



---

# MEMORANDUM

---

Date: May 2, 2018

To: The Honorable Chairman and Members  
Pima County Board of Supervisors

From: C.H. Huckelberry  
County Administrator

A handwritten signature in black ink, appearing to be "CHH", is written over the printed name "C.H. Huckelberry".

Re: **Regional Wastewater Reclamation Enterprise Fund 2018 Financial Plan**

Attached is the 2018 Financial Plan for the Regional Wastewater Reclamation Enterprise Fund. The Regional Wastewater Reclamation Advisory Committee will forward this report to the Board of Supervisors in the near future. I support their report.

The report documents the financial status of the Regional Wastewater Reclamation Enterprise Fund and confirms fee increases are unlikely due to our prepayment of debt issuances with available cash reserves.

CHH/anc

Attachment

c: Tom Burke, Deputy County Administrator for Administration  
Keith Dommer, Director, Finance and Risk Management  
Robert Johnson, Deputy Director, Finance and Risk Management  
Jackson Jenkins, Director, Regional Wastewater Reclamation



## **2018 Financial Plan**

### **Pima County**

#### **Regional Wastewater Reclamation Enterprise Fund**

*Prepared by  
Pima County Finance and Risk Management Department  
April 2018*

# 2018 Financial Plan

## Pima County Regional Wastewater Reclamation Enterprise Fund

EXECUTIVE SUMMARY .....	1
INTRODUCTION .....	2
KEY ASSUMPTIONS .....	2
METHODOLOGY.....	2
REVENUES .....	3
Fees .....	3
Declining Volume Usage .....	3
Total Revenues.....	4
CAPITAL IMPROVEMENT PROGRAM.....	5
OPERATING AND MAINTENANCE EXPENSES .....	6
SEWER REVENUE DEBT FINANCING .....	7
DEBT SERVICE PAYMENTS .....	8
CASH RESERVES AND CASH BALANCES .....	9
1.    Emergency Reserve Fund .....	9
2.    Operating Reserve Fund.....	10
3.    Debt Service Reserve Fund .....	10
4.    Bond Proceeds.....	10
RATING AGENCY DEBT SERVICE RATIO .....	10
EXPENDITURE LIMITATION .....	11
BOND RATING AGENCIES .....	12
RECOMMENDATIONS.....	12
LIST OF APPENDICES .....	14
Appendix A – Key Assumptions used for the 2018 Financial Plan.....	15
Appendix B – Rate Workbook.....	16
Appendix C – Summary of Planned Capital Improvement Projects as of April 2018.....	17
Appendix D – Cash Position Assuming the Prepayment of \$107.4 Million.....	19
Appendix E – Debt Service Ratio Calculations .....	20

## Executive Summary

### **BACKGROUND**

On an annual basis, Pima County reviews the financial information for the sanitary sewer services provided by its Regional Wastewater Reclamation Department. The focus of the review is to determine the optimal sewer rates needed to ensure that the County has sufficient revenues to meet all operating and maintenance expenses, debt service payments, required reserves, and to maintain an adequate debt service ratio to obtain favorable bond ratings. This enables the County to continue to issue debt for the anticipated improvements in the Capital Improvement Program.

### **RECOMMENDATIONS**

Based on this review, the Finance and Risk Management Department is recommending:

1. Issuing \$155 million of new sewer revenue obligations to fund future capital improvement projects as follows:
  - a. \$45 million in Fiscal Year 2018-19,
  - b. \$40 million in Fiscal Year 2019-20,
  - c. \$35 million in Fiscal Year 2020-21, and
  - d. \$35 million in Fiscal Year 2021-22.
  
2. Using unrestricted cash to prepay debt as follows:
  - a. \$16.6 million in Fiscal Year 2017-18,
  - b. \$12.4 million in Fiscal Year 2018-19,
  - c. \$22.4 million in Fiscal Year 2019-20,
  - d. \$36.1 million in Fiscal Year 2020-21, and
  - e. \$19.9 million in Fiscal Year 2021-22
  
3. Maintaining the current sewer revenue rates, other than those that may be necessary for equity purposes among classes of users.

## INTRODUCTION

This report addresses the financial needs for the Regional Wastewater Reclamation Department based on the projected revenues, projected expenses, and projected capital improvement program expenses for Fiscal Year 2017-18 through Fiscal Year 2021-22.

## KEY ASSUMPTIONS

The Finance and Risk Management Department (Finance) worked with the Regional Wastewater Reclamation Department (Department) and the Regional Wastewater Reclamation Advisory Committee to develop these assumptions. The major assumptions include:

- relatively slow growth in the customer base,
- an increase in user fees and connection fees at the rate of population growth,
- a declining volume usage rate factor based on a five-year average,
- a capital improvement program of approximately \$200 million,
- additional sewer revenue debt of \$200 million, and
- using unrestricted cash for the prepayment of debt.

Appendix A further describes the assumptions used in this report.

## METHODOLOGY

Finance used the following methods to determine optimal sewer rates.

1. Analyzed the revenue generating potential of the Department's existing sewer rates.
2. Identified the projected cash needs of the Department for upcoming capital projects, anticipated operating and maintenance costs, debt service payments for existing debt, anticipated debt service payments for planned debt, and planned prepayment of future debt.
3. Compared the revenue generating potential of the existing rates to the Department's identified cash needs to determine whether rate changes may be necessary. Finance used an industry standard debt service ratio comparing revenues less operating and maintenance costs to debt service requirements for this analysis.
4. Analyzed the Department's cash balances, the effects of Arizona's local expenditure limitation on the Department, and the Department's debt ratings.

The estimates used for this analysis are as of January 31, 2018. Projected amounts change throughout the year as plans are refined and actual costs are determined..

## REVENUES

### Fees:

The County's wastewater system generates revenues from two major sources, sewer user fees and sewer connection fees.

**User fees** are the combination of: (1) the standard service fee and (2) the volume rate fee. Rate increases or decreases depend upon future growth in the number of new users and volume usage rate. The Department will not collect user fee revenues above the current level without a rate increase, or growth in these two factors. The last rate increase took effect in June 2017.

**Connection fees** are charged when new construction connects to the sewer system for the first time or when renovation of existing structures requires additional or larger water meters. Connection fees are based primarily on water meter size, with fees increasing as water meter size increases. The principal factor that will affect revenues from future connection fees will be the volume of new construction within Pima County.

For purposes of this financial analysis, future user fees and connection fees are projected to increase at the same rate as the estimated rate of population growth issued in January 2018 by the University of Arizona Economic & Business Research Center. These estimates project population growth rates to be between 0.59 percent and 0.83 percent between Fiscal Year 2018-19 and Fiscal Year 2021-22, as indicated in Appendix A.

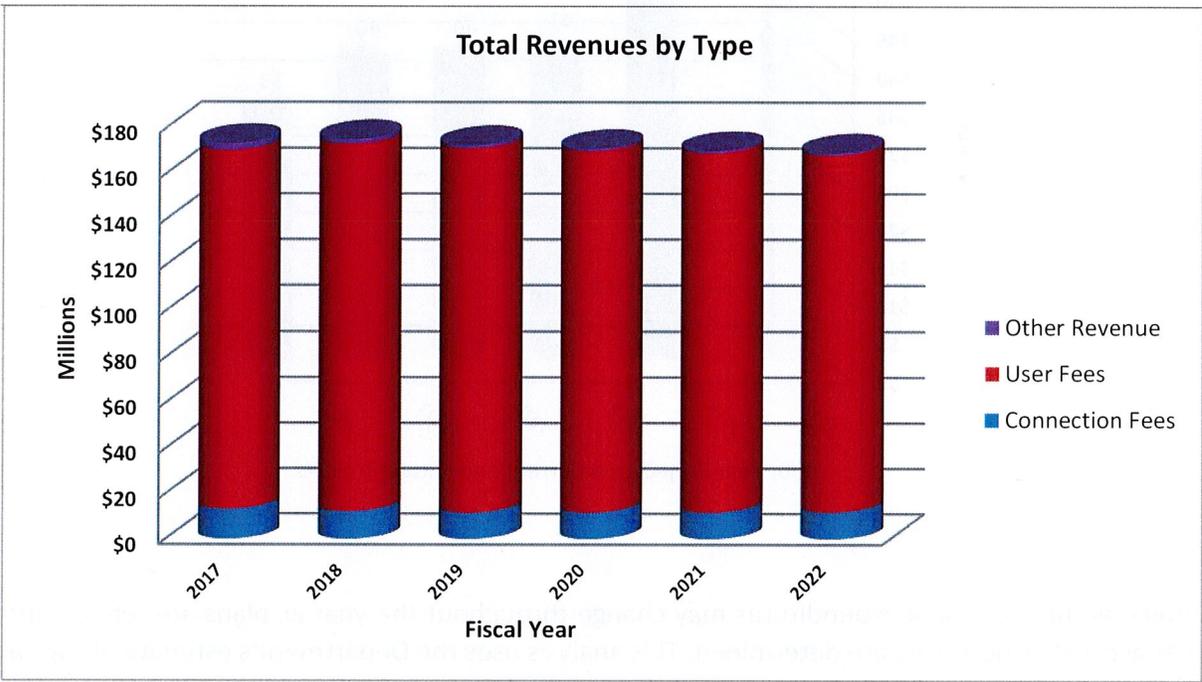
### Declining Volume Usage:

Another factor that must be considered in determining future revenue projections is the recent downward trend in total influent flow, the amount of sewage flowing into the treatment plants. This downward trend has had a negatively impacted on the billings for the volume rate component within the user fee revenue calculation. The amount billed is based on an average water usage, also known as the winter quarter average, taken from the months of December, January, and February. As the monthly water consumption decreases, the amounts billed and collected also decrease. Based on the review of user fee revenues billed and collected for the past five years, this downward trend has decreased revenues on average by approximately 2.0 percent. Therefore, we have utilized a 98.0 percent (100 percent – 2.0 percent = 98.0 percent) rate factor for future year projections. This is consistent with the experience of the water providers who serve the area and have been reporting decreases in water usage.

**Total Revenues:**

Future system revenues are expected to decrease. Fiscal Year 2018-19 revenues are projected to decrease slightly from the prior fiscal year due to reduced volume usage, despite the increase in population growth. From Fiscal Year 2019-20 through Fiscal Year 2021-22, user fee revenues are expected to remain relatively flat. Figure 1, shows Total Revenues by Type, for Fiscal Year 2016-17, including projections through Fiscal Year 2021-22, with a portion of those revenues attributable to connection fees.

**Figure 1: Total Revenues by Type**



As detailed in Table 1, Connection Fees are expected to remain at or below \$13.1 million.

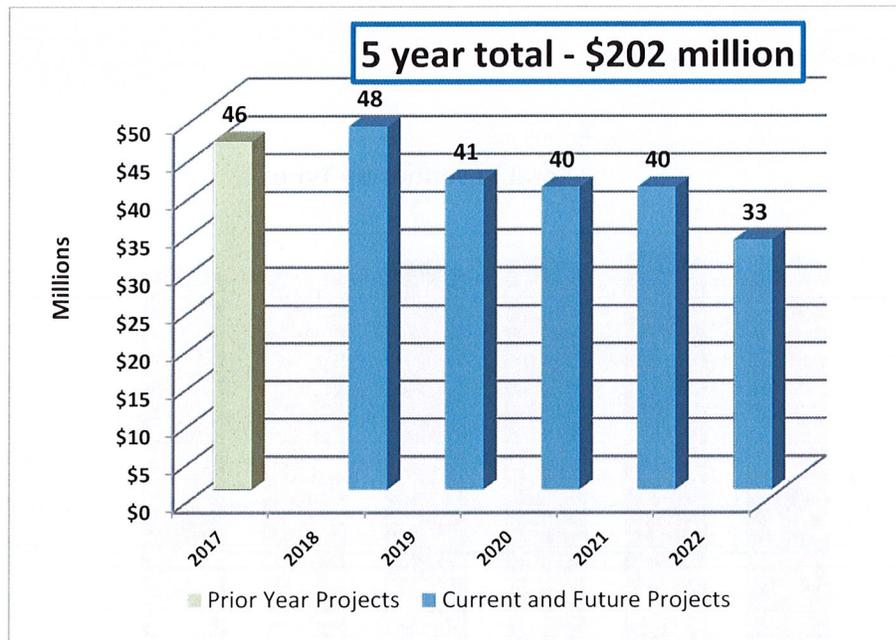
**Table 1: Total Revenues by Type – Detail (in Millions)**

Fiscal Year	Connection Fees	User Fees	Other Revenue	Total Revenues
2017	13.1	157.0	3.0	173.1
2018	12.1	160.8	2.0	174.9
2019	11.5	159.4	1.4	172.3
2020	11.6	158.2	0.9	170.7
2021	11.7	157.2	1.0	169.9
2022	11.8	156.2	0.9	168.9

**CAPITAL IMPROVEMENT PROGRAM**

As shown in Figure 2, capital expenditures are estimated to be \$202 million through the end of Fiscal Year 2021-22. Typically, an additional \$35 to \$45 million in capital improvements are anticipated annually, thereafter.

**Figure 2: Capital Project Costs**

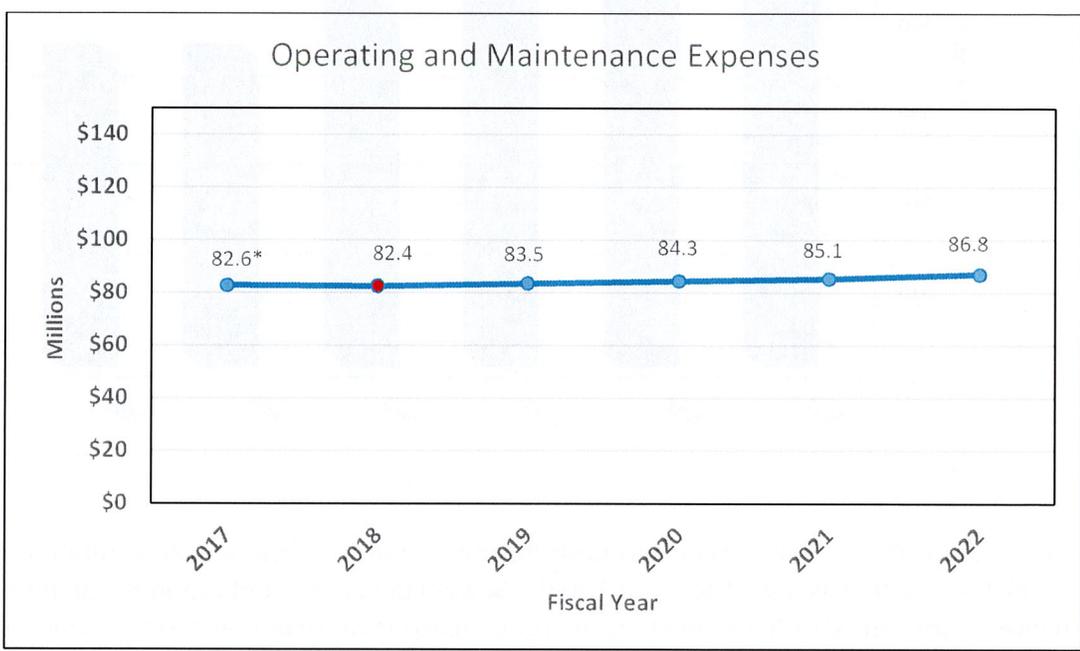


Projected future capital expenditures may change throughout the year as plans are refined and actual construction costs are determined. This analysis uses the Department’s estimate of capital projects as of January 2018. A summary of these capital projects for Fiscal Year 2017-18 through Fiscal Year 2021-22 can be found in Appendix C, *Summary of Planned Capital Improvement Projects as of April 2018*. As discussed on page 11, in the Expenditure Limitation section, for expenditure limitation reasons, Pima County must continue to borrow funds for the \$202 million planned capital improvements program, even though the County has cash available in the fund.

**OPERATING AND MAINTENANCE EXPENSES**

The Department is expecting to complete Fiscal Year 2017-18 with Operating and Maintenance (O&M) expenses of \$82.4 million. The budget for Fiscal Year 2018-19 has not yet been approved by the Board of Supervisors. For analysis purposes, the Department’s recommended budget is \$83.5 million. Increases in operating costs of one to two percent are estimated for the following fiscal years. Employee compensation is expected to be \$31.5 million in Fiscal Year 2018-19, representing 38 percent of total operating expenses and accounting for the greatest portion of O&M costs. This financial analysis assumes that operating expenses will continue to increase by one percent each year, starting in Fiscal Year 2019-20 and increase by two percent each year, starting in Fiscal Year 2021-22. At this rate of increase, O&M costs are expected to increase by approximately \$4.4 million during the next four-year period. Figure 3 shows the increase in O&M expenses from Fiscal Year 2017-18 to Fiscal Year 2021-22.

**Figure 3: Operating and Maintenance Expenses**

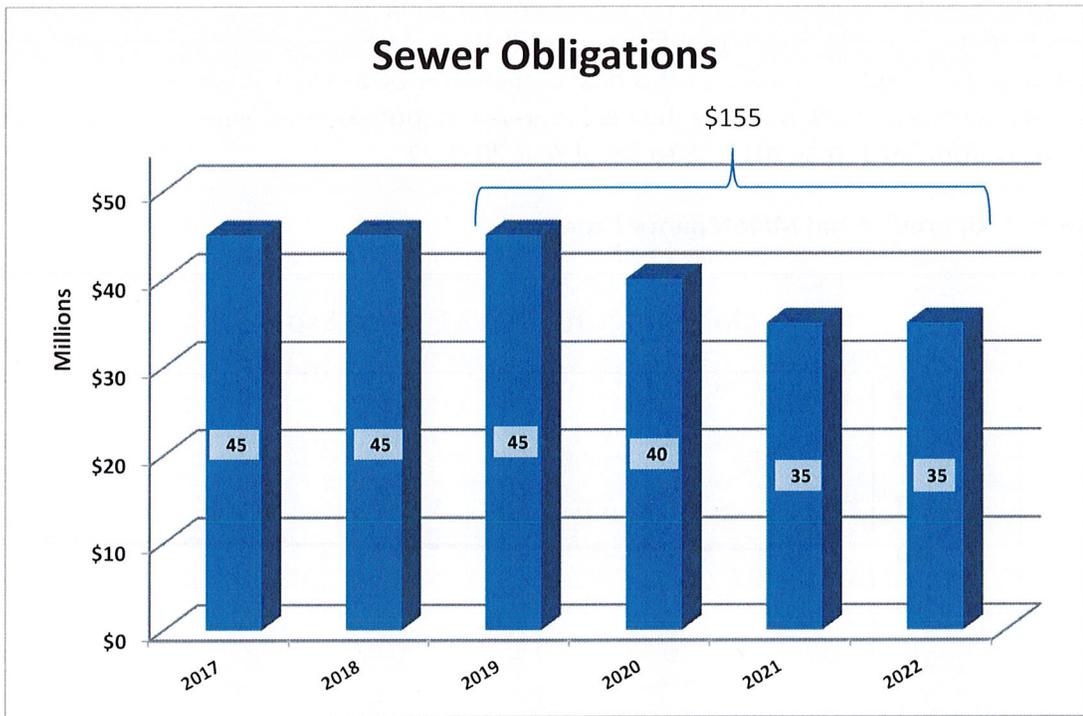


\*Operating and Maintenance Expenses, excluding a non-cash accounting entry for Pension expenses

**SEWER REVENUE DEBT FINANCING**

As of June 30, 2017, Pima County had \$538 million of sewer revenue debt outstanding. The County is issuing another \$45 million in sewer obligations in April 2018 and plans to issue an additional \$155 million of new sewer revenue obligations over the next four years. Figure 4 shows the amounts and timing of the future debt issues.

**Figure 4: \$155 Million of Additional Debt 2019 Through 2022**



As discussed in the Cash Reserves and Cash Balances, and the Expenditure Limitation section, although the County has unrestricted cash in the Sewer Fund, the County cannot use the available cash directly for capital projects due to constitutional expenditure limitation restrictions. Instead, the County needs to finance its capital programs through debt. The County plans to use the available unrestricted cash to prepay existing debt as soon as possible.

**DEBT SERVICE PAYMENTS**

Total debt service payments are expected to remain constant over the next few years, because the County anticipates issuing additional debt as shown in Figure 4 and utilizing unrestricted cash to prepay debt. Debt service for Fiscal Year 2017-18 will be \$70.0 million, with the use of \$16.6 million in unrestricted cash to prepay the 2008 Sewer Bonds. \$8.3 million of the prepaid 2008 Sewer Bonds are scheduled for payment at the end of Fiscal Year 2017-18. In this way, current year debt service payments were reduced from \$74.6 million in debt payments last year.

Figure 5 shows the debt service payments from Fiscal Year 2016-17 and the projected payments through Fiscal Year 2027-2028.

**Figure 5: Debt Service Payments**

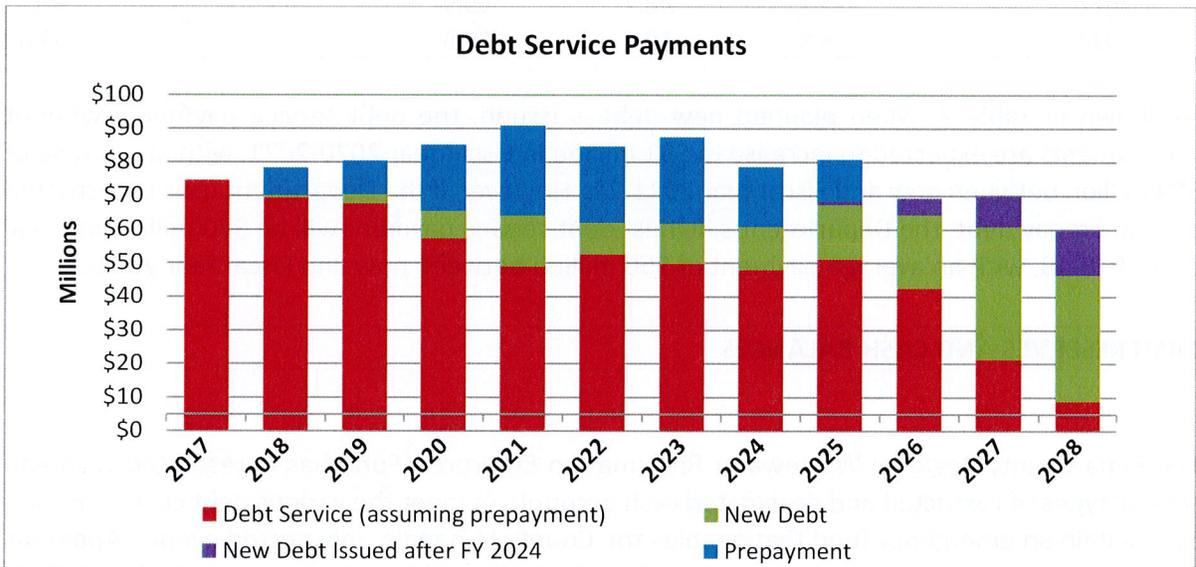


Table 2, details the impact on the debt service payments by year, if unrestricted cash is used to prepay debt service payments and debt is issued according to the Rate Workbook (see Appendix B) for Fiscal Years 2017-18 to 2023-24, and \$40 million in debt is issued each Fiscal Year from 2024-25 to 2027-28.

**Table 2: Debt Service Payment – Detail (in Millions)**

Fiscal Year	Debt Service on Existing Debt	Planned Debt Service on New Debt	Total Planned Debt Service WITHOUT Prepayments	Total Planned Prepayments	Total Planned Debt Service AFTER Prepayment
2017	74.6	-	74.6	-	74.6
2018	77.7	0.6	78.3	8.3	70.0
2019	77.8	2.6	80.4	10.1	70.3
2020	76.9	8.2	85.1	19.7	65.4
2021	75.8	15.1	90.9	26.9	64.0
2022	75.3	9.4	84.7	22.8	61.9
2023	75.5	11.9	87.4	25.8	61.6
2024	65.8	12.8	78.6	17.9	60.7
2025	63.5	17.2	80.7	12.4	68.3
2026	42.4	26.9	69.3	-	69.3
2027	21.2	48.7	69.9	-	69.9
2028	8.8	50.8	59.6	-	59.6

As shown in Table 2, when planned new debt is issued, the debt service payments without prepayments are expected to increase to \$91 million in Fiscal Year 2020-2021, with an average of \$84 million between now and Fiscal Year 2021-22. However, if the Department uses unrestricted cash to prepay debt, the Department’s highest debt service payment will be \$70 million in Fiscal Year 2018-19, with an average payment of \$66 million between now and Fiscal Year 2021-22.

**CASH RESERVES AND CASH BALANCES**

The Pima County Regional Wastewater Reclamation Enterprise Fund has unrestricted cash and several types of restricted and designated cash accounts to meet the various debt covenants and to maintain an emergency fund that enables the County to handle unexpected events. Appendix D, *Cash Position Assuming the Prepayment of \$107.4 Million of Debt between 2017-18 and 2021-22*, shows the balances and projected balances of the cash accounts. As of Finance and Risk Management’s January 31, 2018 Cash Flow report, the Fund will have an estimated \$150 million in cash at the end of Fiscal Year 2017-18, of which \$62 million is currently estimated to be unrestricted. The restricted and designated cash accounts described below include the remaining \$87.6 million balances:

1. **Emergency Reserve Fund (Unrestricted)** – In Fiscal Year 2009-2010, the Board of Supervisors established a \$20 million Emergency Reserve Fund. The fund is for unexpected events affecting the ongoing operations of the sewer system.

2. **Operating Reserve Fund (Partially Restricted)** – Various debt instruments require the County to maintain a 30 day balance of anticipated operating expenses. Pima County maintains 90 days of anticipated operating expenses in this fund, the remaining 60 days of reserve of cash is designated by management for operating expenses. By the end of Fiscal Year 2017-18, these reserves are projected to be \$20.5 million.
3. **Debt Service Reserve Fund (Restricted)** – This restricted fund is used to set aside cash for sewer debt service payments. On a monthly basis, the County transfers one-twelfth of budgeted annual debt service into this reserve account to ensure cash is available for the annual debt service payments. These funds will be applied to the final debt service payments for the respective debt. By the end of Fiscal Year 2017-18, these debt reserves are projected to be \$40.6 million.
4. **Bond Proceeds (Restricted)** – This restricted fund is used to restrict the bond proceeds received until the funds are spent for the various bond projects. By the end of the Fiscal Year 2017-18, this reserve is projected to be \$6.5 million.

<b>RATING AGENCY DEBT SERVICE RATIO</b>
-----------------------------------------

**Net Operating Revenue to Debt Service:**

Net operating revenues are the regular, recurring revenues generated by operating the sewer system that remain after paying for sewer system operating expenses. Net operating revenues must be sufficient to do two things: (1) cover the required debt service payments and required reserves and (2) generate a sufficient margin that enables the County to pay non-operating costs and maintain additional reserves for unforeseen events.

Bond rating agencies use a basic ratio of net operating revenues to debt service to evaluate the financial health of governmental sewer operations. A ratio of 1 indicates that net operating revenues match debt service payments – net operating revenues are 100 percent of debt service payments. A ratio of less than 1, for example, 0.9, indicates that net revenues are less than, or in this example 90 percent of, debt service payments. A ratio of greater than 1, for example, 1.3, indicates that net revenues are larger than, or in this example 130 percent of, debt service payments.

Bond rating agencies have historically expected to see governmental sewer operators set rates that maintain a rating agency debt service ratio of 1.3. This enables governments to cover debt service payments and cash reserves, while making interest rates attractive to investors.

Since the beginning of the Regional Optimization Master Plan, Pima County administration has committed to setting rates that maintain a rating agency debt service ratio of 1.3. The Regional Wastewater Reclamation Advisory Committee formally stated this goal in a letter to Pima County's Board of Supervisors. Pima County's sewer revenue debt is highly rated and the County is able to sell debt for its Capital Improvement Program at low interest rates.

At its November 15, 2017 meeting, Pima County's Regional Wastewater Reclamation Advisory Committee identified two factors that would trigger discussions about possible rate increases: a rating agency debt service ratio falling below 1.2 or unrestricted cash reserves of less than three months of operating expenses (approximately \$21 million). As shown in Appendix B, the Fund's rating agency debt service ratio does not fall below 1.2 nor does the unrestricted cash balance fall below \$21 million through fiscal year 2023-24. These factors do not indicate a need for rate increases. Also at its November 15, 2017 meeting, the Advisory Committee authorized Finance and Risk Management to explore options for using unrestricted cash above the \$21 million amount to pay off debt early.

In recent years, Pima County has not needed to use its unrestricted financial reserves to pay for unforeseen events and the Fund has accumulated a significant balance (see Cash Balances section). Pima County's Finance and Risk Management Department recommends the prepayment of sewer revenue debt discussed in the Debt Service Payments section while carefully monitoring unrestricted cash balances to ensure they stay at reasonable levels.

It is important to note that Pima County has two additional debt service ratios. These two ratios (the senior debt service ratio and the junior debt service ratio) are calculated differently than the rating agency debt service ratio. These two ratios are not used as indicators of financial health. They should not be used for financial planning in the same way the rating agency debt service ratio is used. These two ratios are used by external parties to make legal determinations about whether Pima County is violating the contractual provisions of its debt. By setting rates to keep the bond rating agency debt service ratio at or near its target of 1.3, Pima County will not violate the contractual provisions of its debt. Additional details about these two contractual debt service ratios can be found in Appendix E, *Debt Service Ratio Calculations*.

Appendix B provides more detail of the projected revenues, expenses, net operating revenues, and debt service ratios of the system.

#### **EXPENDITURE LIMITATION**

##### **Impact to Wastewater Projects:**

Due to the expenditure limitation restrictions in Article IX, Section 20, of the Arizona Constitution, the County is not able to use available cash to fund capital improvements on a pay-as-you-go basis. The expenditure limitation restricts the use of local revenues which consist of primary property taxes, impact fees, connection fees, including all fees charged for sewer services, and

any other fees charged for County services. The County may not exceed the expenditure limit even if the County has cash available to spend.

Although the County cannot use the cash to fund projects on a pay-as-you-go basis, the County may use the cash to pay debt service without impacting the expenditure limit. The County must fund sewer capital projects with borrowed funds, and use available unrestricted cash to pay the debt service on such funds, in order to comply with the expenditure limitation,. The County is exploring relatively short-term financing that may allow for a modified pay-as-you-go approach.

## **BOND RATING AGENCIES**

In March 2018, Fitch Ratings reaffirmed the County's sewer debt rating of AA for the Senior Debt and AA- for the Junior Debt. In addition, in March 2018, Standard and Poor's reaffirmed the County's sewer debt rating of AA for the Senior Debt and AA for the Junior Debt. The issued reports explained the analysis of Pima County's financial condition for its sewer debt. The bond ratings reflect the rating agencies evaluation of the financial stability of the County and its ability to repay debt. As ratings increase, the interest rates offered by lenders decrease, reducing the overall debt cost to the County.

## **RECOMMENDATIONS**

### **The Regional Wastewater Reclamation Advisory Committee Recommendation:**

During fiscal year 2016-2017 and 2017-18, the Finance and Risk Management Department met regularly with the Finance Subcommittee of the Regional Wastewater Reclamation Advisory Committee to discuss the Department's financial activity and condition. The Finance Subcommittee moved and approved the following recommendation at its April 18, 2018 meeting.

*We support the findings and recommendations outlined in the 2018 Financial Plan.*

*Specifically:*

- 1. Continue to issue new sewer revenue debt as planned, to finance the capital needs of maintaining and expanding the County's sewer system.*
- 2. Use unrestricted cash as planned, to prepay sewer revenue debt.*
- 3. An increase in revenues generated by sewer user fees is not needed at this time.*

The full Regional Wastewater Reclamation Advisory Committee moved and approved this recommendation at its April 26, 2018 regular meeting.

**The 2018 Financial Plan's Recommendations for Pima County:**

1. Issuing \$155 million of new sewer revenue obligations to fund future capital improvement projects as follows:
  - a. \$45 million in Fiscal Year 2018-19,
  - b. \$40 million in Fiscal Year 2019-20,
  - c. \$35 million in Fiscal Year 2020-21, and
  - d. \$35 million in Fiscal Year 2021-22.
  
2. Using unrestricted cash to prepay debt as follows:
  - a. \$16.6 million in Fiscal Year 2017-18,
  - b. \$12.4 million in Fiscal Year 2018-19,
  - c. \$22.4 million in Fiscal Year 2019-20,
  - d. \$36.1 million in Fiscal Year 2020-21, and
  - e. \$19.9 million in Fiscal Year 2021-22
  
3. Maintaining the current sewer revenue rates, other than those that may be necessary for equity purposes among classes of users.

### **LIST OF APPENDICES**

Appendix A – Key Assumptions used for the 2018 Financial Plan

Appendix B – Rate Workbook

Appendix C – Summary of Planned Capital Improvement Projects as of April 2018

Appendix D – Cash Position Assuming the Prepayment of \$107.4 Million

Appendix E – Debt Service Ratio Calculations

# APPENDIX A

KEY ASSUMPTIONS  
2018 Financial Plan

	Current Year						Totals		
	2018	2019	2020	2021	2022	2018-2022			
<b>ASSUMPTION REGARDING:</b>									
1	Population Growth Factors	1.0100	1.0059	1.0068	1.0083	1.0082	2018 UA Economic & Business Research Center estimates for FY 2018 - 2022.		
2	User Rate Increases:	3.00%	0.00%	0.00%	0.00%	0.00%	Rates based on 3% increase in June 2017.		
	Volumetric Fee Increases Service Charge	3.00%	0.00%	0.00%	0.00%	0.00%			
3	Volume Usage Rate Factor	0.980	0.980	0.980	0.980	0.980	Rate based on 5 year average decline in volume usage		
4	Connection Fees	1.0100	1.0059	1.0068	1.0083	1.0082	2018 UA Economic & Business Research Center estimates for FY 2018 - 2022.		
	Rate Increase	3.00%	0.00%	0.00%	0.00%	0.00%	Rates based on 3% increase in June 2017.		
5	Annual rate of expense increase			1.00%	1.00%	2.00%	Current year is based on projected expenses for Period 7. FY 2019 is based on Requested Budget amounts. For future years, assumption of 1% or 2% growth in operating costs over prior year's actual costs.		
6	Capital Projects	48,000,000	41,000,000	40,000,000	40,000,000	33,000,000	For Fiscal Years 2018 - 2022, amounts per RWRD's January 2018 CIP Schedule.		
7	Debt Assumptions	45,000,000	45,000,000	40,000,000	35,000,000	200,000,000			
8	Interest Rate Assumptions	5.00%	5.00%	5.00%	5.00%	5.00%			

APPENDIX B

Regional Wastewater Reclamation Department Enterprise Fund  
 Financial Projections - Rating Agency Ratio 1.2 or above and Unrestricted Cash Greater than Three Months of Operating Expenses  
 Fiscal Years 2017 through 2024 **Excess Cash used to Advance Refund through Insurbance Defeasance**

January 2018 CURRENT FORECAST

	Assumptions									
	2016-17	2017-18	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	
Customers	275,382	277,583	278,136	279,777	281,679	284,017	286,346	288,580	290,831	
Population Growth - UA Estimates	1.0095	1.0116	1.0100	1.0059	1.0068	1.0083	1.0082	1.0078	1.0078	
Volume Rate	3.5230	3.6287	3.6287	3.6287	3.6287	3.6287	3.6287	3.6287	3.6287	
Rate factor - Volume Fee	1.0000	1.0300	1.0300	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Service Charge Rate	12.6300	13.0089	13.0089	13.0089	13.0089	13.0089	13.0089	13.0089	13.0089	
Rate factor - Flat Service Charge	1.0000	1.0300	1.0300	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Rate factor - Connection Fee	1.0000	1.0300	1.0300	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Rate factor - O&M Expenses	1.0000	1.0000	1.0000	1.0000	1.0100	1.0100	1.0200	1.0200	1.0200	
CCF - Calculated Flow Estimate	9.8682	9.6708	9.6708	9.4774	9.2879	9.1021	8.9201	8.7417	8.5668	
Rate factor - Volume	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	

	Actuals	Adopted Budget	Forecasted						
	2016-17	2017-18	2017-18*	2018-19**	2019-20	2020-21	2021-22	2022-23	2023-24
<b>System Revenues:</b>									
Volumetric User Fee	114,885,976	116,019,006	116,932,703	115,460,272	113,920,494	112,568,713	111,221,941	109,847,683	108,490,405
Fixed User Administrative Fee	41,736,896	43,332,590	43,418,893	43,675,064	43,972,055	44,337,023	44,700,586	45,049,251	45,400,635
Sanitation Fees	377,636	310,000	450,000	310,000	310,000	310,000	310,000	310,000	310,000
<b>Total Sewer Utility Service</b>	<b>157,000,508</b>	<b>159,661,596</b>	<b>160,801,596</b>	<b>159,445,336</b>	<b>158,202,549</b>	<b>157,215,736</b>	<b>156,232,527</b>	<b>155,206,934</b>	<b>154,201,040</b>
Sewer Connection Revenue	13,116,322	11,370,701	12,120,701	11,504,784	11,583,017	11,679,156	11,774,925	11,866,769	11,959,330
Interest	1,478,450	1,010,000	1,186,535	1,095,000	678,403	695,919	640,078	550,000	500,000
Other Income	1,462,349	389,135	757,869	284,260	284,260	284,260	284,260	284,260	284,260
<b>Total Revenues</b>	<b>173,057,629</b>	<b>172,431,432</b>	<b>174,866,701</b>	<b>172,329,380</b>	<b>170,748,228</b>	<b>169,875,071</b>	<b>168,931,790</b>	<b>167,907,963</b>	<b>166,944,630</b>
<b>Operations and Maintenance Costs</b>	<b>80,164,989</b>	<b>83,382,074</b>	<b>82,390,822</b>	<b>83,466,665</b>	<b>84,301,332</b>	<b>85,144,345</b>	<b>86,847,232</b>	<b>88,584,177</b>	<b>90,355,860</b>
<b>Net Revenues</b>	<b>92,892,640</b>	<b>89,049,358</b>	<b>92,475,879</b>	<b>88,862,715</b>	<b>86,446,896</b>	<b>84,730,726</b>	<b>82,084,558</b>	<b>79,323,786</b>	<b>76,588,770</b>
Existing Debt Service - Senior Debt	13,342,629	10,739,352	2,452,952	698,239	36,934	-	-	-	-
Existing Debt Service - Subordinate Debt	61,229,471	66,932,850	66,932,850	66,955,878	57,155,503	48,969,350	52,540,257	49,691,697	47,946,672
<b>Total Existing Debt Service Payments</b>	<b>74,572,100</b>	<b>77,672,202</b>	<b>69,385,802</b>	<b>67,654,116</b>	<b>57,192,436</b>	<b>48,969,350</b>	<b>52,540,257</b>	<b>49,691,697</b>	<b>47,946,672</b>
Proposed Debt Service	-	622,333	622,333	2,617,000	8,163,564	15,073,091	9,385,694	11,954,397	12,817,748
<b>Total Debt Service Payments</b>	<b>74,572,100</b>	<b>78,294,535</b>	<b>70,008,135</b>	<b>70,271,116</b>	<b>65,356,000</b>	<b>64,042,441</b>	<b>61,925,951</b>	<b>61,646,094</b>	<b>60,764,419</b>
<b>Rating Agency Ratio</b>	<b>1.25</b>	<b>1.14</b>	<b>1.32</b>	<b>1.26</b>	<b>1.32</b>	<b>1.32</b>	<b>1.33</b>	<b>1.29</b>	<b>1.26</b>
<b>Net Revenues after Debt Service Payments</b>	<b>18,300,000</b>	<b>10,800,000</b>	<b>22,500,000</b>	<b>18,600,000</b>	<b>21,100,000</b>	<b>20,700,000</b>	<b>20,200,000</b>	<b>17,700,000</b>	<b>15,800,000</b>
Transfers out - COPs 2013									
Transfers out - COPs 2015	(16,250,000)	(16,000,000)	(16,000,000)	(12,300,000)	-	-	-	-	-
Transfers out - COPs 2016	(7,500,000)	(7,200,000)	(7,200,000)	(5,800,000)	-	-	-	-	-
Debt Service Reserve (Obligations) Transfer	(2,000,000)	(2,000,000)	(2,900,000)	(3,100,000)	(3,200,000)	(2,700,000)	(2,600,000)	(2,500,000)	(2,500,000)
Operating Transfer In - Debt Reserve					11,200,000	9,300,000			
Other Operating Transfers Out	(2,300,000)	(800,000)	(800,000)	(800,000)	(430,000)	(430,000)	(430,000)	(430,000)	(430,000)
Prepayment of 2004 WIFA Loans	(10,450,000)	-	-	-	-	-	-	-	-
Prepayment of 2008 Bonds			(16,600,000)						
Prepayment of 2009 Bonds				(2,900,000)					
Prepayment of 2009 WIFA Loans					(3,000,000)				
Prepayment of 2010 Obligations				(9,500,000)	(19,400,000)				
Prepayment of 2011 Obligations						(23,700,000)			
Prepayment of 2012 Obligations						(12,400,000)	(19,900,000)		(10,690,000)
Prepayment of 2014 Obligations								(9,150,000)	
Prepayment of 2016 Obligations								(8,500,000)	
Net Changes in Assets and Liabilities	600,000	(4,440,000)	(3,600,000)	(1,700,000)	(2,170,000)	(1,900,000)	(1,700,000)	(1,700,000)	(1,700,000)
<b>Subtotal</b>	<b>(19,600,000)</b>	<b>(19,640,000)</b>	<b>(24,600,000)</b>	<b>(17,500,000)</b>	<b>4,100,000</b>	<b>(11,130,000)</b>	<b>(4,430,000)</b>	<b>(4,580,000)</b>	<b>480,000</b>
Beginning Unrestricted Cash Balance	110,450,000	89,316,000	89,316,000	62,000,000	43,800,000	48,100,000	36,800,000	32,200,000	27,420,000
Change in Restrictions of Cash	(1,534,000)	3,900,000	(2,716,000)	(700,000)	200,000	(170,000)	(170,000)	(200,000)	(200,000)
<b>Ending Unrestricted Cash Balance</b>	<b>89,316,000</b>	<b>73,576,000</b>	<b>62,000,000</b>	<b>43,800,000</b>	<b>48,100,000</b>	<b>36,800,000</b>	<b>32,200,000</b>	<b>27,420,000</b>	<b>27,700,000</b>
CIP Projections	46,400,000	49,300,000	48,000,000	41,000,000	40,000,000	40,000,000	33,000,000	34,000,000	44,000,000
Sewer Revenue debt	45,000,000	45,000,000	45,000,000	45,000,000	40,000,000	35,000,000	35,000,000	35,000,000	45,000,000

\* As of period 7  
 \*\* Requested Budget

APPENDIX C

PIMA COUNTY  
 Capital Improvement Program  
 Budget Development  
 Summary of Planned Capital Improvement Projects as of April 2018  
 Fiscal Year 2018-19



Department: WW-Regional Wastewater Reclamation  
 Planned Expenses

Program Code	Program	Estimated Prior Year(s)	Fiscal Year 2018/2019	Fiscal Year 2019/2020	Fiscal Year 2020/2021	Fiscal Year 2021/2022	Fiscal Year 2022/2023	Fiscal Year 2023/2024	Fiscal Year(s) Beyond	Program Total
CWW.322SC9	WW - 22nd St Swan to Craycroft Augmentation Phase 2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
CWW.3AI195	WW - ADOT - W Ajo Way & I-19 Sewer Modifications	1,250,000	1,000	-	-	-	-	-	-	1,251,000
CWW.3AP619	WW - Avra Valley WRF - Pond 6	-	-	-	-	-	-	3,800,000	-	3,800,000
CWW.3ASC15	WW - Old Nogales Interc. Aug - New Aerospace Corr Sewer	11,355,037	6,810,453	15,640,669	16,535,312	-	-	-	-	50,341,471
CWW.3ASP14	WW - State Prison Pump Station Rehabilitation FY13/14	928,476	452,986	-	-	-	-	-	-	1,381,462
CWW.3AVB16	WW - New Influent Emergency Overflow Basin - Avra Valley	1,290,102	-	-	3,827,036	-	-	-	-	5,117,138
CWW.3AVRP0	WW - Avra Valley WRF - RAS Pump Pit Shade Structure &	-	-	-	-	-	-	400,000	-	400,000
CWW.3AVS18	WW - Avra Valley WRF SCADA & Automation Impr FY 17/18	68,000	521,596	-	-	-	-	-	-	589,596
CWW.3B1124	WW - Tres Rios WRF Building 11 Electrical Room Addition	-	-	-	280,000	-	-	-	-	280,000
CWW.3BBUMP	WW - Tres Rios WRF Nutrient Recovery Project	1,625,646	4,434,996	-	-	-	-	-	-	6,060,642
CWW.3CDTA0	WW - Corona de Tucson WRF - Air Distribution System Upgrade	-	-	-	-	-	-	700,000	-	700,000
CWW.3CFS15	WW - Continental Ranch Pump Station - Second Force Main	-	150,000	972,000	605,000	595,000	5,739,000	6,734,000	4,594,000	19,389,000
CWW.3CRP01	WW - System-Wide Conveyance Rehabilitation Program	2,000	1,000	4,000,000	1,000	10,000,000	8,000,000	3,600,000	67,200,000	92,804,000
CWW.3CRS05	WW - CRRPS Facility Modifications	7,821,140	2,021,483	-	-	-	-	-	-	9,842,623
CWW.3CTCCB	WW - Corona de Tucson WRD - Chlorine Contact Basin	-	-	-	-	-	-	500,000	-	500,000
CWW.3DRSIT	WW - Facilities Modification - IPS Mobile Implementation	-	81,700	207,520	480,000	78,000	-	-	-	847,220
CWW.3ELF19	WW - Tres Rios WRF - Bldg 9. Expand Laboratory Floor Space	380,000	1,000	-	-	-	-	-	-	381,000
CWW.3EOC14	WW - SCADA Emergency Operations Center	630,000	1,000	-	-	-	-	-	-	631,000
CWW.3FGS17	WW - PC Fairgrounds WRF Connection to Existing Conveyance	239,975	967,025	2,835,000	958,000	-	-	-	-	5,000,000
CWW.3GAS18	WW - TRWRF BioGas Cleaning & Utilization Project	700,000	5,267,500	800,000	-	-	-	-	-	6,767,500
CWW.3GRS18	WW - Green Valley WRF - Grit Removal System Replacement &	302,811	1,000	-	-	-	-	-	-	303,811
CWW.3GVB17	WW - Green Valley WRF - Biofilter Rehabilitation & Upgrade	-	-	-	-	-	-	450,000	-	450,000
CWW.3GVC18	WW - Green Valley WRF - Two Additional Secondary Clarifiers	-	-	-	-	-	933,000	2,602,000	-	3,535,000
CWW.3GVCC0	WW - Green Valley WRF - Disk Filter Cover & Crane	280,000	1,000	-	-	-	-	-	-	281,000
CWW.3HOC18	WW - WRF Headworks Odor Control Improvements	500,000	500,000	-	-	-	-	-	-	1,000,000
CWW.3II105	WW - ADOT - Ina Rd & I-10 Sewer Modifications	3,560,515	100	-	-	-	-	-	-	3,560,615
CWW.3MMP18	WW - Sewer Utility Minor Modification Projects 2017/18	100,000	1,000	-	-	-	-	-	-	101,000
CWW.3MMP19	WW - Sewer Utility Minor Modification Projects 2018/19	-	100,000	-	-	-	-	-	-	100,000
CWW.3MMP20	WW - Sewer Utility Minor Modification Projects 2019/20	-	-	100,000	-	-	-	-	-	100,000
CWW.3MR220	WW - Sewer Manhole Rehabilitation #10	-	-	1,599,000	1,000	-	-	-	-	1,600,000
CWW.3MR221	WW - Sewer Manhole Rehabilitation #11	-	-	-	1,599,000	1,000	-	-	-	1,600,000
CWW.3MR222	WW - Sewer Manhole Rehabilitation #12	-	-	-	-	1,599,000	1,000	-	-	1,600,000
CWW.3MR223	WW - Sewer Manhole Rehabilitation Projects - FY 22/23	-	-	-	-	-	1,599,000	1,000	-	1,600,000
CWW.3MR818	WW - Sewer Manhole Rehabilitation # 8	1,599,000	1,000	-	-	-	-	-	-	1,600,000
CWW.3MR919	WW - Sewer Manhole Rehabilitation #9	-	1,599,000	1,000	-	-	-	-	-	1,600,000
CWW.3MRP18	WW - Minor Rehabilitation Projects FY 17/18	9,995,000	5,000	-	-	-	-	-	-	10,000,000
CWW.3MRP19	WW - Minor Rehabilitation Projects FY 18/19	-	9,995,000	5,000	-	-	-	-	-	10,000,000
CWW.3MRP20	WW - Minor Rehabilitation Projects FY 19/20	-	-	9,995,000	5,000	-	-	-	-	10,000,000
CWW.3MRP21	WW - Minor Rehabilitation Projects FY 20/21	-	-	-	9,995,000	5,000	-	-	-	10,000,000
CWW.3MRP22	WW - Minor Rehabilitation Projects FY 21/22	-	-	-	-	9,995,000	5,000	-	-	10,000,000
CWW.3MRP23	WW - Minor Rehabilitation Projects FY 22/23	-	-	-	-	-	9,995,000	5,000	-	10,000,000
CWW.3MTRLRR	WW - Mt Lemmon WRF Future Development Plan	-	-	-	-	-	-	2,000,000	2,819,000	4,819,000
CWW.3NRI20	WW - North Rillito Interceptor Rehabilitation-Campbell to 1s	-	-	-	-	-	-	3,311,830	-	3,311,830
CWW.3NWO19	WW - Northwest Outfall Siphon at the Santa Cruz River Rehab	-	-	-	-	1,548,770	-	-	-	1,548,770
CWW.3OPR19	WW - Prince Rd Sewer Replacement - Oracle Rd West	100,000	-	-	2,317,689	25,000	-	-	-	2,442,689
CWW.3PGC18	WW - Pantano Grade Control Structure	-	-	-	-	-	754,000	-	-	754,000
CWW.3PPS13	WW - Principal Pump Station	8,905	-	-	-	514,887	-	-	-	523,792
CWW.3PTI18	WW - Pantano Interceptor Rehabilitation - Ph 1 - Wilmot Rd	-	-	-	-	-	-	3,000,000	4,800,000	7,800,000
CWW.3PTI22	WW - Pantano Interceptor Rehabilitation - Phase 2	-	-	-	-	-	200,000	2,777,000	-	2,977,000
CWW.3RBP21	WW - Green Valley WRF - Recharge Basins Phase 2	-	-	-	-	-	500,000	3,300,000	-	3,800,000
CWW.3RI105	WW - ADOT W Ruthrauff Rd & Interstate 10 Sewer Modifications	11,603	1,863,397	-	-	-	-	-	-	1,875,000
CWW.3SAC15	WW - Speedway Blvd Area Capacity Augmentation Alignment	208,503	400,000	750,000	750,000	3,768,434	2,726,000	4,885,000	-	13,487,937
CWW.3SHT16	WW - Tres Rios Sludge Holding Tank	715,209	-	-	2,135,528	-	-	-	-	2,850,737

**PIMA COUNTY**  
**Capital Improvement Program**  
**Budget Development**  
**Summary of Planned Capital Improvement Projects as of April 2018**  
**Fiscal Year 2018-19**



Department: WW-Regional Wastewater Reclamation

Planned Expenses

Program Code	Program	Estimated Prior Year(s)	Fiscal Year 2018/2019	Fiscal Year 2019/2020	Fiscal Year 2020/2021	Fiscal Year 2021/2022	Fiscal Year 2022/2023	Fiscal Year 2023/2024	Fiscal Year(s) Beyond	Program Total
CWW.3SIR14	WW - Ina Rd Existing Plant SCADA Upgrades	585,209	1,000	-	-	-	-	-	-	586,209
CWW.3SPS15	WW - Silverado Pump Station Rehabilitation	-	-	-	-	514,000	-	-	-	514,000
CWW.3SQD18	WW - Tres Rios WRF 600HP Blower Starter Replacement	-	-	300,000	-	-	-	-	-	300,000
CWW.3SWT70	WW - System Wide Treatment Rehabilitation & Enhancement	1,000	1,000	1,000	1,000	100,000	3,500,000	3,000,000	9,000,000	15,604,000
CWW.3TDS20	WW - Tucson Blvd Flow Mgmt Structure & Siphon Inlet Rehab	-	-	-	420,000	3,750,000	-	-	-	4,170,000
CWW.3TPBBS	WW - Twin Peaks - Blue Bonnet Road Gravity Sewer	322,633	2,714,939	2,758,263	-	-	-	-	-	5,795,835
CWW.3TRB15	WW - Tres Rios WRF - Blower Modifications	-	480,000	-	-	-	-	-	-	480,000
CWW.3TRP19	WW - System-wide Treatment Rehabilitation Program	-	3,000,000	-	-	-	-	-	-	3,000,000
<b>Total Planned Expenses</b>		<b>\$ 44,580,764</b>	<b>\$ 41,375,175</b>	<b>\$ 39,964,452</b>	<b>\$ 39,910,565</b>	<b>\$ 32,494,091</b>	<b>\$ 33,952,000</b>	<b>\$ 43,565,830</b>	<b>\$ 88,413,000</b>	<b>\$ 364,255,877</b>

## APPENDIX D

Regional Wastewater Reclamation Enterprise Fund  
 Cash Position Assuming the Prepayment of \$107.4 Million  
 As of January 31, 2018 Cash Flow

	2017-18	2018-19	2019-20	2020-21	2021-22
Operations	104,000,000	86,500,000	90,600,000	79,700,000	75,200,000
Debt Proceeds for CIP Projects	36,500,000	44,000,000	38,600,000	31,300,000	34,100,000
CIP Projects	9,100,000	7,700,000	7,100,000	6,700,000	6,600,000
Estimated Cash Balance at End of Fiscal Year	149,600,000	138,200,000	136,300,000	117,700,000	115,900,000
<u>Less Reserves:</u>					
O&M - Operating Reserve	20,500,000	20,900,000	21,100,000	21,300,000	21,700,000
Debt Service Reserve	40,600,000	43,200,000	34,500,000	27,800,000	30,100,000
Construction - Bond Proceeds	6,500,000	10,300,000	12,600,000	11,800,000	11,900,000
Emergency Reserve	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000
<b>Projected Ending Cash Balance after Reserve Requirements are met</b>	<b>62,000,000</b>	<b>43,800,000</b>	<b>48,100,000</b>	<b>36,800,000</b>	<b>32,200,000</b>

## Appendix E

### Debt Service Ratio Calculations

The County has historically maintained the goals of a rating agency debt service ratio of at least 1.3 as discussed in the Debt Service Ratio section. This ratio is used by the rating agencies and serves as a good financial planning tool.

In addition to the rating agency debt service ratio, Pima County's sewer revenue debt has two additional ratios that are mandated by the debt covenants. These debt covenant ratios are used by external parties to determine Pima County's compliance with contractual obligations related to its debt. While these debt covenant ratios should be considered when setting interest rates, they should not be used as a financial planning tool in the same way that the rating agency debt service ratio is used. By setting rates to maintain a rating agency debt service ratio at or near 1.3, the County will comply with required debt covenant ratios.

The first debt covenant ratio is the Senior Debt Service Ratio. The first layer of debt is Senior Debt. Senior Debt consists of the sewer revenue bonds and Water Infrastructure Finance Authority of Arizona (WIFA) loans, issued before the County began issuing the sewer revenue obligations in Fiscal Year 2009-2010. The Senior Debt Service Ratio only uses the senior debt service in its calculation, because the Senior Debt holders have a priority claim on the net revenues of the sewer system.

The second debt covenant ratio is the Junior Debt Service Ratio. The second layer of debt is Junior Debt. As implied by those terms, Junior Debt is junior in priority to Senior Debt. Moreover, the pledge of revenues for Senior Debt must be paid before payments are made for Junior Debt. The Junior Debt Service Ratio uses both the senior debt service and the junior debt service in its calculation, because the Senior Debt must be paid first.

Including the rating agency debt service ratio, the three debt service ratio calculations are as follows:

- 1) **Rating Agency Debt Service** - The Bond Rating Agencies calculate the debt service ratio using the excess of net revenues over the required debt service. The rating agencies require a 1.3x debt ratio be maintained. A debt service ratio lower than 1.3 could cause rating agencies to downgrade future sewer debt from its current rating. The impact of a downgrade would be additional interest costs for future debt. Because the majority of the needed debt for RWRD construction has already been issued, the impact, though negative, would not be significant to the overall outstanding debt service. This is the most conservative of the three calculations.

$$\text{Rating Agency Debt Service Ratio} = \frac{\text{Net Operating Revenues}}{\text{Senior and Junior Debt Service Payments}}$$

- 2) **Senior Debt Service Ratio** - The Senior Debt Service Ratio is calculated by taking net operating revenues over the amount of Senior Debt. The debt service ratio for the Senior Debt is improving each year, because the balance of the outstanding Senior Debt is decreasing each year. This is because the net revenues are many times greater than the ever declining debt service payments for the Senior Debt, in any given year. The County is required to maintain a 1.2x Senior Debt Service Ratio. Failure to maintain a 1.2x triggers a default and provides a mechanism to force the County to increase rates.

$$\text{Senior Debt Service Ratio} = \frac{\text{Net Operating Revenues}}{\text{Senior Debt Service Payments}}$$

- 3) **Junior Debt Service Ratio** – The Junior Debt Service Ratio is calculated by taking the net operating revenues plus unrestricted cash balance from the beginning of the fiscal year, over the amount of Senior and Junior Debt. The County is required to maintain a 1.2x Junior Debt Service Ratio. Failure to maintain a 1.2x triggers a default and provides a mechanism to force the County to increase rates.

$$\text{Junior Debt Service Ratio} = \frac{\text{Net Operating Revenues} + \text{Unrestricted Cash Balance}}{\text{Senior and Junior Debt Service Payments}}$$