0.5%	1.1%	0.2%			2.1%	1.0%	0.4%	
Equipment Maintenance (d)												
Primary Operations	22%	17.5%	1.7%	0.7%	1.7%	0.2%						
Secondary Operations	22%						6.9%	9.2%	4.0%	1.0%	0.7%	
Pump Station (e)	19%		15.6%									3.0%
Vehicle Maintenance (f)	4%	0.3%	0.2%	0.3%	0.5%	0.1%	0.1%	0.1%	1.2%	0.5%	0.2%	0.0%
Total	100%	30.3%	17.5%	2.0%	4.3%	0.7%	9.0%	9.3%	16.2%	5.4%	1.8%	3.0%
Percentage Distribution												
Wastewater Treatment Plant & L.S.	100.00%	30.80%	17.50%	2.00%	4.30%	0.70%	9.00%	9.30%	16.20%	5.40%	1.80%	3.00%
Wastewater Treatment Plant Only	100.00%	38.80%	2.20%	2.20%	4.80%	0.80%	11.50%	11.90%	19.50%	6.30%	2.00%	
Vehicles	100.00%	18.50%	5.40%	7.70%	15.30%		2.80%	2.90%	32.10%	14.40%		0.90%

(a) Percentage distribution based on analysis of functional duties and salary budget
(b) Allocation based on Secondary Operation Allocation Factors, Appendix A-2.
(c) Allocation based on Sludge Handling Cost Allocation Factors, Appendix A-1.
(d) Allocation based on Wastewater Treatment
(e) Allocation based on SSJISD pump station fixed assets as a percent of total pump station fixed assets.
(f) Allocation based on Vehicle Allocation Factors, Appendix A-3.

Appendix A-5 Power Cost Allocation Factors

Location	Power Costs (a)	Common to Retail					Common to All					SSJISD Pump Station
		Volume	Capacity	BOD	Suspended Solids	FOG	Volume	Capacity	BOD	Suspended Solids	Ammonia	
	$	$	$	$	$	$	$	$	$	$	$	$
Substation 1- Intermed. P.S.	252,207	168,979	0	0	0	0	83,228	0	0	0	0	0
Substation 2- Blower Bldg.	441,648	0	0	0	0	0	0	0	441,648	0	0	0
Substation 3- Util. Water P.S.	44,465	44,465	0	0	0	0	0	0	0	0	0	0
Substation 4- Control Bldg.	284,028	0	0	29,255	57,374	9,941	0	0	111,339	52,261	23,858	0
Ammonia Project	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,022,348	213,443	0	29,255	57,374	9,941	83,228	0	552,987	52,261	23,858	0
Lift Stations	534,377	493,521	0	0	0	0	0	0	0	0	0	40,857
Total	1,556,725	706,964	0	29,255	57,374	9,941	83,228	0	552,987	52,261	23,858	40,857
Percentage Distribution	100.00%	45.50%	0.00%	1.90%	3.70%	0.60%	5.30%	0.00%	35.50%	3.40%	1.50%	2.60%

(a) Wastewater Treatment electricity cost for fiscal year 2015.

Appendix A-6 Laboratory Allocation Factors

Description	Total	Common to Retail					Common to All					SSJISD Pump Station
		Volume	Capacity	BOD	Suspended Solids	FOG	Volume	Capacity	BOD	Suspended Solids	Ammonia	
Secondary Treatment Plant (a)	50.00%						16.67%		16.67%	16.66%	0.00%	
Other Laboratory Expense (b)	50.00%	12.50%		12.50%	12.50%	12.50%						
Total Laboratory	100.00%	12.50%	0.00%	12.50%	12.50%	12.50%	16.67%	0.00%	16.67%	16.66%	0.00%	0.00%
Total Laboratory (Rounded)	100%	12.5%	0.0%	12.5%	12.5%	12.5%	16.7%	0.0%	16.7%	16.6%	0.0%	0.0%

(a) Allocate equally to each Secondary cost component.
(b) Allocate equally to each Primary cost component.

Appendix A-7 O&M Details

Line No	Description	[A] FY 2018	[B] Used in Appendix A-8
	Wastewater Treatment Plant (a)		
1	Personnel Related	2,789,200	Line 1
	Materials & Supplies		
2	Wastewater Treatment	438,600	Line 2
3	Motor Fuel & Lubricants	100,000	Line 3
4	Other	729,100	Line 4
5	Subtotal Mat. & Supplies	1,267,700	
	Outside Services		
6	Gas Service	165,000	Line 5
7	Electric Service	1,556,700	Line 6
8	M&R Buildings/Facilities	960,000	Line 8
9	M&R Machinery & Equip.	12,500	Line 8
10	M&R Motor Vehicles	50,000	Line 8
11	Other	166,000	Line 8
12	Subtotal	2,910,200	
13	Transfer to Aviation	48,300	Line 7
14	Capital Outlay	1,055,700	Line 8
15	Total Wastewater Treatment	8,071,100	
16	Laboratory	721,600	Line 9
17	Subtotal	8,792,700	
18	Wastewater Plant Admin.	2,176,000	Line 10
19	Sewer Maintenance (b)	2,351,300	Line 11
20	Transfer to General (c)	1,995,500	Line 12
21	Subtotal	6,522,800	
22	Total Revenue Requirement	15,315,500	

(a) Including Lift Stations.
(b) Includes Street & Sewer Maintanance, Sewer Rehabilitation, Trunk Sewer Development,
(c) Including Legal Services.

Appendix A-8 O&M Functional Cost Allocation

Line No.	Description	[A] Total	[B] Primary	[C] Secondary	[D] Sludge	[E] Pumping	[F] Vehicles	[G] Gas	[H] Power	[I] Chemicals	[J] Laboratory	[K] Gen. Treatment	[L] Treatment - Repair & Replace	[M] Sewer Maintenance	[N] General WW	[O] Billing
	WW Treatment															
1	Personnel	2,789,200	34.20%	33.37%	10.19%	18.65%	3.59%									
2	Chemicals	438,600								100.00%						
3	Motor Fuel & Lubricants	100,000								100.00%						
4	Other Materials and Supplies	729,100										100.00%				
5	Gas Service	165,000						100.00%								
6	Electric Service	1,556,700							100.00%							
7	Transfer to Aviation	48,300			100.00%											
8	Routine Repair and Replacement	2,244,200											100.00%			
9	Laboratory	721,600									100.00%					
10	Admin. & General	2,176,000										28.00%				72.00%
11	Sewer Maintenance	2,351,300												100.00%		
12	Transfer to General Fund	1,995,500													100.00%	
13	Total Wastewater O&M	15,315,500	953,898	930,844	332,409	520,135	100,213	165,000	1,556,700	538,600	721,600	1,338,274	2,244,200	2,351,300	1,995,500	1,566,826

Appendix A-9 O&M Cost Allocation Factors

Line No.	Description	[A] Total	[B] Common to Retail: Volume	[C] Common to Retail: Capacity	[D] Common to Retail: BOD	[E] Common to Retail: TSS	[F] Common to Retail: Ammonia	[G] Common to Retail: FOG	[H] Common to All: Volume	[I] Common to All: Capacity	[J] Common to All: BOD	[K] Common to All: TSS	[L] Common to All: Ammonia	[M] Common to All: FOG	[N] SSJISD	[O] Septage	[P] Billing	[Q] Basis of Allocation
1	Primary Treatment	100.00%	90.0%		3.0%	6.0%		1.0%										90% Primary Volume and Sludge Based on Appendix A-1 (Primary Only)
2	Secondary Treatment	100.00%							19.1%	0.0%	61.5%	16.7%	2.7%					Appendix A-2
3	Sludge	100.00%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
4	Pumping	100.00%		81.6%											18.4%			Based on Fixed Assets
5	Vehicles	100.00%	9.5%	5.4%	7.7%	15.3%		2.6%	2.8%	2.9%	32.1%	14.4%	6.4%		0.9%			Appendix A-3
6	Gas	100.00%	44.0%						56.0%									Average Day Primary & Secondary
7	Electric Service	100.00%	45.5%	0.0%	1.9%	3.7%		0.6%	5.3%	0.0%	35.5%	3.4%	1.5%		2.6%			Appendix A-5
8	Chemicals	100.00%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
9	Laboratory	100.00%	12.5%	0.0%	12.5%	12.5%		12.5%	16.7%	0.0%	16.7%	16.6%	0.0%		0.0%			Appendix A-6
10	General Treatment	100.00%	23.4%	10.5%	5.3%	8.3%	0.0%	3.2%	7.3%	0.1%	26.0%	11.0%	2.6%	0.0%	2.4%			Allocate on Basis of Treatment O&M , Less Power, Chem.
11	Treatment Repair & Replacement	100.00%	2.4%	7.6%	3.1%	7.7%	0.0%	1.1%	8.5%	42.1%	20.4%	5.4%	0.5%	0.0%	0.0%	1.1%	0.0%	Allocate on Basis of Treatment Plant in Service
12	Sewer Maintenance	100.00%		100.0%														Primary Capacity
13	Transfer to General Fund	100.00%	16.2%	47.1%	2.7%	3.9%	0.0%	1.9%	5.1%	0.0%	14.5%	5.9%	1.0%	0.0%	1.6%			Allocate on Basis of Treatment O&M and Sewer Maint., Less Power, & Chem.
14	Billing	100.00%															100.0%	Billing

Appendix A-10 O&M Allocated Costs

		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]	[O]	[P]
			Common to Retail						Common to All								
Line No.	Description	Total	Volume	Capacity	BOD	TSS	Ammonia	FOG	Volume	Capacity	BOD	TSS	Ammonia	FOG	SSJISD	Septage	Billing
		$	$	$	$	$	$	$	$	$	$	$	$	$	$		$
1	Primary Treatment	953,898	858,508	-	28,617	57,234	-	9,539	-	-	-	-	-	-	-		-
2	Secondary Treatment	930,844	-	-	-	-	-	-	177,791	-	572,469	155,451	25,133	-	-		-
3	Sludge	332,409	-	-	34,238	67,147	-	11,634	-	-	130,304	61,163	27,922	-	-		-
4	Pumping	520,135	-	424,431	-	-	-	-	-	-	-	-	-	-	95,705		-
5	Vehicles	100,213	9,520	5,412	7,716	15,333	-	2,606	2,806	2,906	32,169	14,431	6,414	-	902		-
6	Gas	165,000	72,600	-	-	-	-	-	92,400	-	-	-	-	-	-		-
7	Electric Service	1,556,700	708,299	-	29,577	57,598	-	9,340	82,505	-	552,629	52,928	23,351	-	40,474		-
8	Chemicals	538,600	-	-	55,476	108,797	-	18,851	-	-	211,131	99,102	45,242	-	-		-
9	Laboratory	721,600	90,200	-	90,200	90,200	-	90,200	120,507	-	120,507	119,786	-	-	-		-
10	General Treatment	1,338,274	312,949	140,383	70,625	110,620	-	43,381	98,338	949	348,336	146,944	34,198	-	31,551		-
11	Treatment Repair & Replacement	2,244,200	53,795	171,208	69,839	172,799	-	23,685	191,134	945,690	458,176	121,279	11,221	-	-	25,328	-
12	Sewer Maintenance	2,351,300	-	2,351,300	-	-	-	-	-	-	-	-	-	-	-		-
13	Transfer to General Fund	1,995,500	323,522	938,984	54,281	77,624	-	38,482	101,660	981	288,821	118,449	20,078	-	32,617		-
14	Billing	1,566,826	-	-	-	-	-	-	-	-	-	-	-	-	-		1,566,826
15	Total O&M	15,315,500	2,429,393	4,031,716	440,569	757,352	-	247,718	867,142	950,526	2,714,542	889,533	193,559	-	201,249	25,328	1,566,826
16	Less: O&M Adjustments	(992,400)															
17	Net O&M From Rates	14,323,000	2,272,100	3,770,400	412,000	708,300	-	231,700	810,900	888,900	2,538,600	831,900	181,000	-	188,200	23,700	1,465,300

Appendix A-11 Fixed Assets (1 of 6)

Location	FA ID	Asset Description	Code	Original Cost	Accumulated Depreciation	Year in Service	Trend Factor	Trended Cost	Trended Cost Less Depr	Allocation
				$	$			$	$	
LAND										
LAND	A900287	TREATMENT PLANT LAND	LD	126,553	0	1967	1.000	126,553	126,553	Treatment - Other Primary
LAND	A870895	SECONDARY PLANT	LD	91,344	0	1967	1.000	91,344	91,344	Treatment - Other Secondary
LAND	A870889	R2-1 WHITEHEAD PUMP STATION	LD	57,836	0	1967	1.000	57,836	57,836	Pumping
LAND	A870891	R-3 INTERCEPTOR MISC EXP	LD	16,174	0	1967	1.000	16,174	16,174	Collection & Conveyance
LAND	870883	WHITEHEAD PUMP STATION LAND	LD	12,565	0	1967	1.000	12,565	12,565	Pumping
LAND	870892	BROWN'S BRANCH PUMP STATION	LD	8,339	0	1967	1.000	8,339	8,339	Pumping
LAND	870893	ROY'S BRANCH PUMP STATION LAND	LD	3,008	0	1967	1.000	3,008	3,008	Pumping
LAND	A870932	D#217 GF LAND PARCEL	LD	2,550	0	1967	1.000	2,550	2,550	Collection & Conveyance
LAND	A870896	LAND EASEMENTS	LD	2,521	0	1967	1.000	2,521	2,521	Collection & Conveyance
LAND	870879	BLACKSNAKE PUMP STATION LAND	LD	2,048	0	1967	1.000	2,048	2,048	Pumping
LAND	A870936	G1-1 PICKETT-MITCHELL	LD	1,667	0	1967	1.000	1,667	1,667	Collection & Conveyance
LAND	A870884	G7-1 6TH STREET	LD	1,421	0	1967	1.000	1,421	1,421	Collection & Conveyance
LAND	A870890	R2-2 WHITEHEAD FORCE MAIN	LD	1,295	0	1967	1.000	1,295	1,295	Collection & Conveyance
LAND	A870885	G7-2 KING HILL EXTENSION	LD	1,029	0	1967	1.000	1,029	1,029	Collection & Conveyance
LAND	870881	FARAON PUMP STATION LAND	LD	90,594	0	1969	1.000	90,594	90,594	Pumping
LAND	A870897	102 INTERCEPTOR	LD	26,262	0	1976	1.000	26,262	26,262	Collection & Conveyance
LAND	A870899	OUTFALL LINE	LD	18,300	0	1976	1.000	18,300	18,300	Treatment - Outfall
LAND	A870898	CARNATION EASEMENT	LD	2,928	0	1976	1.000	2,928	2,928	Collection & Conveyance
SSJ	A900288	SOUTH ST JOSEPH PUMP STATION	LD	3,500	0	1978	1.000	3,500	3,500	SSJISD Pump Stations
LAND	A870900	COUNTRY SQUIRE	LD	2,100	0	1984	1.000	2,100	2,100	Collection & Conveyance
LAND	870901	EASTON RD LIFT STATION LAND	LD	1,000	0	1984	1.000	1,000	1,000	Pumping
LAND	A870933	SD#262 GF LAND PARCEL	LD	1,000	0	1986	1.000	1,000	1,000	Collection & Conveyance
LAND	A880450	LAND EASEMENTS	LD	9,390	0	1987	1.000	9,390	9,390	Collection & Conveyance
LAND	A880042	LAND EASEMENT SEWER DIST #317	LD	2,000	0	1987	1.000	2,000	2,000	Collection & Conveyance
LAND	A880041	LAND EASEMENT SEWER NORTHRIDGE	LD	1,650	0	1987	1.000	1,650	1,650	Collection & Conveyance
WPC	70049	4316 STOCKYARDS EXPRESSWAY	LD	151,220	0	2006	1.000	151,220	151,220	Collection & Conveyance
WPC	90060	UP Railroad Land Purch-Blcksnk	LD	175,638	0	2009	1.000	175,638	175,638	Pumping
SWMTN	100137	Hausman Trstee Land Purchase	LD	29,000	0	2010	1.000	29,000	29,000	Collection & Conveyance
SWMTN	100136	Word of Life Land Purchase	LD	15,000	0	2010	1.000	15,000	15,000	Collection & Conveyance
SWMTN	100138	Kennedy Land Purchase	LD	5,900	0	2010	1.000	5,900	5,900	Collection & Conveyance
LAND	110204	FY11 Sewer Easements	LD	18,563	0	2011	1.000	18,563	18,563	Collection & Conveyance
LAND	120069	2012 land purch for Whthd Pump	LD	551,862	0	2012	1.000	551,862	551,862	Pumping
WPC	160066	Blacksnake Permanent Land Acquistions	LD	604,241	0	2016	1.000	604,241	604,241	Collection & Conveyance
LAND	120067	Disinf Pump Stat-land (Pallet)	LD	200,000	0	2012	1.000	200,000	200,000	Treatment - Outfall
LAND	120068	Disinf Pump Sta-land(Bartlett)	LD	17,900	0	2012	1.000	17,900	17,900	Treatment - Outfall
LAND	120065	Jessen Perm Easemt CTYL/Yrk St	LD	10,500	0	2012	1.000	10,500	10,500	Collection & Conveyance
LAND	130204	2013 Sewer Easements	LD	47,810	0	2013	1.000	47,810	47,810	Collection & Conveyance
LAND	130205	Whitehead-BNSF Easements	LD	16,775	0	2013	1.000	16,775	16,775	Collection & Conveyance
WPC	140076	Atha/Janice East Side Imp Land	LD	381,179	0	2014	1.000	381,179	381,179	Collection & Conveyance
SWMTN	140202	2014 Sewer Easements	LD	349,379	0	2014	1.000	349,379	349,379	Collection & Conveyance
		TOTAL LAND		3,062,041				3,062,041	3,062,041	
			Check	2,457,800						
BUILDINGS AND IMPROVEMENTS										
WHITEHEAD	850076	WHITEHEAD PUMPING STATION	BD	172,854.00	172,854	1965	11.054	1,910,654	0	Pumping
SEWAGE	850156	PLANT SEWAGE PUMP STATION	BD	100,336.80	100,337	1965	11.054	1,109,080	0	Treatment - Pumping
STATIONS	850128	ZIMMERMAN LIFT STATION	BD	12,280.00	12,159	1967	10.148	124,612	1,227	Pumping
BROWN	850072	BROWNS BRANCH PUMPING STATION	BD	76,080.00	76,080	1968	9.672	735,836	0	Pumping
STATIONS	850127	ROYS BRANCH LIFT STATION	BD	16,120.00	14,348	1972	6.728	108,460	11,919	Pumping
STATIONS	850122	PHILLIPS & SHERMAN LIFT STATIO	BD	19,520.00	16,590	1974	5.291	103,272	15,499	Pumping
STATIONS	850130	SHERWOOD LIFT STATION	BD	20,880.00	17,330	1975	4.798	100,192	17,033	Pumping
STATIONS	850126	CAMBRIDGE LIFT STATION	BD	23,200.00	18,329	1977	4.390	101,850	21,382	Pumping
SSJ	850075	SOUTH ST JOE INDUSTRIAL PUMP	BD	118,472.20	118,472	1978	3.994	473,124	0	SSJISD Pump Stations
OLDCONTROL	850137	FILTER/CTRL BLDG W/ DIGESTERS	BD	4,179,844.00	3,134,884	1979	3.663	15,309,606	3,827,396	Treatment - Digester
BLOWER	850154	AEROBIC DIGESTER	BD	2,289,326.00	1,716,993	1979	3.663	8,385,164	2,096,296	Treatment - Digester
INTERMED	850144	INTERMEDIATE PUMP STATION	BD	1,554,740.00	1,166,054	1979	3.663	5,694,580	1,423,650	Treatment - Pumping
WPC	850148	AERATION TANK RETURN	BD	812,666.80	609,498	1979	3.663	2,976,572	744,150	Treatment - Aeration
CLARIFIERS	850149	SECONDARY CLARIFIER #2	BD	675,758.00	506,817	1979	3.663	2,475,114	618,783	Treatment - Secondary Clarifier
CLARIFIERS	850151	SECONDARY CLARIFIER #3	BD	675,758.00	506,817	1979	3.663	2,475,114	618,783	Treatment - Secondary Clarifier
CLARIFIERS	850150	SECONDARY CLARIFIER #4	BD	675,758.00	506,817	1979	3.663	2,475,114	618,783	Treatment - Secondary Clarifier
FLOTATION	850155	DISSOLVED AIR FLOTATION	BD	524,027.60	524,028	1979	3.663	1,919,367	0	Treatment - DAF
BLOWER	850153	BLOWER BUILDING	BD	517,151.60	387,864	1979	3.663	1,894,182	473,545	Treatment - Blower Bldg.
FARAON	850073	FARAON STREET PUMP STATION	BD	485,292.80	485,293	1979	3.663	1,777,493	0	Pumping
CHEMICAL	850157	C P CLARIFIER WITH CONTROL	BD	393,689.20	295,267	1979	3.663	1,441,974	360,492	Treatment - Other Primary
RETURNPUMP	850147	RETURN #1 ONE STORY BLDG	BD	284,208.00	213,156	1979	3.663	1,040,975	260,244	Treatment - Sludge Pumping
RETURNPUMP	850146	RETURN #2 ONE STORY BLDG	BD	284,208.00	213,156	1979	3.663	1,040,975	260,244	Treatment - Sludge Pumping
SWMTN	850158	MAINTENANCE BUILDING	BD	277,866.80	208,400	1979	3.663	1,017,749	254,439	Collection & Conveyance
CLARIFIERS	850141	PRIMARY CLARIFIER #2	BD	271,220.00	203,414	1979	3.663	993,403	248,356	Treatment - Primary Clarifier
CLARIFIERS	850142	PRIMARY CLARIFIER #3	BD	271,220.00	203,414	1979	3.663	993,403	248,356	Treatment - Primary Clarifier
CLARIFIERS	850143	PRIMARY CLARIFIER #4	BD	271,220.00	203,414	1979	3.663	993,403	248,356	Treatment - Primary Clarifier
TRANSFER	850152	TRANSFER PUMP/UTILITY WATER	BD	233,249.20	174,937	1979	3.663	854,327	213,580	Treatment - Pumping
EASTON	850123	EASTON RD LIFT STATION 6294FS	BD	68,760.00	51,570	1979	3.663	251,849	62,962	Pumping
RAWPUMP	850139	RAW SLUDGE PUMP HOUSE #1	BD	57,682.00	43,263	1979	3.663	211,273	52,813	Treatment - Sludge Pumping
RAWPUMP	850140	RAW SLUDGE PUMP HOUSE #2	BD	57,682.00	43,263	1979	3.663	211,273	52,813	Treatment - Sludge Pumping
FARAON	850074	STORAGE SHED	BD	4,660.40	4,660	1979	3.663	17,070	0	Pumping
STATIONS	880323	LIFT STATION 16 AIRPRT 15-1578	BD	22,000.00	22,000	1987	2.579	56,742	0	Pumping
BLUESIDE	900216	AEROBIC ACTIVATED SLUDGE SYSTE	BD	1,723,974.23	1,522,845	1990	2.390	4,120,232	480,692	Treatment - Digester
BLOWER	920424	ELECTRICAL IMPROVEMENTS	BD	65,496.64	53,490	1991	2.345	153,570	28,152	Treatment - Blower Bldg.
OLDCONTROL	910298	FILTER BLDG ROOF REPLACEMENT	BD	27,321.00	23,222	1991	2.345	64,059	9,610	Treatment - Digester
BLOWER	920418	WPC ROOF REPAIR/REPLACEMENT	BD	27,761.00	22,670	1992	2.354	65,339	11,981	Treatment - Blower Bldg.
BROWN	920262	INSULATED ROLL UP OVRHEAD DOOR	BD	4,165.00	3,402	1992	2.354	9,803	1,797	Admin. & General
BROWN	920263	INSULATED ROLL UP OVRHEAD DOOR	BD	2,980.00	2,434	1992	2.354	7,014	1,285	Admin. & General
STATIONS	940744	GENERATOR FLOOD REPLACEMENT	BD	26,452.00	19,840	1993	2.251	59,541	14,884	Pumping
STATIONS	930383	LIFT STATION WHEATRIDGE	BD	13,000.00	6,111	1993	2.251	29,262	15,507	Pumping
STATIONS	930382	OLD 12 OAKS Lift Station	BD	13,000.00	6,111	1993	2.251	29,262	15,507	Pumping
AIRPORT	940743	AIRPORT LIFT STATION FLOOD REP	BD	26,560.99	19,921	1994	2.157	57,287	14,322	Pumping
AIRPORT	940742	DRAINAGE PUMP STATION FLOOD RP	BD	18,008.06	13,505	1994	2.157	38,840	9,711	Pumping
INTERMED	940694	TRICKLING FILTER #3	BD	968,100.14	693,806	1995	2.050	1,984,285	562,213	Treatment - Trickling Filter
SEWAGE	950697	MAG METER & PLC INSTALLATION	BD	26,707.50	19,141	1995	2.050	54,742	15,509	Treatment - Meters
RAWPUMP	950698	MAG METER 7 PLC INSTALLATIONS	BD	26,707.50	19,141	1995	2.050	54,742	15,509	Treatment - Meters
FLOTATION	950695	OVERHEAD HOISTING RAIL	BD	23,500.00	16,842	1995	2.050	48,167	13,646	Treatment - DAF
WPC	950660	MAIN OFFICE ROOF REPLACEMENT	BD	16,306.00	16,306	1995	2.050	33,422	0	Admin. & General
WPC	940693	AEROBIC DIGESTER IMPROVEMENTS	BD	906,506.30	589,229	1996	2.003	1,815,946	635,582	Treatment - Digester
INTERMED	940695	TRICKLING FILTER #2	BD	786,658.04	537,549	1996	2.003	1,575,862	499,023	Treatment - Trickling Filter

Appendix A-11 Fixed Assets (2 of 6)

Location	FA ID	Asset Description	Code	Original Cost	Accumulated Depreciation	Year in Service	Trend Factor	Trended Cost	Trended Cost Less Depr	Allocation
				$	$			$	$	
INTERMED	940696	TRICKLING FILTER #4	BD	786,658.04	537,549	1996	2.003	1,575,862	499,023	Treatment - Trickling Filter
INTERMED	940697	INTERMEDIATE PUMPING ST IMPROV	BD	457,163.15	312,395	1996	2.003	915,806	290,004	Treatment - Pumping
SEWAGE	940692	PLANT SEWAGE PUMP STATION IMPR	BD	421,822.39	274,185	1996	2.003	845,010	295,753	Treatment - Pumping
BROWN	940706	BROWNS BRANCH PUMP ST IMPROVEM	BD	138,960.90	94,956	1996	2.003	278,372	88,152	Pumping
WPC	950659	DIGESTER REHABS 1,2,3,4	BD	36,718.86	25,092	1996	2.003	73,557	23,292	Treatment - Digester
OLDCONTROL	970364	STAIRS AND 2 RAILINGS	BD	17,662.00	11,480	1996	2.003	35,381	12,384	Treatment - Digester
WPC	960905	MISC TRTMNT PLANT IMPRV 420026	BD	3,828,935.58	2,488,808	1997	1.959	7,500,352	2,625,124	Treatment - General
NEWCONTROL	960895	ADMIN BLDG CIP 420-060	BD	1,615,267.87	1,049,925	1997	1.959	3,164,085	1,107,428	Treatment - General
WPC	940691	FILTER CTRL BLDG IMPROVEMENTS	BD	1,165,280.00	757,432	1997	1.959	2,282,621	798,917	Treatment - Sludge
OLDCONTROL	990129	ROOF REPLACEMNT WASTEWTR PLANT	BD	37,160.00	21,676	1999	1.876	69,703	29,044	Treatment - Digester
SSJ	990128	ROOF REPLACEMENT STJOE PLANT	BD	14,774.00	8,618	1999	1.876	27,712	11,546	SSJISD Pump Stations
BROWN	990127	ROOF REPLACEMENT BROWN'S BRNCH	BD	14,077.00	8,211	1999	1.876	26,405	11,003	Pumping
WHITEHEAD	32	ROOF REPLACE-WHITEHEAD	BD	42,350.00	42,350	2000	1.826	77,329	0	Pumping
FARAON	33	ROOF REPLACE - FARAON PUMP STA	BD	39,420.00	39,420	2000	1.826	71,979	0	Pumping
WPC	40040	ROOF REPLACEMENT	BD	23,941.00	23,941	2003	1.587	37,999	0	Treatment - General
SWMTN	70026	SEWER MAINT GARAGE	BD	31,270.86	9,902	2007	1.306	40,837	27,906	Collection & Conveyance
SWMTN	100120	Sewer Mtce/Recyc Ctr Facility	BD	889,011.85	162,986	2011	1.138	1,011,578	826,122	Collection & Conveyance
WPC	110106	Disinf/Effluent Pump Station	BD	26,931,479.65	2,244,290	2014	1.047	28,207,421	25,856,803	Treatment - Outfall
WPC	100112	Septage Receivng Sys Building	BD	290,487.84	33,890	2013	1.049	304,766	269,210	Treatment - Septage
	130112	WP Maintenance Building	BD	2,328,531.81	349,280	2015	1.011	2,355,165	2,001,891	Admin. & General
WHITEHEAD	853750	C/O ASPHALT PAVING AND FENCING	IM	6,282.20	6,282	1965	11.054	69,441	0	Pumping
WPC	853305	LOT OF LAND IMPROVEMENTS	IM	195,000.00	195,000	1979	3.663	714,231	0	Treatment - Other Primary
WPC	960896	INTERCEPTOR CLEANING & REHAB	IM	616,327.17	421,157	1996	2.003	1,234,649	390,972	Collection & Conveyance
WPC	950696	WPC FACILITY FENCES	IM	10,940.00	7,476	1996	2.003	21,915	6,939	Treatment - General
WPC	970389	DIGESTER #1&2 REHAB (R-28)	IM	1,765,081.38	1,147,302	1997	1.959	3,457,549	1,210,143	Treatment - Digester
AIRPORT	980180	PUMP STATION WIRING 420-137	IM	263,340.38	263,340	1998	1.940	510,996	0	Pumping
WHITEHEAD	990219	INSTALL 3 FREQUENCY DRIVES	IM	61,854.00	36,082	1999	1.876	116,023	48,342	Pumping
WPC	36	MANHOLE REHAB PROJECT	IM	148,899.50	148,900	2000	1.826	271,884	0	Collection & Conveyance
CLARIFIERS	30108	REPAIRS TO SEC CLARIFIER #3	IM	144,523.04	39,021	2002	1.664	240,483	175,553	Treatment - Secondary Clarifier
WHITEHEAD	40003	Magnetic Flow Meter	IM	19,745.38	8,227	2003	1.587	31,339	18,281	Pumping
SEWAGE	40052	FLOWSERVE CENTRIFICAL PUMP	IM	45,269.71	18,862	2004	1.551	70,230	40,968	Treatment - Pumping
WPC	40054	REPLACE STAINLESS AIR FILTER	IM	45,200.00	45,200	2004	1.551	70,122	0	Treatment - Blower Bldg.
SSJ	70047	INVERTER REPLACEMENT	IM	583,629.05	184,816	2006	1.376	802,814	548,590	SSJISD Pump Stations
WPC	60045	SECURITY GATE SYSTEM	IM	41,703.00	14,596	2006	1.376	57,365	37,287	Treatment - General
WPC	40129	WWTP EXPAN FOR TRIUMPH FOODS	IM	14,004,291.57	3,967,883	2008	1.240	17,372,057	12,449,974	Treatment - Industrial Secondary Clarifier
WPC	40128	DIGESTER REHAB	IM	1,075,810.32	304,813	2008	1.240	1,334,522	956,408	Treatment - Digester
INFRAS	80115	Block St. Drainage Improvments	IM	144,008.75	36,002	2009	1.168	168,191	126,144	Collection & Conveyance
SWMTN	90101	Llama Ln Storm Drainage Projt	IM	113,895.96	28,474	2009	1.168	133,022	99,766	Collection & Conveyance
CLARIFIERS	100114	Rehab Primary Clarifier #2	IM	334,006.09	72,368	2010	1.179	393,809	308,484	Treatment - Secondary Clarifier
EASTON	80126	Easton Rd Station & Force Main	IM	123,644.00	26,790	2010	1.179	145,782	114,196	Collection & Conveyance
SSJ	90121	SSJ Pump Stat Wet Well Rehab	IM	1,217,524.51	182,629	2012	1.088	1,324,513	1,125,836	SSJISD Pump Stations
	100113	Rehab Secondary Clar #2 & #4	IM	1,199,226.64	179,884	2012	1.088	1,304,607	1,108,916	Treatment - Secondary Clarifier
	100116	Overhaul 4 Elevators	IM	469,178.30	70,377	2012	1.088	510,407	433,846	Admin. & General
	90120	Rosecrans Sewage Lagoon Efflue	IM	431,670.19	64,750	2012	1.088	469,603	399,162	Treatment - General
Other	120106	County Line/York Pump Station	IM	652,107.11	76,079	2013	1.049	684,160	604,341	Pumping
	130111	Greens Demonstration Project	IM	325,288.32	48,793	2015	1.011	329,009	279,658	Collection & Conveyance
	100115	Whitehead Creek Strmwtr Separation	IM	16,285,514.68	487,297	2015	1.011	16,471,787	15,978,916	Collection & Conveyance
	130109	WP Lab Rehab & Improvements	IM	873,110.38	130,967	2015	1.011	883,097	750,632	Laboratory
	150049	WPC Lab Light Replacement	IM	305,577.00	45,837	2015	1.011	309,072	262,711	Laboratory
				100,764,557	32,312,634			167,879,794	87,345,699	
		Less Contributed Property		(14,004,292)	(3,967,883)			(17,372,057)	(12,449,974)	Contribution - Treatment
				86,760,266				150,507,737	74,895,725	
MACHINERY AND EQUIPMENT										
BROWN	853748	PROCESS PIPING C/O PIPE	ME	105,790.00	105,790	1965	11.429	1,209,029	0	Pumping
BROWN	853749	PROCESS PIPING C/O PIPE	ME	77,480.00	77,480	1965	11.429	885,486	0	Pumping
INTERMED	853251	PROCESSING PIPING C/O PIPE	ME	41,400.00	41,400	1965	11.429	473,143	0	Treatment - Pumping
INTERMED	853208	PROCESSING PIPING C/O PIPE	ME	39,425.40	39,425	1965	11.429	450,576	0	Treatment - Pumping
BROWN	853740	PROCESS PIPING C/O PIPE	ME	23,840.00	23,840	1965	11.429	272,457	0	Pumping
INTERMED	853209	PROCESSING PIPING C/O PIPE	ME	19,370.00	19,370	1965	11.429	221,371	0	Treatment - Pumping
BROWN	650342	CHART RECORDER CABINET	ME	7,450.00	7,450	1965	11.429	85,143	0	Pumping
BLOWER	650341	MOTOR CONTROL CENTER	ME	7,450.00	7,450	1965	11.429	85,143	0	Treatment - Blower Bldg.
GARAGE	734222	LATHE-METAL	ME	8,540.00	8,540	1973	7.200	61,488	0	Admin. & General
WHITEHEAD	770317	SEWAGE PUMP CENTRIFUAL #3	ME	47,440.00	47,440	1977	4.737	224,716	0	Pumping
WHITEHEAD	770318	SEWAGE PUMP CENTRIFUAL #4	ME	47,440.00	47,440	1977	4.737	224,716	0	Pumping
WHITEHEAD	770319	SEWAGE PUMP CENTRIFUAL #5	ME	47,440.00	47,440	1977	4.737	224,716	0	Pumping
BLOWER	770316	MOTOR CONTROL CENTER	ME	35,580.00	35,580	1977	4.737	168,537	0	Treatment - Blower Bldg.
WHITEHEAD	650321	SEWAGE PUMP CENTRIFUAL #1	ME	23,840.00	23,840	1977	4.737	112,926	0	Pumping
WHITEHEAD	650320	SEWAGE PUMP CENTRIFUAL #2	ME	23,840.00	23,840	1977	4.737	112,926	0	Pumping
WHITEHEAD	853746	SHAW BOX CRANE 5 TON	ME	14,825.00	14,825	1977	4.737	70,224	0	Pumping
BROWN	853744	PROCESS PIPING C/O PIPE	ME	144,450.00	144,450	1978	4.390	634,171	0	
FARAON	780336	SEWAGE PUMP CENTRIFUGAL	ME	51,360.00	51,360	1978	4.390	225,483	0	
FARAON	780337	SEWAGE PUMP CENTRIFUGAL	ME	51,360.00	51,360	1978	4.390	225,483	0	
FARAON	780338	SEWAGE PUMP CENTRIFUGAL	ME	51,360.00	51,360	1978	4.390	225,483	0	
OLDCONTROL	A90026	3 TON ELECTRIC HOIST	ME	6,420.00	6,420	1978	4.390	28,185	0	Treatment - General
SSJ	780335	HOIST ELECTRIC 3 TON	ME	6,420.00	6,420	1978	4.390	28,185	0	SSJISD Pump Stations
INTERMED	853250	PROCESSING PIPING C/O PIPE	ME	207,000.00	207,000	1979	4.022	832,626	0	
BROWN	853742	PROCESS PIPING C/O PIPE	ME	172,500.00	172,500	1979	4.022	693,855	0	
WPC	853258	SWINGFUSER INCLUD PIPING RETUR	ME	132,480.00	132,480	1979	4.022	532,880	0	
INTERMED	853254	PROCESSING PIPING C/O PIPE	ME	120,750.00	120,750	1979	4.022	485,698	0	
BROWN	853264	PROCESS PIPING C/O PIPE	ME	103,500.00	103,500	1979	4.022	416,313	0	
INTERMED	853256	PROCESSING PIPING C/O PIPE	ME	103,500.00	103,500	1979	4.022	416,313	0	
EASTON	790292	EMERGENCY GENERATOR SET	ME	86,250.00	86,250	1979	4.022	346,927	0	
SEWAGE	794398	MECHANICAL BAR SCREEN	ME	69,000.00	69,000	1979	4.022	277,542	0	
SEWAGE	853265	PROCESS PIPING C/O PIPER	ME	69,000.00	69,000	1979	4.022	277,542	0	
INTERMED	790716	RAW SEWAGE PUMP CENTRIFUGAL	ME	62,100.00	62,100	1979	4.022	249,788	0	
INTERMED	790717	RAW SEWAGE PUMP CENTRIFUGAL	ME	62,100.00	62,100	1979	4.022	249,788	0	
INTERMED	790718	RAW SEWAGE PUMP CENTRIFUGAL	ME	62,100.00	62,100	1979	4.022	249,788	0	
BLOWER	790792	MOTOR CONTROL CENTER	ME	58,650.00	58,650	1979	4.022	235,911	0	
BROWN	790770	MECHANICAL BAR SCREEN #1	ME	55,200.00	55,200	1979	4.022	222,034	0	
BROWN	790771	MECHANICAL BAR SCREEN #2	ME	55,200.00	55,200	1979	4.022	222,034	0	
OLDCONTROL	790632	HEAT EXCHANGER	ME	51,750.00	51,750	1979	4.022	208,156	0	
OLDCONTROL	790633	HEAT EXCHANGER	ME	51,750.00	51,750	1979	4.022	208,156	0	
OLDCONTROL	790634	HEAT EXCHANGER	ME	51,750.00	51,750	1979	4.022	208,156	0	
INTERMED	853252	PROCESSING PIPING C/O PIPE	ME	51,750.00	51,750	1979	4.022	208,156	0	
FLOTATION	794411	G E MOTOR CONTROL CENTER	ME	48,300.00	48,300	1979	4.022	194,279	0	
TRANSFER	790829	SEWAGE PUMP-C/O SCREW PUMP #1	ME	41,400.00	41,400	1979	4.022	166,525	0	
TRANSFER	790828	SEWAGE PUMP-C/O SCREW PUMP #2	ME	41,400.00	41,400	1979	4.022	166,525	0	
TRANSFER	790827	SEWAGE PUMP-C/O SCREW PUMP #3	ME	41,400.00	41,400	1979	4.022	166,525	0	
EASTON	790329	EMERGENCY GENERATOR SET	ME	34,500.00	34,500	1979	4.022	138,771	0	
BLOWER	A90018	ROTARY LOBE BLOWER #5	ME	34,500.00	34,500	1979	4.022	138,771	0	

Appendix A-11 Fixed Assets (3 of 6)

Location	FA ID	Asset Description	Code	Original Cost	Accumulated Depreciation	Year in Service	Trend Factor	Trended Cost	Trended Cost Less Depr	Allocation
				$	$			$	$	
BLOWER	790783	ROTARY LOBE BLOWER 200HP	ME	34,500.00	34,500	1979	4.022	138,771	0	
BLOWER	790784	ROTARY LOBE BLOWER 200HP	ME	34,500.00	34,500	1979	4.022	138,771	0	
BLOWER	790785	ROTARY LOBE BLOWER 200HP	ME	34,500.00	34,500	1979	4.022	138,771	0	
BLOWER	790786	ROTARY LOBE BLOWER 200HP	ME	34,500.00	34,500	1979	4.022	138,771	0	
BLOWER	790787	ROTARY LOBE BLOWER 200HP	ME	34,500.00	34,500	1979	4.022	138,771	0	
BLOWER	790788	ROTARY LOBE BLOWER 200HP	ME	34,500.00	34,500	1979	4.022	138,771	0	
BLOWER	790789	ROTARY LOBE BLOWER 200HP	ME	34,500.00	34,500	1979	4.022	138,771	0	
BLOWER	790790	ROTARY LOBE BLOWER 200HP	ME	34,500.00	34,500	1979	4.022	138,771	0	
BLOWER	790791	ROTARY LOBE BLOWER 200HP	ME	34,500.00	34,500	1979	4.022	138,771	0	
BLOWER	790746	MOTOR CONTROL CENTER	ME	31,050.00	31,050	1979	4.022	124,894	0	
BLOWER	790775	MOTOR CONTROL CENTER	ME	31,050.00	31,050	1979	4.022	124,894	0	
TRANSFER	853262	PROCESS PIPING	ME	24,150.00	24,150	1979	4.022	97,140	0	
CHEMICAL	794430	GE MOTOR CENTRAL CENTER	ME	20,700.00	20,700	1979	4.022	83,263	0	
BLOWER	790826	MOTOR CONTROL CENTER	ME	20,700.00	20,700	1979	4.022	83,263	0	
BROWN	853266	PROCESS PIPING C/O PIPE	ME	20,700.00	20,700	1979	4.022	83,263	0	
INTERMED	853247	PROCESSING PIPING C/O PIPE	ME	18,768.00	18,768	1979	4.022	75,491	0	
SEWAGE	794399	FLOW CABINET, TWO INDICATORS	ME	17,250.00	17,250	1979	4.022	69,385	0	
FLOTATION	794412	G E 7700 LINE CONTROL CENTER	ME	13,800.00	13,800	1979	4.022	55,508	0	
INTERMED	790719	CRANE ELECTRIC 5 TON W/50LF	ME	10,350.00	10,350	1979	4.022	41,631	0	
SEWAGE	794404	FAIRBANKS SEWAGE PUMP #1	ME	10,350.00	10,350	1979	4.022	41,631	0	
SEWAGE	794405	FAIRBANKS SEWAGE PUMP #2	ME	10,350.00	10,350	1979	4.022	41,631	0	
INTERMED	790727	HOIST/CRANE ELECTRIC 5TON	ME	10,350.00	10,350	1979	4.022	41,631	0	
FARAON	790286	SHOW BOX CRANE	ME	10,350.00	10,350	1979	4.022	41,631	0	
RAWPUMP	790713	EMERGENCY GENERATOR SET 20KVA	ME	6,900.00	6,900	1979	4.022	27,754	0	
SEWAGE	794403	LOAD LIFTER CRANE, ELECTRIC	ME	6,900.00	6,900	1979	4.022	27,754	0	
FARAON	790312	SHAW BOX CRANE 2TON WITH 50LF	ME	6,900.00	6,900	1979	4.022	27,754	0	
FLOTATION	794424	SLUDGE PUMP	ME	6,900.00	6,900	1979	4.022	27,754	0	
TRANSFER	853261	TRAVELING HOIST-25LF ELECTRIC	ME	6,900.00	6,900	1979	4.022	27,754	0	
OLDCONTROL	790620	STORAGE TANK FERRIC CHLORIDE	ME	6,210.00	6,210	1979	4.022	24,979	0	
OLDCONTROL	790621	STORAGE TANK FERRIC CHLORIDE	ME	6,210.00	6,210	1979	4.022	24,979	0	
FARAON	790297	HOIST CAHIN 2 TON WITH 100LF	ME	5,520.00	5,520	1979	4.022	22,203	0	
CHEMICAL	794434	SLUDGE PUMP C/T 15H P	ME	5,520.00	5,520	1979	4.022	22,203	0	
OLDCONTROL	790640	SLUDGE PUMP CENTRIFUGAL #1	ME	5,520.00	5,520	1979	4.022	22,203	0	
OLDCONTROL	790641	SLUDGE PUMP CENTRIFUGAL #2	ME	5,520.00	5,520	1979	4.022	22,203	0	
OLDCONTROL	790642	SLUDGE PUMP CENTRIFUGAL #3	ME	5,520.00	5,520	1979	4.022	22,203	0	
OLDCONTROL	790643	SLUDGE PUMP CENTRIFUGAL #4	ME	5,520.00	5,520	1979	4.022	22,203	0	
	871049	Ford 4610 Tractor	ME	15,669.00	15,669	1986	2.717	42,572	0	
WPC	871050	ROTARY MOWER	ME	1,508.00	1,508	1986	2.717	4,097	0	
OLDCONTROL	870800	BLOWER/BURNER	ME	20,845.00	20,845	1987	2.637	54,976	0	
AIRPORT	890128	TW-35 FORD TRACTOR	ME	47,929.00	47,929	1988	2.609	125,032	0	
AIRPORT	890129	JOHN DEERE SPREADER #780	ME	9,822.44	9,822	1988	2.609	25,624	0	
WPC	910049	PRESSURE WASHER W/TRAILER	ME	8,550.00	8,550	1990	2.441	20,868	0	
OLDCONTROL	900048	KOCH STATIC MIXING UNIT	ME	3,245.00	3,245	1990	2.441	7,920	0	
OLDCONTROL	900097	KOCH STATIC MIXING UNIT	ME	3,245.00	3,245	1990	2.441	7,920	0	
GARAGE	910051	FLOOR CRANE #2200	ME	1,771.00	1,771	1990	2.441	4,322	0	
GRITBASIN	A920294	MAGNETIC FLOW METER	ME	83,925.00	83,925	1991	2.400	201,420	0	
WPC	910047	PORTABLE AIR COMPRESSOR	ME	14,233.00	14,233	1991	2.400	34,159	0	
SEWAGE	920413	MECH BAR SCREEN REPLACEMENT BU	ME	160,259.96	160,260	1992	2.353	377,082	0	
OLDCONTROL	920387	EAST HEAT EXCHANGE ROOM	ME	29,000.00	29,000	1992	2.353	68,235	0	
BLOWER	920290	MOTOR CONTROL CENTER	ME	29,000.00	29,000	1992	2.353	68,235	0	
GARAGE	920210	15HP 1750 CHOPPER SUBMERSIBLE	ME	9,620.00	9,620	1992	2.353	22,635	0	
OLDCONTROL	920121	ADJUSTABLE LIFTING CANTRY	ME	3,140.95	3,141	1992	2.353	7,390	0	
OLDCONTROL	920122	ADJUSTABLE LIFTING CANTRY	ME	3,140.95	3,141	1992	2.353	7,390	0	
GRITBASIN	920234	SLUICE GATE FOR SPLITTER BOX	ME	2,492.00	2,492	1992	2.353	5,864	0	
GRITBASIN	920235	SLUICE GATE FOR SPLITTER BOX	ME	2,492.00	2,492	1992	2.353	5,864	0	
GRITBASIN	920236	SLUICE GATE FOR SPLITTER BOX	ME	2,492.00	2,492	1992	2.353	5,864	0	
GRITBASIN	920237	SLUICE GATE FOR SPLITTER BOX	ME	2,492.00	2,492	1992	2.353	5,864	0	
GRITBASIN	920238	SLUICE GATE FOR SPLITTER BOX	ME	2,492.00	2,492	1992	2.353	5,864	0	
GRITBASIN	920239	SLUICE GATE FOR SPLITTER BOX	ME	2,492.00	2,492	1992	2.353	5,864	0	
GRITBASIN	920240	SLUICE GATE FOR SPLITTER BOX	ME	2,492.00	2,492	1992	2.353	5,864	0	
GRITBASIN	920241	SLUICE GATE FOR SPLITTER BOX	ME	2,492.00	2,492	1992	2.353	5,864	0	
GARAGE	920222	EAST GARAGE DOOR 12' W X 12' H	ME	2,490.00	2,490	1992	2.353	5,859	0	
GARAGE	920220	TEKTRONIC OSCILLOSCOPE	ME	2,475.00	2,475	1992	2.353	5,824	0	
AIRPORT	940117	JOHN DEERE 630 DISKS	ME	11,977.13	11,977	1993	2.286	27,376	0	
GARAGE	A97025	STANLEY HYDE VALVE OPERATOR	ME	7,875.00	7,875	1993	2.286	18,000	0	
GARAGE	A97026	STANLEY HYDE VALVE OPERATOR	ME	7,875.00	7,875	1993	2.286	18,000	0	
RAWPUMP	930367	MOYNA PROGRESSIVE CAV PUMP #4	ME	6,653.00	6,653	1993	2.286	15,207	0	
RAWPUMP	930368	MOYNA PROGRESSIVE CAV PUMP #5	ME	6,653.00	6,653	1993	2.286	15,207	0	
RAWPUMP	930369	MOYNA PROGRESSIVE CAV PUMP #6	ME	6,653.00	6,653	1993	2.286	15,207	0	
TRANSFER	A94037	CENTRIFUGAL PROCESS TYPE PUMP	ME	5,659.86	5,660	1993	2.286	12,937	0	
TRANSFER	A94038	CENTRIFUGAL PROCESS TYPE PUMP	ME	5,659.86	5,660	1993	2.286	12,937	0	
TRANSFER	A94039	CENTRIFUGAL PROCESS TYPE PUMP	ME	5,659.86	5,660	1993	2.286	12,937	0	
GARAGE	930166	GENIE AERIAL WORK PLATFORM	ME	5,587.00	5,587	1993	2.286	12,770	0	
FARAON	930189	550GALLON TANK W/ CONTAINMENT	ME	1,088.88	1,089	1993	2.286	2,489	0	
WPC	940053	SLUDGE TRANKER TRAILER	ME	33,434.00	33,434	1994	2.229	74,528	0	
WPC	940052	SLUDGE TANKER TRAILER	ME	30,558.00	30,558	1994	2.229	68,117	0	
FLOTATION	940575	ROTARY SCREW COMPRESSOR	ME	5,420.00	5,420	1994	2.229	12,082	0	
FLOTATION	940576	ROTARY SCREW COMPRESSOR	ME	5,420.00	5,420	1994	2.229	12,082	0	
TRANSFER	940577	GLDS PUMP 3X4-8GS	ME	4,480.00	4,480	1994	2.229	9,986	0	
TRANSFER	940578	GLDS PUMP 3X4-8GS	ME	4,480.00	4,480	1994	2.229	9,986	0	
OLDCONTROL	940029	VENTILATION FAN	ME	3,960.00	3,960	1994	2.229	8,827	0	
OLDCONTROL	940030	VENTILATION FAN	ME	3,960.00	3,960	1994	2.229	8,827	0	
AIRPORT	960482	400 BU SPREADER	ME	11,050.00	11,050	1995	2.162	23,892	0	Treatment - General
GARAGE	A97027	PERSONNEL WINCH RETRIEVEL SYST	ME	3,320.13	3,320	1995	2.162	7,179	0	
GARAGE	950470	3 WAY RETRIVAL TRIPOD	ME	3,119.00	3,119	1995	2.162	6,744	0	Treatment - General
FARAON	960436	HYDRORANGER I W/ 120' CABLE	ME	1,797.10	1,797	1995	2.162	3,886	0	
WPC	970278	1997 8200 6X4 3AXLE TRACTOR	ME	61,801.16	61,801	1996	2.105	130,108	0	
STREETS	970281	JCB 215 BACKHOE/LOADER 1996	ME	57,830.00	57,830	1996	2.105	121,747	0	
WPC	960503	1996 INT DUMPSTER TRUCK	ME	30,811.58	30,812	1996	2.105	64,866	0	
WPC	970279	1997 CHEVROLET 1/2 TON 4X4 PU	ME	19,882.00	19,882	1996	2.105	41,857	0	
WPC	960505	NISSAN NOMAD FORKLIFT TRUCK	ME	19,468.00	19,468	1996	2.105	40,985	0	
SWMTN	960487	TRASH PUMP SELF-PRIMING 6X6 GR	ME	16,029.00	16,029	1996	2.105	33,745	0	
FLOTATION	970395	DAF SLUDGE PUMP & DRIVE	ME	13,554.00	13,554	1996	2.105	28,535	0	
CLARIFIERS	970396	SEC CLARIFIER SCUM PIT PUMP #2	ME	10,451.00	10,451	1996	2.105	22,002	0	
CLARIFIERS	970397	SEC CLARIFIER SCUM PIT PUMP #3	ME	10,451.00	10,451	1996	2.105	22,002	0	
CLARIFIERS	970398	SEC CLARIFIER SCUM PIT PUMP #4	ME	10,451.00	10,451	1996	2.105	22,002	0	
GARAGE	970365	SUTORBUILT BLOWER	ME	4,999.00	4,999	1996	2.105	10,524	0	
SWMTN	970283	SA-1 REVERSE DIAL INDICATOR	ME	2,982.95	2,983	1996	2.105	6,280	0	
WPC	980030	1998 CHEVROLET 3/4 TON PICKUP	ME	21,521.00	21,521	1997	2.045	44,020	0	
AIRPORT	980028	3HP TORNADO AERATOR	ME	16,370.00	16,370	1997	2.045	33,484	0	Treatment - General

Appendix A-11 Fixed Assets (4 of 6)

Location	FA ID	Asset Description	Code	Original Cost	Accumulated Depreciation	Year in Service	Trend Factor	Trended Cost	Trended Cost Less Depr	Allocation
				$	$			$	$	
OLDCONTROL	A98057	MOYNO SLUDGE PUMP #1A	ME	13,541.00	13,541	1997	2.045	27,698	0	
OLDCONTROL	A98059	MOYNO SLUDGE PUMP #1B	ME	13,541.00	13,541	1997	2.045	27,698	0	
OLDCONTROL	A98058	MOYNO SLUDGE PUMP #2A	ME	13,541.00	13,541	1997	2.045	27,698	0	
OLDCONTROL	A98060	MOYNO SLUDGE PUMP #2B	ME	13,541.00	13,541	1997	2.045	27,698	0	
	970291	STETCO 12" ROUND CRANE BUCKETT	ME	4,160.00	4,160	1997	2.045	8,509	0	
	970292	STETCO 15"ORANGE CRANE BUCKET	ME	2,995.00	2,995	1997	2.045	6,126	0	
GARAGE	970296	XK PACEMASTER PLASMA CUTTER	ME	2,908.00	2,908	1997	2.045	5,948	0	
BROWN	A98061	ALLEN BRADLEY CONTROLLER	ME	2,747.39	2,747	1997	2.045	5,620	0	
BROWN	A98062	ALLEN BRADLEY CONTROLLER	ME	2,747.39	2,747	1997	2.045	5,620	0	
SWMTN	980032	8HP HONDA STONE MORTAR MIXER	ME	2,505.00	2,505	1997	2.045	5,124	0	
SWMTN	990094	1999 GMC CAB & CHASSIS	ME	55,495.72	55,496	1998	1.973	109,471	0	
WPC	980044	TRAILER MOUNTED VACUUM SYSTEM	ME	35,400.00	35,400	1998	1.973	69,830	0	
WPC	990078	SKID STEER LOADER 873 BOBCAT	ME	31,603.44	31,603	1998	1.973	62,341	0	
YARD	990077	6000 GALLON ABOVE GROUND FUEL	ME	21,300.00	21,300	1998	1.973	42,016	0	
FARAON	990033	3250 GALLON CHEMICAL TANK	ME	5,887.00	5,887	1998	1.973	11,613	0	
FARAON	990034	3250 GALLON STORAGE TANK	ME	5,887.00	5,887	1998	1.973	11,613	0	
GARAGE	990026	300 GALLON 3 POINT SPRAYER	ME	1,352.94	1,353	1998	1.973	2,669	0	Treatment - General
GARAGE	990113	FURNACE	ME	23,665.00	23,665	1999	1.900	44,957	0	
BLOWER	990114	ADJUSTABLE FREQUENCY DRIVE	ME	17,584.00	17,584	1999	1.900	33,405	0	
BLOWER	990115	ADJUSTABLE FREQUENCY DRIVE	ME	17,584.00	17,584	1999	1.900	33,405	0	
BLOWER	990116	ADJUSTABLE FREQUENCY DRIVE	ME	17,584.00	17,584	1999	1.900	33,405	0	
YARD	990126	3000 GALLON ABOVE FUEL TANK	ME	14,900.00	14,900	1999	1.900	28,306	0	Treatment - General
RAWPUMP	21	R&M 1G065G1-CDQ-AAA PUMP #2	ME	9,748.00	9,748	1999	1.900	18,519	0	
YARD	29	FLYGT CS3152-432 PUMP 20HP	ME	8,203.00	8,203	1999	1.900	15,584	0	
YARD	30	FLYGT CS3152-432 PUMP 20HP	ME	8,203.00	8,203	1999	1.900	15,584	0	
FLOTATION	A03009	SLUDGE PUMP	ME	5,040.00	5,040	1999	1.900	9,575	0	
SWMTN	990093	TRENCH BOX	ME	2,744.00	2,744	1999	1.900	5,213	0	
WPC	28	2000 INTL 9200I 6X4 TRUCK/TRCT	ME	69,243.56	69,244	2000	1.851	128,163	0	
EASTON	31	EASTON ROAD SLUICE GATE	ME	26,412.00	14,527	2000	1.851	48,886	21,998	Collection & Conveyance
WPC	24	2000 CHEVY 3/4 TON CAB/CHASSIS	ME	25,800.00	25,800	2000	1.851	47,753	0	
WPC	26	2000 CHEVY 3/4 TON CAB/CHASSIS	ME	25,800.00	25,800	2000	1.851	47,753	0	
	10024	36" AMERICAN R/D 50 LINE DI	ME	24,500.00	24,500	2000	1.851	45,347	0	Treatment - General
WPC	25	2000 CHEVY 3/4 TON CAB/CHASSIS	ME	23,400.00	23,400	2000	1.851	43,311	0	
RAWPUMP	23	R&M 1GO65G1 CDQ AAA PUMP #1	ME	12,321.45	12,321	2000	1.851	22,806	0	
RAWPUMP	22	R&M 1GO65G1 CDQ AAA PUMP #3	ME	12,321.45	12,321	2000	1.851	22,806	0	
SWMTN	37	PRO SCOUT INSPECTION SYSTEM	ME	11,000.00	11,000	2000	1.851	20,360	0	
FARAON	10055	HEATING AND VENTILATION UNITS	ME	155,838.00	155,838	2001	1.805	281,211	0	
INTERMED	20004	Lower Bearing Type Rotary Arm	ME	92,760.00	92,760	2001	1.805	167,386	0	
WPC	10022	2001 VOLVO TRUCK	ME	90,818.00	90,818	2001	1.805	163,882	0	
WPC	10023	2001 VOLVO TRUCK	ME	90,818.00	90,818	2001	1.805	163,882	0	
YARD	20021	Air Compressor, 260 CFM	ME	14,903.92	14,904	2001	1.805	26,894	0	
STATIONS	10001	Emergency Generator for Roy's	ME	8,669.00	8,669	2001	1.805	15,643	0	
SWMTN	10026	TRENCH SHIELD	ME	5,835.10	5,835	2001	1.805	10,530	0	
WPC	20027	2001 VOLVO DUMP TRUCK	ME	89,510.00	89,510	2002	1.739	155,670	0	
WPC	30002	2003 INERNATIONAL 4200	ME	34,564.00	34,564	2002	1.739	60,111	0	Treatment - General
WPC	30003	WARREN DUMP BODY U451-10	ME	6,111.00	6,111	2002	1.739	10,628	0	Treatment - General
	T12010	2002 Ford F150 Truck	ME	0.00	0	2002	1.739	0	0	Admin. & General
SWMTN	30046	2003 INTERN'L 7400 & CATCH BAS	ME	98,454.30	98,454	2003	1.674	164,854	0	Collection & Conveyance
INTERMED	30059	LOWER BEARING ROTARY ARM	ME	93,500.00	93,500	2003	1.674	156,558	0	Treatment - Pumping
SWMTN	40012	2004 CHEVY 2500 PICKUP	ME	23,787.00	23,787	2003	1.674	39,829	0	Collection & Conveyance
	30041	Ford F450 One ton Cab/Chassis	ME	24,973.95	24,974	2003	1.674	41,817	0	Admin. & General
WPC	30042	2003 Chevrolet Silverado 2500	ME	24,683.00	24,683	2003	1.674	41,330	0	Treatment - General
WPC	30066	Chevrolet S-10 Crew Cab Pickup	ME	18,867.00	18,867	2003	1.674	31,591	0	Admin. & General
INTERMED	40055	LOWER BEARING ROTARY DISTRIBUT	ME	93,500.00	93,500	2004	1.625	151,964	0	Treatment - Pumping
	40039	2004 CHEVY Silverado 2500	ME	24,963.00	24,963	2004	1.625	40,572	0	Admin. & General
WPC	40124	TORO WORKMAN UTILITY VEHICLE	ME	23,517.09	23,517	2004	1.625	38,222	0	Treatment - General
SWMTN	50013	2005 CHEVY SILVERADO	ME	22,550.00	22,550	2004	1.625	36,650	0	Collection & Conveyance
SWMTN	50012	2005 CHEVY SILVERADO	ME	22,550.00	22,550	2004	1.625	36,650	0	Collection & Conveyance
SWMTN	50011	2005 CHEVY SILVERADO	ME	17,793.00	17,793	2004	1.625	28,919	0	Collection & Conveyance
SWMTN	40015	INGERSOL RAND AIR COMPRESSOR	ME	12,110.00	12,110	2004	1.625	19,682	0	Collection & Conveyance
FLOTATION	50051	ASPIRATING PUMP	ME	8,340.00	8,340	2004	1.625	13,555	0	Treatment - DAF
FLOTATION	50052	ASPIRATING PUMP	ME	8,340.00	8,340	2004	1.625	13,555	0	Treatment - DAF
FLOTATION	50053	ASPIRATING PUMP	ME	8,340.00	8,340	2004	1.625	13,555	0	Treatment - DAF
NEWLAB	40048	SPECTROPHOTOMETER	ME	5,293.50	5,294	2004	1.625	8,603	0	Laboratory
WPC	60008	GENIE GS2032 SCISSOR LIFT	ME	10,076.49	10,076	2005	1.558	15,704	0	Treatment - General
FLOTATION	50045	ASPIRATING PUMP	ME	8,340.00	8,340	2004	1.625	13,555	0	Treatment - DAF
FLOTATION	50046	ASPIRATING PUMP	ME	8,340.00	8,340	2004	1.625	13,555	0	Treatment - DAF
FLOTATION	50047	ASPIRATING PUMP	ME	8,340.00	8,340	2004	1.625	13,555	0	Treatment - DAF
FLOTATION	50048	ASPIRATING PUMP	ME	8,340.00	8,340	2004	1.625	13,555	0	Treatment - DAF
FLOTATION	50049	ASPIRATING PUMP	ME	8,340.00	8,340	2004	1.625	13,555	0	Treatment - DAF
FLOTATION	50050	ASPIRATING PUMP	ME	8,340.00	8,340	2004	1.625	13,555	0	Treatment - DAF
SWMTN	60046	2006 INTERNATIONAL 7300	ME	62,256.00	62,256	2006	1.494	92,997	0	Collection & Conveyance
SWMTN	60033	MANHOLE REHABILIATION MACHINE	ME	52,353.00	52,353	2006	1.494	78,204	0	Collection & Conveyance
NEWLAB	70029	3000XL-PLUS SS AUTO EXTRACTOR	ME	32,664.59	32,665	2006	1.494	48,794	0	Treatment - General
WPC	70003	2007 CHEVY SILVERADO	ME	18,582.00	18,582	2006	1.494	27,757	0	Treatment - General
SWMTN	70035	VACTOR SEWER MACHINE	ME	261,384.00	261,384	2007	1.449	378,665	0	Collection & Conveyance
AIRPORT	80108	New Holland Tractor	ME	110,264.00	110,264	2007	1.449	159,739	0	Admin. & General
NEWLAB	70028	ICP PLASMA UNIT	ME	87,508.00	87,508	2007	1.449	126,772	0	Laboratory
SWMTN	70017	CASE 590 BACKHOE LOADER	ME	72,695.00	72,695	2007	1.449	105,313	0	Collection & Conveyance
WPC	80019	2007 Freightliner Sprinter Van	ME	34,344.00	34,344	2007	1.449	49,754	0	Treatment - General
WPC	70042	CSO FLOW MONITORING EQUIPMENT	ME	28,345.00	28,345	2007	1.449	41,063	0	Collection & Conveyance
AIRPORT	70007	BIOSOLIDS SPREADER	ME	27,450.00	27,450	2007	1.449	39,767	0	Treatment - Sludge
NEWLAB	70033	Thermo BOD Incubator	ME	6,088.00	6,088	2007	1.449	8,820	0	Laboratory
	80036	Mechanism for Prim Clarif #3	ME	263,500.00	223,975	2008	1.328	350,037	52,506	Treatment - Primary Clarifier
	80037	Mechanism for Prim Clarif #4	ME	263,500.00	223,975	2008	1.328	350,037	52,506	Treatment - Primary Clarifier
NEWLAB	80020	UVAS Hach Probe	ME	15,525.35	15,525	2008	1.328	20,624	0	Laboratory
SWMTN	100009	2009 Dodge TV Inspection Van	ME	198,136.70	198,137	2009	1.241	245,963	0	Collection & Conveyance
	100006	12" Mob Emer Centrifugal Pump	ME	112,186.48	112,186	2009	1.241	139,266	0	Treatment - Pumping
SWMTN	100015	2010 International 7400	ME	57,622.00	57,622	2009	1.241	71,531	0	Collection & Conveyance
SWMTN	90033	Easement Machine	ME	48,750.00	48,750	2009	1.241	60,517	0	Collection & Conveyance
WPC	90018	2006 Snorkel Boom Lift	ME	45,000.00	45,000	2009	1.241	55,862	0	Treatment - General
YARD	90049	Cummins 80KW Generator	ME	33,869.00	33,869	2009	1.241	42,044	0	Admin. & General
YARD	90050	Cummins 80KW Generator	ME	33,869.00	33,869	2009	1.241	42,044	0	Admin. & General
WPC	90048	2009 Ford F250	ME	26,000.00	26,000	2009	1.241	32,276	0	Treatment - General
WPC	100010	2010 Alumweld Talon Boat	ME	21,947.00	21,947	2009	1.241	27,245	0	Treatment - General
WPC	90026	2009 Ford Ranger	ME	12,236.00	12,236	2009	1.241	15,190	0	Treatment - General
WPC	90027	2009 Ford Ranger	ME	12,236.00	12,236	2009	1.241	15,190	0	Treatment - General
INTERMED	100119	DSI Dynamatic Freq Mag Drive	ME	217,193.34	217,193.34	2010	1.194	259,335	0	Treatment - Pumping
INTERMED	100117	DSI Dynamatic Freq Mag Drive	ME	217,193.33	217,193.33	2010	1.194	259,335	0	Treatment - Pumping
INTERMED	100118	DSI Dynamatic Freq Mag Drive	ME	217,193.33	217,193.33	2010	1.194	259,335	0	Treatment - Pumping

Appendix A-11 Fixed Assets (5 of 6)

Location	FA ID	Asset Description	Code	Original Cost	Accumulated Depreciation	Year in Service	Trend Factor	Trended Cost	Trended Cost Less Depr	Allocation
				$	$			$	$	
WPC	90119	Septage Receiving Sys - JWC	ME	104,459.00	104,459	2010	1.194	124,727	0	Treatment - Septage
	110077	Grinder #1	ME	70,035.50	70,036	2010	1.194	83,624	0	Treatment - Grit Basin
	110078	Grinder #2	ME	70,035.50	70,036	2010	1.194	83,624	0	Treatment - Grit Basin
RETURNPUMP	90139	Screw Pump #2	ME	52,795.02	52,795	2010	1.194	63,039	0	Treatment - Sludge Pumping
	110069	Replace Screw Pump #5	ME	52,658.00	28,962	2010	1.194	62,875	28,294	Treatment - Pumping
	110070	Replace Screw Pump #6	ME	52,658.00	28,962	2010	1.194	62,875	28,294	Treatment - Pumping
RETURNPUMP	100134	Screw Pump #3	ME	52,658.00	52,658	2010	1.194	62,875	0	Treatment - Sludge Pumping
RETURNPUMP	100135	Screw Pump #4	ME	52,658.00	52,658	2010	1.194	62,875	0	Treatment - Sludge Pumping
WPC	110006	2011 Ford F250	ME	26,367.00	26,367	2010	1.194	31,483	0	Treatment - General
WPC	110005	2011 Ford Ranger	ME	17,814.00	17,814	2010	1.194	21,270	0	Treatment - General
WPC	110010	2011 Ford Ranger	ME	13,010.00	13,010	2010	1.194	15,534	0	Treatment - General
SWMTN	100033	Sullair Compressor w/trailer	ME	12,877.00	12,877	2010	1.194	15,376	0	Collection & Conveyance
SWMTN	100022	Dump Body	ME	12,798.00	12,798	2010	1.194	15,281	0	Collection & Conveyance
	100027	19" Digitl Video Recorder	ME	6,675.00	6,675	2010	1.194	7,970	0	Admin. & General
	120025	2012 Intern'l Vactor RamJet	ME	199,277.00	179,349	2011	1.178	234,827	23,483	Collection & Conveyance
	120046	ENPRO Polymer Blending Unit	ME	21,625.00	19,463	2011	1.178	25,483	2,548	Treatment - Sludge
	120047	ENPRO Polymer Blending Unit	ME	21,625.00	19,463	2011	1.178	25,483	2,548	Treatment - Sludge
	120048	ENPRO Polymer Blending Unit	ME	21,625.00	19,463	2011	1.178	25,483	2,548	Treatment - Sludge
	120011	2012 Chevrolet Silverado	ME	21,512.00	19,361	2011	1.178	25,350	2,535	Admin. & General
	120012	2012 Chevrolet Silverado	ME	21,512.00	19,361	2011	1.178	25,350	2,535	Admin. & General
	120023	2012 Chevrolet Silverado	ME	20,986.00	18,887	2011	1.178	24,730	2,473	Admin. & General
WPC	120024	2011 Ford Ranger	ME	19,629.00	17,666	2011	1.178	23,131	2,313	Treatment - General
	120005	2011 Kawasaki Mule	ME	12,289.00	11,060	2011	1.178	14,481	1,448	Admin. & General
	120022	2011 StoAway Bumper Crane	ME	8,301.78	7,472	2011	1.178	9,783	978	Admin. & General
	130019	2012 Ford F450 SD	ME	30,122.00	21,085	2012	1.129	33,993	10,198	Treatment - General
	130022	2012 Ford F250 SD	ME	29,111.00	20,378	2012	1.129	32,853	9,856	Treatment - General
	130023	2012 Ford F250 SD	ME	29,111.00	20,378	2012	1.129	32,853	9,856	Treatment - General
	130030	2013 Dodge Durango SXT	ME	27,667.00	19,367	2012	1.129	31,223	9,367	Treatment - General
	130050	OZII Camera w/CPR Transporter	ME	24,827.00	17,379	2012	1.129	28,018	8,405	Collection & Conveyance
	130051	OZII Camera w/CPR Transporter	ME	24,827.00	17,379	2012	1.129	28,018	8,405	Collection & Conveyance
	130028	2012 Dodge Ram 3500	ME	23,432.00	16,402	2012	1.129	26,444	7,933	Treatment - General
	130027	2012 Dodge Ram 3500	ME	22,464.00	15,725	2012	1.129	25,351	7,605	Treatment - General
	130029	2012 Dodge Ram 3500	ME	22,464.00	15,725	2012	1.129	25,351	7,605	Treatment - General
	120040	2012 Chevrolet Silverado	ME	21,940.00	19,746	2012	1.129	24,760	2,476	Admin. & General
	120041	2012 Chevrolet Silverado	ME	21,940.00	19,746	2012	1.129	24,760	2,476	Admin. & General
	120054	2012 Transit Connect XLT Wagon	ME	21,703.00	19,533	2012	1.129	24,492	2,449	Admin. & General
	130014	Tiger Star mini truck	ME	14,199.00	9,939	2012	1.129	16,024	4,807	Treatment - General
	130015	Tiger Star mini truck	ME	14,199.00	9,939	2012	1.129	16,024	4,807	Treatment - General
	130016	Tiger Star mini truck	ME	14,199.00	9,939	2012	1.129	16,024	4,807	Treatment - General
	130017	Reading 8' Aluminum truck body	ME	12,282.00	8,597	2012	1.129	13,861	4,158	Treatment - General
	130018	Reading 8'Aluminum Truck body	ME	12,282.00	8,597	2012	1.129	13,861	4,158	Treatment - General
	120066	ELGA Rev Osmosis Water System	ME	6,523.00	5,871	2012	1.129	7,361	736	Laboratory
	140014	2013 JD 410K Backhoe Loader	ME	95,775.00	47,888	2013	1.088	104,166	52,083	Treatment - General
	130077	2012 Cat Portable Generator	ME	57,700.00	40,390	2013	1.088	62,755	18,827	Treatment - General
	130080	So 22nd St FX Pump Station	ME	43,000.00	30,100	2013	1.088	46,767	14,030	Pumping
	130054	Bobcat S650 Skid Steer Loader	ME	30,405.58	21,284	2013	1.088	33,070	9,921	Collection & Conveyance
	130069	Annihilator Grinder w/cont pan	ME	23,222.20	16,256	2013	1.088	25,257	7,577	Treatment - Grit Basin
	130070	Annihilator Grinder w/cont pan	ME	23,222.20	16,256	2013	1.088	25,257	7,577	Treatment - Grit Basin
	130071	Annihilator Grinder w/cont pan	ME	23,222.20	16,256	2013	1.088	25,257	7,577	Treatment - Grit Basin
	130072	Annihilator Grinder w/cont pan	ME	23,222.20	16,256	2013	1.088	25,257	7,577	Treatment - Grit Basin
	130073	Annihilator Grinder w/cont pan	ME	23,222.20	16,256	2013	1.088	25,257	7,577	Treatment - Grit Basin
	130079	Cummins Generator - So 22nd St	ME	18,300.00	12,810	2013	1.088	19,903	5,971	Treatment - General
	130059	Hasler 3000 Folder/Inserter	ME	13,868.66	9,708	2013	1.088	15,084	4,525	Treatment - General
	130040	25' Doolittle Trailer	ME	12,970.00	4,539	2013	1.088	14,106	9,169	Admin. & General
	130061	Knapheide utility Service Body	ME	8,768.00	6,138	2013	1.088	9,536	2,861	Treatment - General
	130062	Knapheide 1-Ton Dump Body	ME	7,795.00	5,457	2013	1.088	8,478	2,543	Treatment - General
	130063	Knapheide 1-Ton Dump Body	ME	7,795.00	5,457	2013	1.088	8,478	2,543	Treatment - General
SWMTN	140062	2014 Vactor 2110 Sewer Cleaner	ME	243,962.00	121,981	2014	1.048	255,681	127,840	Collection & Conveyance
SWMTN	140052	2015 International 7500	ME	93,927.00	46,964	2014	1.048	98,439	49,219	Admin. & General
AIRPORT	160042	Hyundai HL730-9A	ME	113,900.00	11,390	2016	1.000	113,900	102,510	Admin. & General
SWMTN	T16002	Takeuchi Mini Excavator	ME		-	2016	1.000			Collection & Conveyance
AIRPORT	T16003	2011 Kawasaki Mule	ME	12,289.00	11,060	2016	1.000	12,289	1,229	Admin. & General
WPC	T16006	Vactor 2110 Sewer Machine	ME	153,318.00	153,318	2016	1.000	153,318	0	Collection & Conveyance
WPC	160003	2015 Nissan Frontier 4WD	ME	26,609.50	2,661	2015	1.030	27,409	24,668	Admin. & General
WPC	160004	2015 Nissan Frontier 4WD	ME	26,609.50	2,661	2015	1.030	27,409	24,668	Admin. & General
WPC	160009	2015 Ford F150	ME	27,179.00	2,718	2015	1.030	27,996	25,196	Admin. & General
WPC	160026	2016 Mack Truck	ME	163,750.00	16,375	2016	1.000	163,750	147,375	Treatment - General
SWMTN	160040	2016 Chevrolet Silverado	ME	21,688.00	2,169	2016	1.000	21,688	19,519	Admin. & General
SWMTN	160059	2017 Freightliner Vactor Truck	ME	366,549.00	36,655	2016	1.000	366,549	329,894	Treatment - General
WPC	140043	2014 Ford E350 SD	ME	23,858.00	11,929	2014	1.048	25,004	12,502	Admin. & General
WPC	140042	2014 Ford F250 SD	ME	22,155.00	11,078	2014	1.048	23,219	11,610	Admin. & General
				11,743,612	10,458,603			28,399,373	1,373,702	
			PDF chec	12,577,992	11,572,028					

Appendix A-11 Fixed Assets (6 of 6)

Location	FA ID	Asset Description	Code	Original Cost	Accumulated Depreciation	Year in Service	Trend Factor	Trended Cost	Trended Cost Less Depr	Allocation
				$	$			$	$	
OTHER										
	110104	Ammonia Removal Facility	CP	41,359,833	0	2016	1.000	41,359,833	41,359,833	Treatment - Ammonia Project
	110105	Eastside Wstwtr Improv Project	CP	29,629,829	0	2016	1.000	29,629,829	29,629,829	Collection & Conveyance
	120108	Bio Solid Process Dryer	CP	7,822,207	0	2016	1.000	7,822,207	7,822,207	Treatment - Sludge
	130103	Blacksnake Crk Strmwtr Sep	CP	8,320,090	0	2016	1.000	8,320,090	8,320,090	Collection & Conveyance
	120105	Replace Grit Removal System	CP	6,568,662	0	2016	1.000	6,568,662	6,568,662	Treatment - Grit Basin
	150111	ROSECRANS LAGOON LINER	CP	96,301	0	2016	1.000	96,301	96,301	Treatment - General
WPC	160107	Brown's Branch Motor Control Center	CP	19,350	0	2016	1.000	19,350	19,350	Treatment - Blower Bldg.
WPC	160108	Hydraulic Model	CP	331,595	0	2016	1.000	331,595	331,595	Admin. & General
SWMTN	60200	SEWER LINES EXISTING	IN	55,569,360	32,306,093	2006	1.376	76,438,742	31,999,917	Collection & Conveyance
SWMTN	70102	SEWER LINES FY07 ACCEPTED SUBD	IN	1,324,937	314,673	2007	1.306	1,730,245	1,319,311	Collection & Conveyance
SWMTN	80128	FY08 Donated Sewers	IN	688,019	146,204	2008	1.240	853,474	672,111	Collection & Conveyance
SWMTN	90124	FY09 Donated Sewers	IN	262,400	49,200	2009	1.168	306,463	249,001	Collection & Conveyance
INFRAS	90122	Greystone Sewers	IN	3,174,610	515,874	2010	1.179	3,743,016	3,134,776	Collection & Conveyance
SWMTN	100202	FY10 Donated Sewers	IN	1,460,200	237,282	2010	1.179	1,721,645	1,441,878	Collection & Conveyance
SWMTN	80123	Riverside Rd Sewer Extension	IN	1,203,908	195,635	2010	1.179	1,419,465	1,188,802	Collection & Conveyance
SWMTN	80122	Woodbine Rd Sewer Extension	IN	96,966	15,757	2010	1.179	114,327	95,749	Collection & Conveyance
STATIONS	80121	Roy's Branch Sewer Separation	IN	1,921,450	211,360	2011	1.138	2,186,356	1,945,856	Collection & Conveyance
SWMTN	110203	FY11 Donated Sewers	IN	127,300	17,504	2011	1.138	144,851	124,934	Collection & Conveyance
SWMTN	120202	2012 Donated Sewers	IN	878,440	98,824	2012	1.088	955,632	848,123	Collection & Conveyance
SWMTN	130203	2013 Donated Sewers	IN	11,120	973	2013	1.049	11,667	10,646	Collection & Conveyance
SWMTN	140201	2014 Donated Sewers	IN	15,800	988	2014	1.047	16,549	15,514	Collection & Conveyance
WPC	160069	Whitehead Separation Conduit Design	IN	416,297	5,204	2016	1.000	416,297	411,093	Collection & Conveyance
GARAGE	960810	MOUNTED TRASH PUMP	OF	15,194	15,194	1996	2.003	30,437	0	Collection & Conveyance
	110076	LabCal Water Info Mgmt System	OF	9,010	9,010	2011	1.138	10,252	0	Laboratory
TECHSERV	140049	Integrity HTML5 Mob GIS Webste	OF	7,500	6,250	2013	1.049	7,869	1,311	Admin. & General
	120103	Accela Management Software	OF	435,022	362,518	2014	1.047	455,632	75,939	Admin. & General
	120109	Springbook Swr Billing Softwre	OF	237,882	198,235	2014	1.047	249,152	41,525	Customer
	140071	Replace Radio & Comm Equipment	OF	145,285	36,321	2014	1.047	152,168	114,126	Treatment - General
	150002	GEO 7X Handheld GPS	OF	10,420	5,210	2014	1.047	10,914	5,457	Admin. & General
WPC	150054	Mayline 20' Conference Table	OF	5,529	1,659	2015	1.011	5,592	3,915	Admin. & General
WPC	160065	Trimble GPS Equipment	OF	11,256	563	2016	1.000	11,256	10,693	Admin. & General
				162,175,771	34,750,529			185,139,867	137,858,546	
		Less Contributed Assets		(3,443,279)				(4,010,280)	(3,362,207)	Contribution - C&C Mains
				158,732,492				181,129,587	134,496,338	

Appendix A-12 Ammonia Project Allocations

		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[L]
			Common to Retail					Common to All					SSJISD	
Line No.	Description	Total Costs	Volume	Capacity	BOD	Suspended Solids	FOG	Volume	Capacity	BOD	Suspended Solids	Ammonia	Pump Station	Basis of Allocation
1	Site Planning	$ 5,742,871	$ -	$ -	$ -	$ -	$ -	$ 916,102	$ 163,353	$ 3,495,736	$ 175,492	$ 992,187	$ -	Ammonia Asset Allocation
2	Construction Administration	$ 2,281,372	$ -	$ -	$ -	$ -	$ -	$ 363,924	$ 64,893	$ 1,388,691	$ 69,715	$ 394,149	$ -	Ammonia Asset Allocation
3	Operations Building Modifications	$ 246,846	$ -	$ -	$ -	$ -	$ -	$ 39,377	$ 7,021	$ 150,257	$ 7,543	$ 42,647	$ -	Ammonia Asset Allocation
3	Roughing Filter Modifications	$ 154,279								$ 154,279				BOD
4	Intermediate Pump Station	$ 399,890							$ 399,890					Common to All Capacity
4	PE Diversion Splitter Box and Meter Vault	$ 241,909							$ 241,909					Common to All Capacity
5	Domestic Aeration Basin Modifications	$ 3,092,980								$ 2,404,573		$ 688,406.86		CTA BOD 78% Ammonia 22%
5	Final Clarifier Splitter Box	$ 190,071								$ 103,134	$ 57,411	$ 29,526		CTA BOD 54% SS 30% Ammonia 16%
6	Pump Station No. 2	$ 1,212,014								$ 657,645	$ 366,091	$ 188,278		CTA BOD 54% SS 30% Ammonia 16%
7	Industrial Splitter Box 1	$ 55,540								$ 30,136	$ 16,776	$ 8,628		CTA BOD 54% SS 30% Ammonia 16%
7	Industrial Aeration Basin	$ 12,402,775								$ 9,642,280		$ 2,760,495		Design BOD 78% Ammonia 22%
8	Blower Building	$ 4,771,532								$ 3,709,529		$ 1,062,004		Design BOD 78% Ammonia 22%
8	Industrial Final Clarifier Splitter Box	$ 118,486						$ 106,637		$ 9,211		$ 2,637		CTA Volume 90% BOD 8% Ammonia 2%
9	Industrial Final Clarifier	$ 5,103,540						$ 4,593,186		$ 396,764		$ 113,590		CTA Volume 90% BOD 8% Ammonia 2%
9	RAS Pump Station No. 1	$ 1,108,338								$ 601,390	$ 334,776	$ 172,172		CTA BOD 54% SS 30% Ammonia 16%
10	DAFT Feed Pump Wet Well	$ 133,297								$ 72,328	$ 40,263	$ 20,707		CTA BOD 54% SS 30% Ammonia 16%
10	Filtrate Equalization Basin	$ 196,243							$ 196,243					Common to All Capacity
11	Belt Filter Press Building	$ 281,404								$ 152,691	$ 84,999	$ 43,714		CTA BOD 54% SS 30% Ammonia 16%
		$ 37,733,390	$ -	$ -	$ -	$ -	$ -	$ 6,019,227	$ 1,073,310	$ 22,968,646	$ 1,153,066	$ 6,519,141	$ -	
	Ammonia Site Planning Allocation		0.00%	0.00%	0.00%	0.00%	0.00%	15.95%	2.84%	60.87%	3.06%	17.28%	0.00%	
	Ammonia Phase I Allocation		0.00%	0.00%	0.00%	0.00%	0.00%	15.95%	2.84%	60.87%	3.06%	17.28%	0.00%	
12	Adjusted Amount	$ 1,700,606	$ -	$ -	$ -	$ -	$ -	$ 271,280	$ 48,373	$ 1,035,174	$ 51,968	$ 293,811	$ -	

Appendix A-13 Construction Work in Progress Allocations

			Common to Retail						Common to All									
Line No.	Description	CWIP	Volume	Capacity	BOD	Suspended Solids	Ammonia	FOG	Volume	Capacity	BOD	Suspended Solids	Ammonia	FOG	SSJISD Pump Station	Septage	Billing	Allocation Basis
1	2015 Contracted Mainline Sewer Repairs	1,879,156		1,879,156														Common to Retail Capacity
2	2016 Contracted Mainline Sewer Repairs	1,704,486		1,704,486														Common to Retail Capacity
3	2017 Contracted Mainline Sewer Repairs	1,135,974		1,135,974														Common to Retail Capacity
4	Bio Solids Dryer	406,804									241,671	113,339	51,795					Appendix A-1 (Secondary Treatment)
5	Blacksnake Creek Stormwater Separation Project	3,745,237		3,745,237														Common to Retail Capacity
6	Charles Street Outfall- FEMA	49,304	752	2,479	1,507	7,987	-	512	3,736	19,265	8,466	2,669	1,518	-	-	412	-	General Treatment
7	CMOM (Capacity Management OperationMaintenance) - Asse	710,910		710,910														Common to Retail Capacity
8	Eastside Wastewater Improvement Project	782,779		782,779														Common to Retail Capacity
9	GPS Equipment	12,367	189	622	378	2,003	-	128	937	4,832	2,123	669	381	-	-	103	-	General Treatment
10	Grit Removal	782,755			35,630	747,125												CTR BOD 5% SS 95%
11	Manhole Inspections	177,150		177,150														Common to Retail Capacity
12	MCC Brown's Branch Pump Station	39,027		39,027														Common to Retail Capacity
13	Northeast Parkway Investigation	59,063		59,063														Common to Retail Capacity
14	Odor Control Parkway A	110,419	1,686	5,551	3,375	17,887	-	1,146	8,368	43,145	18,960	5,976	3,399	-	-	924	-	General Treatment
15	Rehab Existing Secondary Clerifiers	654,068							588,661		53,864		11,542					90% Secondary Volume 10% Secondary
16	Rosecrans Lagoon Liner	38,723	591	1,947	1,183	6,273	-	402	2,935	15,131	6,649	2,096	1,192	-	-	324	-	General Treatment
17	Separated Sewer Hydraulic Model	483,427	7,381	24,305	14,774	78,313	-	5,019	36,636	188,897	83,011	26,165	14,883	-	-	4,043	-	General Treatment
18	Sewer Extension Agreements	22,000		22,000														Common to Retail Capacity
19	SSJISD Flow Metering Structure	182,749													182,749			SSJISD Pump Station
20	TV Van & Vacuum Sewer Cleaning Truck	614,703		614,703														Common to Retail Capacity
21	Update Arial Photography	14,277	218	718	436	2,313	-	148	1,082	5,579	2,452	773	440	-	-	119	-	General Treatment
22	Water Quality Education Program	175,484	2,679	8,823	5,363	28,428	-	1,822	13,299	68,570	30,133	9,498	5,402	-	-	1,468	-	General Treatment
23	Whitehead Pump Station Forcemain Meter Vaults	269,062		269,062														Common to Retail Capacity
24	**Total**	14,049,923	13,496	11,183,991	62,646	890,329	-	9,177	655,655	345,418	447,330	161,184	90,552	-	182,749	7,394	-	
25	**Allocation**	100.00%	0.10%	79.60%	0.40%	6.30%	0.00%	0.10%	4.70%	2.50%	3.20%	1.10%	0.60%	0.00%	1.30%	0.10%	0.00%	

Appendix A-14 Capital Cost Allocation Factors

		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]	[O]	[P]	[Q]
			Common to Retail						Common to All									
Line No.	Description	Total	Volume	Capacity	BOD	Suspended Solids	Ammonia	FOG	Volume	Capacity	BOD	Suspended Solids	Ammonia	FOG	SSJISD	Septage	Billing	Basis of Allocation
	COLLECTION & CONVEYANCE																	
1	Collection and Conveyance Mains	100%		100.0%														Primary Capacity
2	Pumping & Lift Stations	100%		100.0%														Primary Capacity
3	SSJISD Pump Stations	100%													100.0%			SSJISD
	TREATMENT																	
4	Grit Basins	100%				100.0%												Suspended Solids
5	Primary Clarifiers	100%	90.0%		3.0%	5.9%		1.0%										90% Primary Volume and Sludge Based on Appendix A-1 (Primary Only)
6	Other Primary	100%		100.0%														Primary Capacity
7	Pumping	100%		100.0%														Primary Capacity
8	Septage	100%														100.0%		Septage
9	Trickling Filters	100%									100.0%							Secondary Capacity
10	Blowers	100%									82.4%		17.6%					BOD & Ammonia on Appendix A-1
11	Aeration	100%									82.4%		17.6%					BOD & Ammonia on Appendix A-1
12	Secondary Clarifiers	100%							90.0%		8.2%		1.8%					90% Secondary Volume 10% Secondary BOD & SS
13	Other Secondary	100%							30.1%	10.4%	44.6%	7.6%	7.3%	0.0%				Secondary Treatment Plant
14	Sludge Pumping	100%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
15	Aerobic Digesters	100%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
16	Dissolved Air Flotation (DAF)	100%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
17	Sludge Handling	100%			10.3%	20.2%		3.5%			39.2%	18.4%	8.4%					Appendix A-1
18	Outfall	100%								100.0%								Secondary Capacity
19	Meters	100%							100.0%									Secondary Volume
20	Laboratory	100%							100.0%									Secondary Volume
21	General	100%	5.3%	11.8%	2.6%	11.0%	0.0%	0.9%	18.8%	6.5%	27.9%	4.8%	4.6%	0.0%	0.0%	5.9%		Treatment Plant
	SECONDARY EXPANSION																	
22	Secondary Expansion - Secondary Clarifiers	100%							90.0%		8.2%		1.8%					90% Secondary Volume 10% Secondary BOD & SS
	ADMINISTRATIVE																	
23	Admin. & General	100%	4.3%	18.7%	2.1%	9.0%	0.0%	0.7%	19.5%	5.3%	23.2%	3.9%	3.8%	0.0%	0.0%	4.8%	4.5%	Total Treatment Plant
24	Billing Software	100%															100.0%	Billing
	CONTRIBUTIONS																	
25	Secondary Expansion - Secondary Clarifiers	100%							90.0%		8.2%		1.8%					90% Secondary Volume 10% Secondary BOD & SS
26	Collection and Conveyance Mains	100%		100.0%														Primary Capacity
	AMMONIA PROJECT																	
27	Secondary Expansion - Ammonia Project	100%	0.0%	0.0%	0.0%	0.0%		0.0%	16.0%	2.8%	60.9%	3.1%	17.3%		0.0%			Appendix A-12
28	Ammonia Phase I	100%	0.0%	0.0%	0.0%	0.0%		0.0%	16.0%	2.8%	60.9%	3.1%	17.3%		0.0%			Appendix A-12

Appendix A-15 Capital Allocated Costs

Line No.	Description	[A] Total	[B] Common to Retail Volume	[C] Common to Retail Capacity	[D] Common to Retail BOD	[E] Common to Retail Suspended Solids	[F] Common to Retail Ammonia	[G] Common to Retail FOG	[H] Common to All Volume	[I] Common to All Capacity	[J] Common to All BOD	[K] Common to All Suspended Solids	[L] Common to All Ammonia	[M] Common to All FOG	[N] SSJISD	[O] Septage	[P] Billing	[Q] Basis of Allocation
	COLLECTION & CONVEYANCE																	
1	Collection and Conveyance Mains	101,407,358	-	101,407,358	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	Pumping & Lift Stations	1,886,992	-	1,886,992	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	SSJISD Pump Stations	1,689,472	-	-	-	-	-	-	-	-	-	-	-	-	1,689,472	-	-	
4	Subtotal	104,983,822	-	103,294,350	-	-	-	-	-	-	-	-	-	-	1,689,472	-	-	
	TREATMENT																	
5	Grit Basins	6,606,547	-	-	-	6,606,547	-	-	-	-	-	-	-	-	-	-	-	
6	Primary Clarifiers	850,079	765,071	-	25,502	50,155	-	8,501	-	-	-	-	-	-	-	-	-	
7	Other Primary	487,044	-	487,044	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	Pumping	2,320,542	-	2,320,542	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	Septage	269,210	-	-	-	-	-	-	-	-	-	-	-	-	-	269,210	-	
10	Trickling Filters	1,560,260	-	-	-	-	-	-	-	-	1,560,260	-	-	-	-	-	-	
11	Blowers	533,027	-	-	-	-	-	-	-	-	438,963	-	94,064	-	-	-	-	
12	Aeration	744,150	-	-	-	-	-	-	-	-	612,830	-	131,321	-	-	-	-	
13	Secondary Clarifiers	3,449,303	-	-	-	-	-	-	3,104,373	-	284,060	-	60,870	-	-	-	-	
14	Other Secondary	91,344	-	-	-	-	-	-	27,479	9,476	40,720	6,974	6,695	-	-	-	-	
15	Sludge Pumping	626,114	-	-	64,490	126,475	-	21,914	-	-	245,437	115,205	52,594	-	-	-	-	
16	Aerobic Digesters	9,280,847	-	-	955,927	1,874,731	-	324,830	-	-	3,638,092	1,707,676	779,591	-	-	-	-	
17	Dissolved Air Flotation (DAF)	13,646	-	-	1,406	2,757	-	478	-	-	5,349	2,511	1,146	-	-	-	-	
18	Sludge Handling	8,628,769	-	-	888,763	1,743,011	-	302,007	-	-	3,382,477	1,587,693	724,817	-	-	-	-	
19	Outfall	26,093,003	-	-	-	-	-	-	-	26,093,003	-	-	-	-	-	-	-	
20	Meters	31,018	-	-	-	-	-	-	31,018	-	-	-	-	-	-	-	-	
21	Laboratory	1,014,080	-	-	-	-	-	-	1,014,080	-	-	-	-	-	-	-	-	
22	General	5,040,462	266,864	593,030	131,060	553,594	-	44,477	949,095	327,274	1,406,431	240,874	231,248	-	-	296,515	-	
23	Subtotal	67,639,446	1,031,935	3,400,617	2,067,148	10,957,270	-	702,206	5,126,044	26,429,752	11,614,620	3,660,933	2,082,345	-	-	565,725	-	
	SECONDARY EXPANSION																	
24	Secondary Expansion - Secondary Clarifiers	12,449,974	-	-	-	-	-	-	11,204,977	-	1,025,292	-	219,705	-	-	-	-	
25	Subtotal	12,449,974	-	-	-	-	-	-	11,204,977	-	1,025,292	-	219,705	-	-	-	-	
	ADMINISTRATIVE																	
26	Admin. & General	3,165,388	137,117	592,480	67,340	284,442	-	22,853	617,153	168,156	734,487	123,763	121,357	-	-	152,352	143,888	
27	Billing Software	41,525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41,525	
28	Subtotal	3,206,913	137,117	592,480	67,340	284,442	-	22,853	617,153	168,156	734,487	123,763	121,357	-	-	152,352	185,413	
	CONTRIBUTIONS																	
29	Secondary Expansion - Secondary Clarifiers	(12,449,974)	-	-	-	-	-	-	(11,204,977)	-	(1,025,292)	-	(219,705)	-	-	-	-	
30	Collection and Conveyance Mains	(3,362,207)	-	(3,362,207)	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	**CWIP**	14,049,923	13,496	11,183,991	62,646	890,329	-	9,177	655,655	345,418	447,330	161,184	90,552	-	182,749	7,394	-	Appendix A-13
32	Subtotal Existing Plant	186,517,897	1,182,549	115,109,231	2,197,134	12,132,040	-	734,236	6,398,852	26,943,327	12,796,437	3,945,880	2,294,254	-	1,872,221	725,471	185,413	
	AMMONIA PROJECT																	
33	Secondary Expansion - Ammonia Project	41,359,833	-	-	-	-	-	-	6,597,717	1,176,462	25,176,094	1,263,884	7,145,676	-	-	-	-	
34	Ammonia Phase I	1,700,606	-	-	-	-	-	-	271,280	48,373	1,035,174	51,968	293,811	-	-	-	-	
35	Subtotal	43,060,439	-	-	-	-	-	-	6,868,998	1,224,835	26,211,267	1,315,851	7,439,487	-	-	-	-	
36	**TOTAL**	229,578,336	1,182,549	115,109,231	2,197,134	12,132,040	-	734,236	13,267,850	28,168,162	39,007,705	5,261,731	9,733,741	-	1,872,221	725,471	185,413	
37	Existing Plant	100.0%	0.7%	60.3%	1.2%	6.5%	0.0%	0.4%	3.3%	15.4%	7.2%	2.2%	1.3%	0.0%	1.0%	0.4%	0.1%	
38	Plant Including CWIP	100.0%	0.6%	61.7%	1.2%	6.5%	0.0%	0.4%	3.4%	14.4%	6.9%	2.1%	1.2%	0.0%	1.0%	0.4%	0.1%	
																		Basis of Allocation
39	Existing Debt Service	11,515,000	73,059	7,106,464	135,644	748,992	-	45,329	395,044	1,663,392	790,010	243,606	141,640	-	115,585	44,788	11,447	Plant Including CWIP
40	Less: Misc Revenues	1,752,900	11,122	1,081,800	20,649	114,017	-	6,900	60,137	253,214	120,261	37,083	21,561	-	17,595	6,818	1,743	Plant Including CWIP
41	Transfer to Capital Fund	3,754,500	23,821	2,317,084	44,227	244,211	-	14,780	128,805	542,354	257,585	79,428	46,182	-	37,687	14,603	3,732	Plant Including CWIP
42	Proposed Debt	775,800	4,922	478,784	9,139	50,462	-	3,054	26,615	112,068	53,225	16,412	9,543	-	7,787	3,018	771	Plant Including CWIP
43	Net Capital for Rates	17,798,200	112,924	10,984,132	209,658	1,157,682	-	70,063	610,601	2,571,028	1,221,081	376,530	218,926	-	178,654	69,227	17,693	
44	Less: Debt Service for Ammonia Project	2,428,900							296,727	1,249,412	593,395	182,978	106,389					
45	Net Capital for Rates Less: Ammonia Project	15,369,300	112,924	10,984,132	209,658	1,157,682	-	70,063	313,875	1,321,616	627,687	193,552	112,537	-	178,654	69,227	17,693	