

# System Development Fees FY22 and FY23

Billings, MT

March 31, 2021

## Executive Summary

The City of Billings (City) charges a System Development Fee (SDF) designed to recoup, in part, the costs of building and holding excess system capacity to serve future growth. This SDF is based on the value of existing infrastructure and reasonable expectations of costs for future infrastructure. These costs are then apportioned by anticipated demand placed on the system in conjunction with the benefits provided to new development.

Using information provided by the City, AE2S Nexus performed a multi-step analysis for each utility to:

1. Identify the area served by the utility on which to levy an SDF,
2. evaluate the existing system and determine available capacity based on level of service determinates,
3. forecast future demand for system growth,
4. allocate capital costs to either existing or future capacity,
5. calculate the value of the applicable system assets,
6. assign system values equitably based on capacity and standard system service profiles, and
7. ultimately, determine the final SDF charge.

The resulting maximum supportable SDF charges for the Water and Wastewater systems for the FY22-FY23 period from the above analysis are presented below for each service areas identified.

**Table ES-1  
Maximum Supportable SDF Water Charge FY22 – FY23**

Meter Size	Water					
	Residential		Non-Residential		Seasonal Irrigation	
	Current	Updated	Current	Updated	Current	Updated
3/4" or less	\$2,905	\$2,950	\$8,535	\$8,925	\$10,270	\$11,030
1"	\$2,905	\$2,950	\$14,480	\$15,140	\$17,410	\$18,705
1 1/2"	\$2,905	\$2,950	\$28,945	\$30,270	\$34,830	\$37,415
2"	\$2,905	\$2,950	\$46,320	\$48,435	\$55,735	\$59,875
3"	\$2,905	\$2,950	\$92,640	\$96,875	\$111,430	\$119,720
4"	\$2,905	\$2,950	\$144,755	\$151,370	\$174,115	\$187,075
<b>With 4% Administration Charge</b>						

**Table ES-2  
Maximum Supportable SDF Wastewater Charge FY22 – FY23**

<b>Wastewater</b>				
<b>Meter Size</b>	<b>City Service Area</b>		<b>Lockwood Service Area</b>	
	Current	Updated	Current	Updated
3/4" or less	\$2,630	\$3,120	\$1,370	\$1,430
1"	\$8,075	\$9,575	\$4,210	\$4,385
1 1/2"	\$23,440	\$27,795	\$12,230	\$12,740
2"	\$40,465	\$47,985	\$21,110	\$21,990
3"	\$104,980	\$124,485	\$54,770	\$57,050
4"	\$245,775	\$291,435	\$128,230	\$133,570
<b>With 4% Administration Charge</b>				

## 1.0 Introduction

The City of Billings, Montana (City) retained AE2S Nexus to conduct a water and wastewater system utility rate study to include an evaluation and update to the System Development Fees (SDF) charged by the City for new connections. This analysis evaluated and updated the SDF to ensure the revised SDF continues to be equitable and proportionate to benefits received based on the City's existing assets, planned infrastructure, and changes in usage.

The City provides water and wastewater service to nearly 35,000 retail and wholesale customers throughout the region. Access to water and wastewater service is a critical factor for ongoing development and growth within the community and the region. Cities generally build and hold excess capacity within their treatment systems so they have the ability to serve new residents and businesses as they look to build and grow within their community. The City of Billings is no exception and takes proactive steps to have capacity ready for new connections. Building and holding this excess capacity comes with a cost that is borne by existing customers of the system. To recoup a portion of these costs, the City has historically charged an SDF to new connections based on the additional service capacity required to serve that new connection with water or wastewater service.

An SDF is a charge directly tied to the cost of building excess capacity to serve new growth. This direct linkage is important to the legal basis for such fees and is called the rational nexus. The three major components to the rational nexus test are 1) the connection between the need for a facility and the development being charged, 2) a demonstrable benefit to the new growth, and 3) that the charge is proportionate to the benefit received. This analysis is designed to demonstrate compliance with the rational nexus as well as all other requirements under Montana law.

Impact Fees (or SDFs as in the case of Billings) are developed based on the requirements set forth in Title 7, Chapter 6, Part 16 of the Montana Code. Per subsection 7, an impact fee must meet the following requirements:

- “The amount of the impact fee must be reasonably related to and reasonably attributable to the development’s share of the cost of infrastructure improvements made necessary by the new development.
- The impact fees imposed may not exceed a proportionate share of the costs incurred or to be incurred by the governmental entity in accommodating the development. The following factors must be considered in determining a proportionate share of public facilities capital improvements costs:
  - the need for public facilities capital improvements required to serve new development; and
  - consideration of payments for system improvements reasonably anticipated to be made by or as a result of development in the form of user fees, debt service payments, taxes, and other available sources of funding the system improvements.

- Costs for correction of existing deficiencies in a public facility may not be included in the impact fee.
- New development may not be held to a higher level of service than existing users unless there is a mechanism in place for the existing users to make improvements to the existing system to match the higher level of service.
- Impact fees may not include expenses for operations and maintenance of the facility.”

In order to ensure the analysis does meet all of Montana’s legal requirements for impact fees, the following basic outline was used to calculate the water and wastewater system development charges:

1. Identify service area;
2. Evaluate existing facility conditions;
3. Forecast growth-related demands;
4. Determine capital improvements needed to serve both existing and future capacity;
5. Calculate value of existing assets and capital improvements;
6. Determine unit value for capacity;
7. Establish level of service standards for each user class; and
8. Assign the proportionate share of costs based on established level of service.

The specifics of how this outline was applied to each system is described in more detail within the individual system analyses described herein. The final SDF arrived at through this process is a combination of the value of existing system assets, credited for the component of debt and equity in the system, along with the value of planned improvements that benefit growth.

## **2.0 Water System Development Fee**

### **1. Service Area**

While the City of Billings’ water system is designed with a number of zones within the system itself, the service area of the system as a whole is considered to be the entire City area (including areas to be annexed with planned provision for water service) and is not divided down to the pressure zones. All new customers to the City’s system are included in this service area.

### **2. Existing Facility Conditions**

Existing water assets are currently estimated at 86.2 percent capacity. The available capacity was calculated based on the peak day usage for the water treatment plant from 2009 through 2020. As the capacity used can fluctuate in any given year due to a number of factors, historic peak day usage was used to represent the maximum amount of capacity needed to serve the user base. The resultant peak capacity utilization is 51.7 million gallon per day output from fiscal year 2012. All other facility conditions are outlined in the most recent facility plan on file with the City.

### 3. Growth-Related Demands

Growth-related demands are forecast based on the 2017 Integrated Water Plan adjusted for growth realized since the adoption of the facility plan. As a result, the current growth estimates anticipate full utilization of current capacity by 2029.

### 4. Capital Improvements

The City maintains an extensive capital improvements plan (CIP) to identify the investments needed to both expand the water system as well as increase the capacity to serve growth over a 10-year period. The analysis evaluated this CIP in conjunction with City staff to determine which projects contribute to expanding system capacity and to what level those projects contribute to system expansion. Projects designed to increase the overall treatment capacity, the trunk transmission system, and improve operations at the plant in a way that still benefits excess capacity were included and assigned a value applicable to growth to weight the overall cost of the project. The overall SDF charge is calculated to coincide with this same 10-year CIP planning period. The CIP used in the analysis is included in Appendix A.

### 5. Facility Valuations

#### *Future Facilities*

The CIP identifies nearly \$251 million in capital improvements from FY21 – FY31, including \$22.8 million in construction work in progress in FY21. The facility determination and growth percentages identified during the CIP process were used to adjust the overall CIP valuation and ensure that it accounts solely for projects that benefit future connections. This adjustment for growth results in approximately \$158,874,946 million in growth-related capital projects over the time horizon.

#### *Existing Facilities*

The existing system value is based on the Replacement Cost New less Depreciation (RCNLD) for all applicable assets. The starting point for this calculation is the City's existing listing of all current assets for the system. The process then reviews the existing asset information listing and excludes all assets that were classified as contributed capital, i.e. not paid for with ratepayer funds. Once the asset list was defined, the original cost was adjusted to 2021 dollars using the *Engineering News Record Construction Cost Index (CCI)* for Denver to determine the replacement cost new of the assets. Accumulated depreciation percentage was then netted off the replacement cost new to identify the final RCNLD. For the existing water system value, this calculation resulted in an applicable existing water system value of \$172,523,377.

#### *Cash Equity*

The third piece of identifying the overall facility valuation is accounting for the value of cash that ratepayers have contributed to the system over the years, the outstanding debt on existing assets, and the SDF's currently available to buy-down future assets. Cash values are estimated

based on current utility budgeting data and cash-flow trends through the end of FY21. Projected cash on hand is equal to \$28,420,496. Both the value of existing debt and the outstanding SDF fund balance are then netted off the value of cash on hand to arrive at the cash equity value. Outstanding debt is calculated to be \$22,085,000 based on current debt issuances and FY21 principal payments. SDF values are set at \$0 based on budgeted expenditures. Total cash equity portion is \$6,335,496.

## 6. Determine unit value for capacity

To arrive at a single unit value for capacity, the analysis looks at existing facilities (less cash equity) and future facilities separately and then combines them into a single unit value. The total treatment capacity was used as the capacity basis for existing system and is set at 60 MGD. The value for planned capital improvements is divided by the currently available capacity of 8.3 MGD plus the new capacity additions in the CIP of 20 MGD to determine that unit value. Facility valuations are divided by these unit values to calculate the unit capacity values on a gallon per day basis. Table 2-1 provides the resulting unit capacity values.

**Table 2-1**  
**Water Unit Capacity Values**

Component	Facility Value	Capacity	Value*
<b>Existing Capital</b>	\$172,523,377	60 MGD	\$2.77 / gpd
<b>Cash Equity</b>	\$6,335,496	60 MGD	\$0.11 / gpd
<b>Planned Capital</b>	\$158,874,946	28.3 MGD	\$5.61 / gpd
		<b>Total</b>	\$8.49 / gpd
<i>*Values rounded to the nearest whole cent</i>			

## 7. Level of Service Standards

Level of service standards are identified for three separate user classes: residential, non-residential, and seasonal irrigation. The overall level of service is determined by the demands placed on the system from each user class. These various user classes have dramatically different usage profiles and as such are separated accordingly. To determine the overall demand from each user class, recent historical usage from 2010 through 2020 was evaluated. Since many factors contribute to the variation in usage of system capacity from year to year, the peak annual average usage from this data set (FY 2013) was selected for inclusion to the analysis to represent capacity utilization. Table 2-2 outlines identified level of service standards for the user classes.

**Table 2-2**  
**Water Level of Service Standards**

User Class	Usage (gpd)	Standard Meter Size
<b>Residential</b>	335	¾"
<b>Non-Residential</b>	1,715	1"
<b>Seasonal Irrigation</b>	6,782	2"

## 8. Proportionate Share of Costs

In order to fairly assign a proportionate share of costs to the various user classes, the level of service standard set by those classes was multiplied by the unit cost per gpd capacity to arrive at a standard SDF per user class. As the standard units associated with each class are provided in a specific meter size, industry standard equivalent meter factors are applied to the standard SDF to adjust these costs into charges across the variety of meter sizes that those user classes could have. In the case of residential accounts, only ¾” meters are used in the City’s system so only one fee is provided. By breaking down the system values into the unit cost and assigning it proportionately based water service standards, it provides a total cost associated with the proportionate share of growth and growth-related costs by new users. This calculated total cost was rounded down to the nearest \$5 equivalent to ensure that the recommended maximum supportable impact fee to ensure the final adopted impact fee does not exceed the maximum supportable. After the proportionate share of costs were calculated, a 4.0 percent administrative charge was added to reflect the ongoing costs associated with managing an SDF program. The resulting final SDF charges are outlined in Table 2-3.

**Table 2-3  
Maximum Supportable SDF Water Charge FY22– FY23**

Meter Size	Water					
	Residential		Non-Residential		Seasonal Irrigation	
	Current	Updated	Current	Updated	Current	Updated
¾" or less	\$2,905	\$2,950	\$8,535	\$8,925	\$10,270	\$11,030
1"	\$2,905	\$2,950	\$14,480	\$15,140	\$17,410	\$18,705
1 ½"	\$2,905	\$2,950	\$28,945	\$30,270	\$34,830	\$37,415
2"	\$2,905	\$2,950	\$46,320	\$48,435	\$55,735	\$59,875
3"	\$2,905	\$2,950	\$92,640	\$96,875	\$111,430	\$119,720
4"	\$2,905	\$2,950	\$144,755	\$151,370	\$174,115	\$187,075

In instances where the meter size needed to service a new connection is greater than 4” or when the unique characteristics of a larger water user may require, the SDF should be calculated by multiplying the anticipated average daily demand of the user by the unit rate of \$8.49 per gallon. An additional 4.0 percent administrative fee should then be added to the resulting SDF. In instances where the characteristics of the user may result in a change in capital use patterns, a special study may be required to calculate the charge.

## **3.0 Wastewater System Development Fee**

### **1. Service Area**

The wastewater system has two separate service areas resulting in two distinct SDF calculations. These service areas are: the City of Billings and Lockwood Water & Sewer District. Lockwood Water & Sewer District connects at the plant and does not use any of the City's collection system, necessitating modifications to the baseline SDF for this benefit of use of a smaller overall asset base.

### **2. Existing Facility Conditions**

The capacity of the wastewater system is currently estimated at 34 MGD based on average day treatment capacity. The available capacity was calculated based on the average day usage for the wastewater treatment plant from 2009 through 2020. As the capacity used can fluctuate in any given year due to a number of factors, historic plant influent average day recordings were used to represent the maximum amount of capacity needed to serve the in-place user base. For these reasons, a maximum average day usage of 24.4 million gallon per day of plant influent from FY19 was incorporated into the analysis. This existing system capacity is applicable to both service areas. All other facility conditions are outlined in the most recent facility plan on file with the City.

### **3. Growth-Related Demands**

The City evaluates the existing plant capacity and the demands placed on it by new connections on an ongoing basis. The most recent comprehensive engineering study on current treatment facilities, including an evaluation of in-place capacity and the demands of growth, was the 2016 study (updated January 2017) done in conjunction with the ongoing nutrient upgrade, expansion, and plant improvement work. The overall capacity and the demands growth continues to place on available capacity is derived from this report.

### **4. Capital Improvements**

The City maintains an extensive capital improvements plan (CIP) to identify the investments needed to both expand the system treatment and collection system as well as increase the capacity to serve growth over a 10-year period. The analysis evaluated the currently adopted CIP in conjunction with City staff to determine which projects contribute to expanding system capacity and to what level those projects contribute to system expansion. Particular care is taken to adjust out projects that do not affect overall system capacity such as the local collection system. The SDF charge is calculated to coincide with this same 10-year CIP planning period.

## 5. Facility Valuations

### *Future Facilities*

The CIP identifies over \$189 million in capital improvements from FY22 – FY31, including \$16.9 million in construction work in progress in FY21. As part of the process to identify which projects expand system capacity, all small line collection system projects are removed from the system growth value calculation due to assessment policy. The remaining project costs are weighted based on the proportion of the project benefiting growth-related capacity as estimated at the time of improvement (based on growth-related demand calculations). This results in \$30,739,253 million in growth-related capital projects identified for the City service area. Further reductions are necessary for the Lockwood service area since it does not share in any of the large, trunk collection infrastructure. While there is a reduction, the majority of the City's investment for growth throughout the system is targeting capacity at the plant. As a result, these reductions reflect the limited use of the overall system by Lockwood and are equal to growth related capital of \$18,245,055 million for Lockwood.

### *Existing Facilities*

The existing system value is based on the Replacement Cost New less Depreciation (RCNLD) for all applicable assets. The starting point for this calculation is the City's existing listing of all current assets for the system. The process then reviews the existing asset information listing and excludes all assets that were classified as contributed capital, i.e. not paid for with ratepayer funds. Once the asset list was defined, the original cost was adjusted to 2021 dollars using the *Engineering News Record Construction Cost Index (CCI)* for Denver to determine the replacement cost new of the assets. Accumulated depreciation percentage was then netted off the replacement cost new to identify the final RCNLD. For the existing water system value, this calculation resulted in an applicable existing water system value of \$181,954,139. Further reductions are necessary to reflect the limited use of the system by the second service area, Lockwood. These reductions result in an existing system value of \$85,084,621 for Lockwood.

### *Cash Equity*

The third piece of identifying the overall facility valuation is accounting for the value of cash that ratepayers have contributed to the system over the years, the outstanding debt on existing assets, and the SDF's currently available to buy-down future assets. Cash values are estimated based on current utility budgeting data and cash-flow trends through the end of FY21. Projected cash on hand is equal to \$22,668,084. Both the value of existing debt and the outstanding SDF fund balance are then netted off the value of cash on hand to arrive at the cash equity value. Outstanding debt is calculated to be \$61,933,000 based on current debt issuances and FY21 principal payments. SDF values are set at \$0 based on FY21 collections to date as they exceed budgeted amounts. Total cash equity portion is \$(39,264,916). Lockwood's adjustment nets off items not applicable to the SDF and results in a total cash equity of \$(34,261,465).

## 6. Determine unit value for capacity

To arrive at a single unit value for capacity, the analysis looks at existing facilities (less cash equity) and future facilities separately and then combines them into a single unit value. In this instance, the total treatment capacity was used as our capacity factor for existing system and is set at 34 MGD. At current average day flows of 24.4 MGD, the capacity value for existing system components is based on an available 9.6 MGD. The capacity value for planned capital is based on the currently available capacity for growth plus direct new treatment capacity added by capital improvements of 0 MGD. The resulting available capacity value is 9.6 MGD for planned capital improvements. Tables 3-1 and 3-2 provide the resulting unit capacity values. Both service areas share in the capacity equally without any adjustments.

**Table 3-1  
Wastewater Unit Capacity Values (City Service Area)**

Component	Facility Value	Capacity	Value for City Service Area*
<b>Existing Capital</b>	\$181,954,139	34 MGD	\$5.35 / gpd
<b>Cash Equity</b>	\$(39,264,916)	34 MGD	\$(1.15) / gpd
<b>Planned Capital</b>	\$30,739,253	9.6 MGD	\$3.20 / gpd
		<b>Total</b>	<b>\$7.40 / gpd</b>
<i>*Values rounded to the nearest whole cent</i>			

**Table 3-2  
Wastewater Unit Capacity Values (Lockwood Service Area)**

Component	Facility Value	Capacity	Value for Lockwood Service Area*
<b>Existing Capital</b>	\$85,084,621	34 MGD	\$2.50 / gpd
<b>Cash Equity</b>	\$(34,261,465)	34 MGD	\$(1.01) / gpd
<b>Planned Capital</b>	\$18,254,055	9.6 MGD	\$1.90 / gpd
		<b>Total</b>	<b>\$3.39 / gpd</b>
<i>*Values rounded to the nearest whole cent</i>			

## 7. Level of Service Standards

One level of service standard has been identified for the wastewater system. The overall level of service is determined by the demands placed on the system by the contributing users. To determine the overall demand, total equivalent dwelling units (EDUs) contributing to the system were analyzed. Total capacity and EDUs were used to identify an average gallon capacity use per EDU per day. This established a level of service of 406 gallons per day per EDU.

## 8. Proportionate Share of Costs

Proportionate share of costs were determined by taking the calculated unit value by the level of service standard. As the standard units associated with the level of service standard are provided in an EDU meter size of ¾”, industry standard equivalent meter factors are applied to translate these costs into charges for the appropriate meter size. This provides a total cost associated with the proportionate share of growth and growth-related costs by new users. The total cost is rounded down to the nearest \$5 to ensure the actual charge is at or just less than the maximum supportable. After the proportionate share of costs were determined, a 4.0 percent administrative charge was added, under the state maximum allowance of 5 percent. The resulting final SDF charges are outlined in the Table 3-3.

**Table 3-3  
Maximum Supportable SDF Wastewater Charge FY22– FY23**

Meter Size	Wastewater			
	City Service Area		Lockwood Service Area	
	Current	Updated	Current	Updated
¾" or less	\$2,630	\$3,120	\$1,370	\$1,430
1"	\$8,075	\$9,575	\$4,210	\$4,385
1 ½"	\$23,440	\$27,795	\$12,230	\$12,740
2"	\$40,465	\$47,985	\$21,110	\$21,990
3"	\$104,980	\$124,485	\$54,770	\$57,050
4"	\$245,775	\$291,435	\$128,230	\$133,570

In instances where the meter size needed to service a new connection within the City service area is greater than 4” or when the unique characteristics of a larger wastewater user may require a more in-depth review, the SDF should be calculated by identifying the key usage characteristics of flow, Biochemical Oxygen Demand (BOD) loading, Total Suspended Solids (TSS), and Total Kjeldahl Nitrogen (TKN) loading and using the formula below.

$$(\$7.40 * \text{Flow} * (0.5234 + (\text{BOD} * 0.1782/200) + (\text{TSS} * 0.1847/200) + (\text{TKN} * 0.1136/55))) * 1.04$$

Where \$7.40 is the total unit cost identified through the analysis, 0.5234 is the weighted capital allocation (across all assets) from the cost of service model applicable to flow, 0.1782 is the weighted capital allocation applicable to BOD, 0.1847 is the weighted capital allocation to TSS, 0.1136 is the weighted capital allocation applicable to TKN, and 1.04 represents the administrative charge. These weighted capital allocations are available from the 2022 capital allocations in the retail rate model.

In instances where the user requesting connection to the system presents a demand that may result in different allocation factors used above, a special study may be required to calculate the charge.

## 4.0 Summary

The SDFs calculated in this analysis are based on the value of the in-place assets and the reasonably expected costs of future capital to expand and improve the City’s water and wastewater systems. The fees calculated are based on the proportionate share of the capital costs tied to the demand placed by new development. Tables 4-1 and 4-2 present the SDF fee schedule in its entirety for the water system and the wastewater service areas, respectively.

**Table 4-1  
Maximum Supportable SDF Water Charge FY22– FY23**

Water						
Meter Size	Residential		Non-Residential		Seasonal Irrigation	
	Current	Updated	Current	Updated	Current	Updated
3/4" or less	\$2,905	\$2,950	\$8,535	\$8,925	\$10,270	\$11,030
1"	\$2,905	\$2,950	\$14,480	\$15,140	\$17,410	\$18,705
1 1/2"	\$2,905	\$2,950	\$28,945	\$30,270	\$34,830	\$37,415
2"	\$2,905	\$2,950	\$46,320	\$48,435	\$55,735	\$59,875
3"	\$2,905	\$2,950	\$92,640	\$96,875	\$111,430	\$119,720
4"	\$2,905	\$2,950	\$144,755	\$151,370	\$174,115	\$187,075

**Table 4-2  
Maximum Supportable SDF Wastewater Charge FY22– FY23**

Wastewater				
Meter Size	City Service Area		Lockwood Service Area	
	Current	Updated	Current	Updated
3/4" or less	\$2,630	\$3,120	\$1,370	\$1,430
1"	\$8,075	\$9,575	\$4,210	\$4,385
1 1/2"	\$23,440	\$27,795	\$12,230	\$12,740
2"	\$40,465	\$47,985	\$21,110	\$21,990
3"	\$104,980	\$124,485	\$54,770	\$57,050
4"	\$245,775	\$291,435	\$128,230	\$133,570

# Appendix A

## Water Capital Improvement Plan

D? Project	Percent Growth												Total	Adj. Percent	Growth
		Current FY 21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	Cost	Growth	Total
Water Treatment Plant Valve Replacement	0%	231,000											231,000	14%	31,955
Voelker Pump Station Improvements	0%	89,000											89,000	14%	12,312
Leavens Reservoir Expansion & Zone 1 Improvements	50%	1,902,000											1,902,000	50%	951,000
Water Master Plan Update	50%	52,500											52,500	50%	26,250
2019 Water Main Replacement Project	0%	462,000											462,000	0%	0
West End Reservoir (complete in FY 24)	100%	4,616,000											4,616,000	100%	4,616,000
Belknap Office Remodel	0%	583,000											583,000	14%	80,648
WTP Drought & Flood Control Plan	0%	19,500											19,500	14%	2,698
King Ave E Main Replacement (Orchard to Jackson)	0%	275,000											275,000	0%	0
WTP High Service H2-2 Pump Replacement	0%	905,000											905,000	14%	125,192
West End Water Treatment Plant Project (complete in FY 24)	100%	4,868,500											4,868,500	100%	4,868,500
Irrigation Pump Centennial Park	50%	8,500											8,500	50%	4,250
Walter Pump Station Addition	100%	567,500											567,500	100%	567,500
Hallowell Lane Water Main Replacement	0%	457,000											457,000	0%	0
Lead Service Replacement Project	0%	77,500											77,500	0%	0
Walter Pump Station Generator	0%	325,000											325,000	14%	44,958
Rip Rap	0%	200,000											200,000	14%	27,667
Lead Services	0%	750,000											750,000	0%	0
Compensation Agreements	0%	300,000											300,000	0%	0
Electrical	0%	500,000											500,000	14%	69,167
Equipment Replacements	0%	343,572											343,572	14%	47,527
Water- West End Distribution	100%	500,000	5,000,000										5,500,000	0%	0
Water Main Replacements	0%	4,809,148	4,400,000	3,800,000	5,300,000	5,800,000	6,400,000	7,000,000	7,700,000	8,500,000	8,500,000	8,500,000	70,709,148	0%	0
Water - West End Intake, Pump Station, and Pipeline	100%		21,000,000										21,000,000	100%	21,000,000
Water - West End Treatment Plant	100%		57,000,000										57,000,000	100%	57,000,000
Water - South Frontage Road Loop	0%		50,000										50,000	0%	0
Water Compensation Agreements	0%		300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	3,000,000	0%	0
Water Treatment Plant Electrical Improvements	0%		600,000	400,000	400,000	150,000	200,000	400,000	200,000	300,000	150,000	200,000	3,000,000	19%	562,219
Equipment Replacements	0%		283,618	200,000	300,000	250,000	400,000	300,000	600,000	700,000	750,000	200,000	3,983,618	22%	892,642
Water - Staples Reservoir	100%		400,000					3,600,000					4,000,000	100%	4,000,000
Water Lead Service Replacement Project	0%	-	750,000	500,000	700,000	-	-	-	-	-	-	-	1,950,000	0%	0
Water - West End Reservoir/City Lakes	100%	-	-	34,000,000									34,000,000	100%	34,000,000
Alkali Creek Main Extension	0%		1,155,000										1,155,000	0%	0
Water - Logan Reservoir Recoating/Exterior Painting	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water - Fox Reservoir #1 Replacement	50%	-	-	-	-	-	-	-	-	-	400,000	3,000,000	3,400,000	50%	1,700,000
D&C Heated Shop and Breakroom Addition	0%	-	-	-	-	500,000	-	-	-	-	-	-	500,000	0%	0
Water - Storage Improvements (Zone 1)	100%			600,000	3,000,000								3,600,000	100%	3,600,000
Neibauer Water Lines	0%	-	-	-	-	-	-	-	-	-	-	-	-	0%	0
Highway 3 Water Lines	0%	-	-	-	-	-	-	-	-	-	-	-	-	0%	0
Demo Staples Standpipe	0%							200,000					200,000	29%	57,608
High Service Pump Station Improvements	25%			150,000	1,000,000								1,150,000	25%	287,500
Intake 2 Screening Improvements	100%				1,500,000								1,500,000	100%	1,500,000
Leavens Improvements	0%											1,200,000	1,200,000	30%	362,250
Recoat Logan Reservoir	0%								500,000				500,000	27%	137,104
Zone 4W Additional Storage	100%						700,000	6,000,000					6,700,000	100%	13,400,000
Zone 6 Reservoir and redundant line	50%			100,000	800,000	8,000,000							8,900,000	50%	8,900,000
<b>Total</b>		<b>22,841,720</b>	<b>90,938,618</b>	<b>40,050,000</b>	<b>13,300,000</b>	<b>15,000,000</b>	<b>9,200,000</b>	<b>17,800,000</b>	<b>9,300,000</b>	<b>9,800,000</b>	<b>10,100,000</b>	<b>12,200,000</b>	<b>250,530,338</b>		<b>158,874,946</b>

## Wastewater Capital Improvement Plan

C? IE	Project	Percent Growth	Percent										Adj.				
			Current FY 21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	10-Yr Total	Percent Growth	Growth Total	Lockwood Total
1	AFT Building and Equipment Upgrades	0%	59,879											59,879	28%	16,907	16,907
1	Hydrogen Sulfide Mitigation	0%	62,890											62,890	28%	17,757	17,757
1	Service Center Reconstruction	20%	700,161											700,161	20%	140,032	140,032
1	Influent Lift Station	20%	5,939,064											5,939,064	20%	1,187,813	1,187,813
1	UV Third Channel	0%	37,540											37,540	28%	10,600	10,600
1	Headworks Screen	0%	7,449											7,449	28%	2,103	2,103
1	Headworks Grit Unit	0%	8,280											8,280	28%	2,338	2,338
0	2020 Sewer Interceptor	0%	3,501,421											3,501,421	28%	988,637	0
1	Wastewater Process Equipment Installation	0%	1,007,420											1,007,420	28%	284,448	284,448
0	Lloyd Mangrum Lift Station	0%	742,001											742,001	28%	209,506	0
1	Wastewater Master Plan	100%	303,023											303,023	100%	303,023	303,023
1	WRF Solids Handling Modifications	0%	329,847											329,847	28%	93,133	93,133
1	WRF Digester Gas Replacement	0%	71,296											71,296	28%	20,131	20,131
1	WWTP Nutrient Improvement Project	0%	1,068,990											1,068,990	28%	301,832	301,832
1	15KV Boxcar	0%	458,765											458,765	28%	129,534	129,534
1	Replace Equipment	0%	947,715											947,715	28%	267,590	267,590
0	CCTV Support for WWMP	0%	42,847											42,847	28%	12,098	0
1	Wastewater Treatment Plant Drying Beds	50%	300,000											300,000	50%	150,000	150,000
1	Wastewater Treatment Plant Electrical	50%	300,000											300,000	50%	150,000	150,000
1	Wastewater Secondary Pump Station Motors	0%	135,000											135,000	28%	38,118	38,118
0	Wastewater Compensation Agreements	0%	300,000											300,000	0%	0	0
1	Nutrient Recovery (WAS Dewatering for Compost)	50%	630,549	4,000,000										4,630,549	50%	2,315,275	2,315,275
0	2020 Sewer Interceptor	0%		4,400,000										4,400,000	26%	1,129,412	0
0	Wastewater Main Replacements	0%		4,450,000	4,800,000	5,300,000	5,800,000	6,400,000	5,000,000	7,700,000	8,500,000	8,500,000	8,500,000	64,950,000	0%	0	0
0	Inflow and Infiltration Mitigation Projects	0%			750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	6,750,000	0%	0	0
1	Wastewater - Replace Heat Exchangers #1, 2, and 3	0%		500,000										500,000	26%	128,342	128,342
0	Wastewater - Sahara Sands Lift Station Rehabilitation	0%		150,000										150,000	26%	38,503	0
1	Utilities Service Center Reconstruction	20%		100,000	700,000									800,000	20%	160,000	160,000
1	Wastewater FOG Receiving Station	0%		200,000	1,800,000									2,000,000	26%	513,369	513,369
1	Wastewater Treatment Plant Campus Electrical	0%		300,000	500,000									800,000	26%	205,348	205,348
0	Wastewater Compensation Agreements	0%		300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	3,000,000	0%	0	0
1	Equipment Replacements	0%		119,103	300,000	200,000	400,000	300,000	350,000	600,000	300,000	200,000	800,000	3,569,103	14%	508,005	508,005
0	Alkali Creek Road Sewer Extension	0%		2,000,000										2,000,000	26%	513,369	0
0	Hesper Road Collector Sewer Extension (Shiloh to 48th)	100%			3,000,000									3,000,000	100%	3,000,000	0
1	Wastewater Plant Acetate Feed System	50%			500,000									500,000	50%	250,000	250,000
1	Hydrogen Sulfide Mitigation (Phase 2 and 3)	0%			500,000	500,000								1,000,000	24%	243,850	243,850
0	King Avenue Collector Sewer bypass to Monad	50%				3,000,000								3,000,000	50%	1,500,000	0
1	Wastewater Reclamation Facility Improvements	0%				6,000,000		54,000,000						60,000,000	16%	9,702,674	9,702,674
0	Central Avenue Collector Sewer Extension (to 58th)	100%					5,000,000							5,000,000	100%	5,000,000	0
1	Wastewater Biogas Recovery System	0%					200,000	1,000,000						1,200,000	18%	220,749	220,749
0	D&C Heated Shop and Breakroom Addition	0%					500,000							500,000	21%	102,674	0
1	4th UV Disinfection Treatment Unit	100%							850,000					850,000	100%	850,000	850,000
1	Replace Digester Gas Compressors	0%								250,000				250,000	13%	32,086	32,086
0	Sewer Upgrades to Match City Expansion Plans	100%									4,000,000			4,000,000	0%	0	0
	<b>Total</b>		<b>16,954,137</b>	<b>16,519,103</b>	<b>13,150,000</b>	<b>16,050,000</b>	<b>12,950,000</b>	<b>8,750,000</b>	<b>61,250,000</b>	<b>9,600,000</b>	<b>13,850,000</b>	<b>9,750,000</b>	<b>10,350,000</b>	<b>189,173,240</b>		<b>30,739,253</b>	<b>18,245,055</b>