

Norman Utilities Authority City of Norman, OK

Water and Wastewater Financial Plan, Cost of Service, and Rate Study

Final Report / April 10, 2023

This page was intentionally left blank.



April 10, 2023

Mr. Chris Mattingly
Utilities Director
P.O. Box 370
201-C West Gray
Norman, OK 73070

Subject: Updated Water and Wastewater Financial Plan, Cost of Service Analysis, and Rate Study

Dear Mr. Mattingly,

Raftelis is pleased to provide this report highlighting the key findings of the water and wastewater financial plan, cost of service, , and rate design analysis Raftelis has completed for the Norman Utilities Authority water and wastewater divisions (NUA). This updated report contains revisions based on the feedback from NUA, including input from the City Council Study Sessions held December 20th (2022), February 7th, and March 7th, 2023.

The primary purpose of this study was to ensure the long-term financial sustainability of the water and wastewater utilities and ensure that the utility revenue sources recovered costs proportionately across all customer classes. This study includes the following for water and wastewater utilities:

- Water cost of service analysis to allocate costs proportionately to customer classes
- 10-year financial plan cash analysis to determine the level of revenues to meet annual expenditures
- Design of water and wastewater rate structure alternatives
- Presentation of final results and Rate Recommendations to NUA staff and the City Council

It has been a pleasure working with you, and we thank you and the Norman staff for the support provided during this study.

Sincerely,

A handwritten signature in black ink that reads 'Todd Cristiano'.

Todd Cristiano
Senior Manager

Table of Contents

INTRODUCTION	5
Assumptions	5
Guidance for Rate Structure Design	5
WATER UTILITY	7
Introduction.....	7
Financial plan.....	7
<i>Sources of Funds.....</i>	<i>7</i>
<i>Uses of Funds.....</i>	<i>8</i>
<i>Indicated Revenue Adjustments</i>	<i>8</i>
<i>Debt Service Coverage.....</i>	<i>9</i>
Cost of Service Analysis	11
Water Rate Structure Alternatives	13
<i>Projection of Monthly Bills.....</i>	<i>14</i>
<i>Comparison to Peer Communities.....</i>	<i>14</i>
WASTEWATER UTILITY	16
Introduction.....	16
Wastewater Financial Plan	16
<i>Sources of Funds.....</i>	<i>16</i>
<i>Uses of Funds.....</i>	<i>16</i>
<i>Indicated Revenue Adjustments</i>	<i>17</i>
Wastewater Rate Structure Alternatives	18
<i>Projection of Monthly Bills.....</i>	<i>19</i>
<i>Comparison to Peer Communities.....</i>	<i>19</i>
Reliance on Client Provided Data	20

List of Figures

Figure 1: Water Revenue with Proposed Increases and Expenditures	9
Figure 2: Water Ending Fund Balance and Target Reserves.....	9
Figure 3: Projected Combined Water and Wastewater Debt Service Coverage.....	10
Figure 4: Water Cost of Service Process.....	12
Figure 6: Projected Monthly Residential Water Bills at Various Levels of Consumption.....	14
Figure 7: Monthly Water Bills for a Customer with Usage of 5,000 gal/month	15
Figure 8: NUA - WRF Revenues and Expenditures	18
Figure 9: Wastewater Ending Fund Balance and Reserve Target	18
Figure 11: Projected Monthly Wastewater Bills for Hypothetical Customers	19
Figure 12: Monthly Wastewater Bills for a Customer with 5,000 gal/month AWC.....	20

List of Appendices

- Appendix A: Water Utility Financial Plan, Cost of Service, and Rate Design Tables
- Appendix B: Wastewater Utility Financial Plan, Rate Design Tables

Introduction

BackgroundThe City, through the Norman Utilities Authority (NUA), provides service to over 40,000 water and wastewater customers. The NUA operates the water and wastewater utilities as a stand-alone, financially self-sufficient entities. The rates and charges which are implemented by the utilities are intended to fully fund the operation and maintenance, debt service obligations and expenses associated with needed capital investments.

NUA retained Raftelis to conduct a comprehensive financial planning, cost of service and rate design study to ensure that the utilities set rates and charges which will provide an adequate level of income from water and wastewater sales. The charges are intended to fully finance operation and maintenance expenses, debt service, cash-funded capital projects, meet their debt service coverage, and maintain reserve balances in line with City & NUA guidance. This study included the development of:

- Separate water and wastewater financial plans for the 10-year study period, 2022 through 2031.
- A water cost of service analysis to determine the cost to provide service to each customer class
- Water and wastewater rates meeting pricing objectives identified by the NUA

Raftelis used industry standard methodologies supported by the American Water Works Association (AWWA) *Principles of Water Rates, Fees, and Charges* M1 manual and the *Water Environment Federation Manual of Practice 27* (MOP27) for this rate study.

Appendix A contains the supporting tables detailing the development of the water financial plans, cost of service analysis, and rate design. Appendix B contains the wastewater financial plan and rate design tables.

Assumptions

This study is based on numerous assumptions. Changes in these assumptions could materially affect the study findings. Raftelis incorporated the following key assumptions into the study:

- The test year, or the year new rates will be in effect, FY 2024. The fiscal period is from July 1, 2023 through June 30, 2024
- The study period forecast is for FY22 through FY31
- Annual customer account growth: 1.2%
- Aggregate annual O&M inflation: 3.8%
- Annual capital project inflation: 5.0% for FY24 and FY25, 3.0% thereafter
- Debt service
 - Coverage requirement is 1.25 x debt service based on the State Loan SRF requirements
 - Bond terms: 4.0% interest rate, 20-year term, July 1 issue date

Guidance for Rate Structure Design

For completion of the design of rates and charges, NUA identified several objectives to be captured in the analysis of the alternatives. Important attributes for the rate to be recommended included:

- **Revenue stability.** Rates and charges should generate stable and predictable revenues
- **Interclass equity.** Each customer class's rate should be targeted to recover their cost to provide service – i.e. minimize interclass subsidies
- **Intraclass equity.** Low volume users and high-volume users recover their proportionate share of costs
- **Intergenerational equity.** Equitable cost recovery between new and existing customers through the use of connection fees to fund growth-related projects
- **Conservation.** Encourage wise water use through the use of pricing signals in the rate structure
- **Demand management.** Rate structures which encourage shifting peak demands to non-peak times in the system
- **Customer impact.** Minimum the amount of change in customers' bills resulting from a rate structure change
- **Ease of administration/implementation.** The rate structure should be easy to implement with current billing systems and be easy to explain to customers.

Additionally, the revenues resulting from the recommended rates must be sufficient to generate revenues (across both water and wastewater utilities) capable of maintaining a minimum Debt Service Coverage Ratio of 1.25x required by NUA policies and bond covenants.

Policy on Target Reserves

The NUA's current reserve practice is to maintain a capital reserve of an average of 5-years of capital expenditures. Raftelis proposes a capital reserve equal to 1-year's depreciation expense. The 5-year average approach can cause swings in reserve levels which would impact the level of rate increases in a given year. Because depreciation expense does not tend to vary significantly from year to year, it helps with maintaining a leveled reserve amount.

The NUA's utility operating reserve level is set at 8.0% of annual operation and maintenance expense. The primary goal of the operating reserve is to absorb cash flow fluctuations due to the variability in monthly expenditures and the inflow of revenues. Combined, these reserves strengthen the utility's financial health and ability to weather unexpected operating costs or capital interruptions. Maintaining adequate funds also prevents the utility from reactively having to adjust rates in response to unforeseen events.

These reserve ratios were taken into account in the development of rate recommendations.

Water Utility

Introduction

NUA owns and operates wells, treatment plants, and a large distributions system to serve its customers. To cover the expenses associated with owning, operating and managing large term investments are recouped through the application of a series of fixed charges and volumetric rates applied to the amount of water used by each individual customer. For residential connections, fixed charges are applied to customer bills based upon the number of residential units served at each location and volumetric rates are applied based upon the amount of water which passes through the meter using an increasing rate block structure. This type of rate structure ensures that while all customers contribute through the fixed charges, higher use customers pay incrementally more proportional to the additional demands they place upon NUA's water system assets.

NUA provided Raftelis with five years of historical financial and billing data and the adoption FY23 budget and capital improvement program. We used this data as the basis for the 10-year financial plan forecast and determine the level revenue adjustments required to meeting annual operating expenditures.

Raftelis developed multiple cash flow scenarios based on three future water supply capital project options. These were:

1. ***New wells.*** Construct new wells in the Garber-Wellington aquifer.
2. ***OKC Water.*** Purchase additional wholesale treated water from Oklahoma City.
3. ***Lake Thunderbird Augmentation.*** Augment existing surface water supply.

These scenarios assume growth within NUA's service area which would require new infrastructure to meet the increased demand. Each of these scenarios use different capital strategies to meet that forecasted growth. Scenario 3, the Lake Thunderbird capital project, was modeled for the purposes of this study. It should be noted that despite growth, a portion of the revenue adjustments projected for scenario 3 will still be required to maintain the existing infrastructure and operate the facilities.

Additionally, a financial plan with *No Growth* was also evaluated to determine the revenue requirement from existing customers to maintain the existing infrastructure and operate the facilities. In other words, if growth were to stop, revenue adjustments would still be required to maintain the level of service to meet local, state, and federal regulations as well as customer service level expectations. The revenue adjustments for this theoretical *No Growth* scenario was shown to be generally equivalent to the initial increase for the other scenarios even without any growth.

Financial plan

SOURCES OF FUNDS

The water cash flow tracks all activities associated with operating and maintaining the water utility on a daily basis and funding capital projects. The FY23 beginning balance is \$1.5 million.

Operating revenues primarily consist of fixed and variable rate revenues and the capital improvement charge (CIC). Fixed and variable revenue at current FY23 rates will increase from \$21.8 million in FY23 to \$23.9 million in FY32. The CIC will increase from \$2.1 million in FY23 to \$2.3 million in FY32. These projections include an annual growth of 1.2%. In addition to rate revenue, state loans, and connection fees will be used to fund the 10-year capital improvement program. Proposed state loans total \$296.7 million. State loans traditionally offer more competitive interest rates than other debt instruments.

USES OF FUNDS

Operations & Maintenance Costs

Operation and maintenance (O&M) expenses consist of the cost collection, treat, and distribute water to customers. Major expenses categories include, chemicals, electricity, supplies and maintenance, and cost allocation transfers. These expenses were forecasted by escalating current budgets using industry standard practices and incorporating the current, higher than normal inflationary environment. Using these industry standard escalations, O&M costs are projected to increase from \$12.9 million in FY 2023 to \$18.3 million in FY 2032. Additionally, Interfund transfers are projected to increase from \$1.1 million in FY 2023 to \$1.5 million in FY 2032, escalating at 3.0% annually based on input from the City Finance Department.

Debt Service Costs

Debt service associated with past borrowing comprises the second category of expense included in the financial plan. These costs are based upon the existing repayment obligations of NUA for past investments in its water infrastructure and is based upon true repayment schedule associated with each bond attributable to the water system. NUA has five outstanding loans associated with the water utility. These loans include the NUA Refunding, the NUA Revenue Note Series 2016, Series 2017, and Series 2018. The payments on these loans will decrease from \$5.5 million in FY2032 to \$2.8 million in FY 2032.

Capital Improvement Program Costs

The capital improvement program includes costs associated with (1) future capital investments which NUA must make in the water system to ensure long-term physical sustainability of their existing assets and (2) capital investments NUA must make to comply with changing regulatory requirements associated with operating the system. The 10-year capital improvement program totals \$393.3 million and will be funded through a combination of rate revenue, connection charges, and state loans. Major projects include the Lake Thunderbird Augmentation (\$120.5 million), the 40-year line replacement program (\$23.0 million) and the chromium removal project (\$145.0 million). Including the debt financing of the large capital projects indicated above, payments on proposed new water debt will increase to \$21.1 million by FY 2032.

INDICATED REVENUE ADJUSTMENTS

Projected water sales revenue under existing rates is insufficient to meet annual operation and maintenance expense (O&M), payments on existing debt service, capital repair and replacement costs while also maintaining recommended and target utility reserve levels. To meet these requirements, a revenue increase of \$6.7 million is required in FY24 and with an additional increase required \$15.4 million in FY27. Figures 3 and 4 summarize the proposed water cash flow analysis.

Figure 1: Water Revenue with Proposed Increases and Expenditures

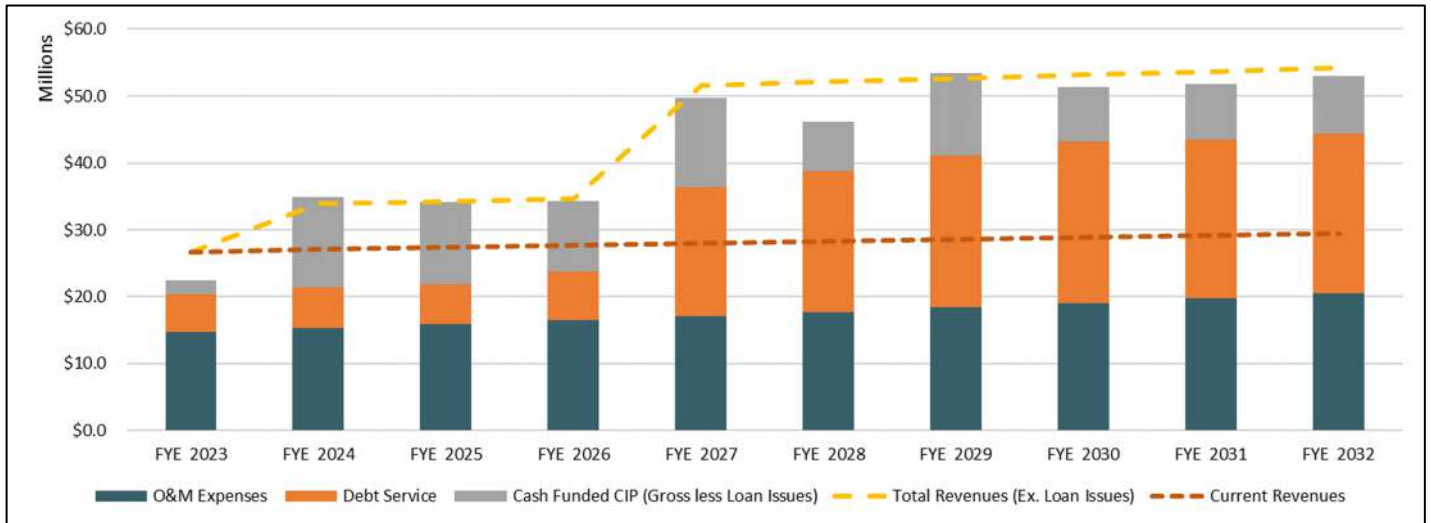
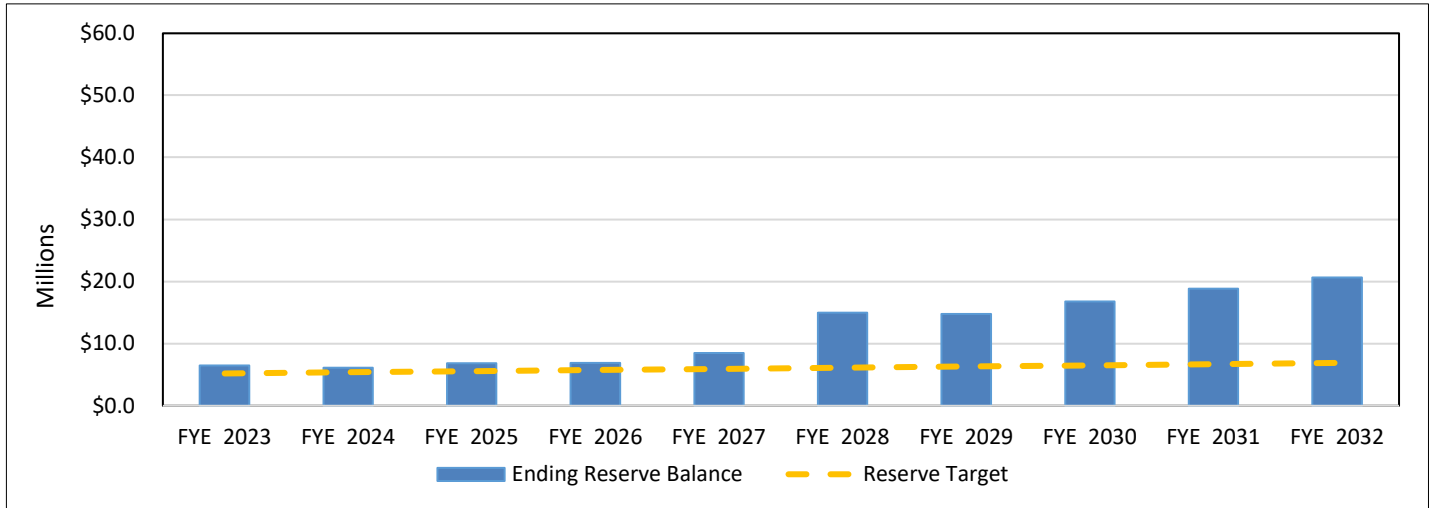


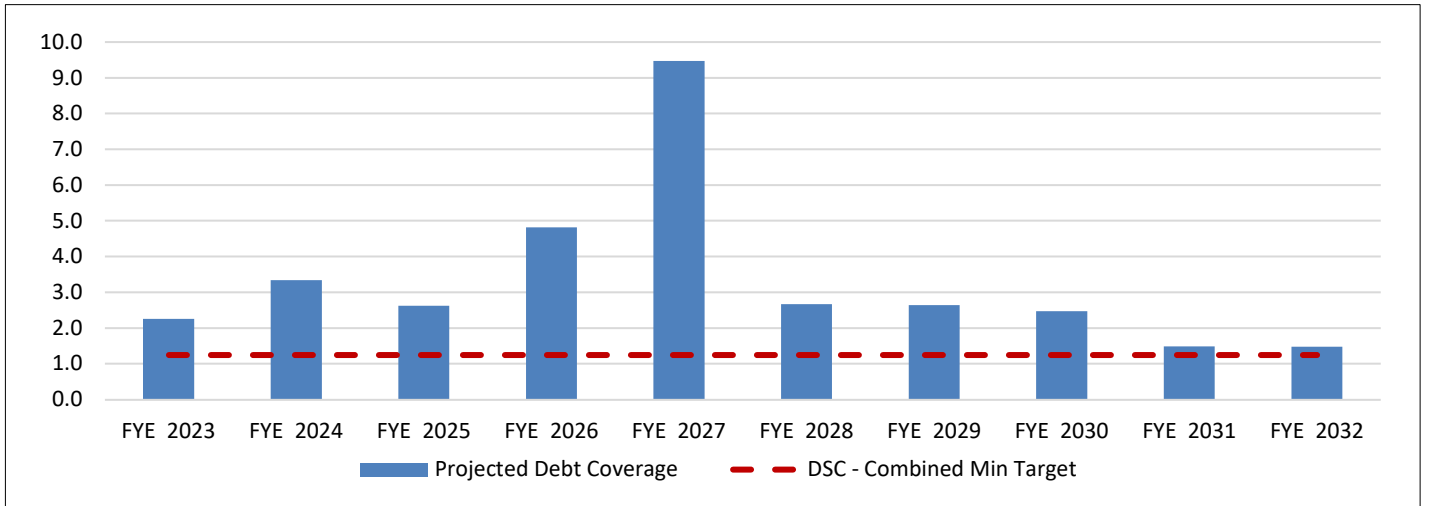
Figure 2: Water Ending Fund Balance and Target Reserves



DEBT SERVICE COVERAGE

Additionally, existing rates will not enable NUA to maintain a debt service coverage (DSC) ratio of 1.25 x annual debt service based on the current loan covenants. The annual DSC ratio is met through the study, when including connection charge revenue. The proposed revenue adjustments generate sufficient net income to meet requirements through the study period. Appendix A contains the detailed financial plan cash flow analysis tables. Figures 3 & 4 below summarize the recommended financial plan for the utility. Figure 5 shows the annual debt service coverage based on the proposed revenue adjustments.

Figure 3: Projected Combined Water and Wastewater Debt Service Coverage



Cost of Service Analysis

Raftelis completed a comprehensive cost of service analysis using standard methods supported by the American Water Works Association (AWWA) in its M1 manual, *Principles of Water Rates, Fees, and Charges*. This analysis determines the cost of providing water service to each customer class and guides the design of the proposed rates. While the financial plan analysis indicates *how much* total rate revenue is required, the cost of service analysis determines *from who* - or what is each class' responsibility to the total revenue requirement. The general steps of the cost of service analysis are described below and Figure 1 on the follow page illustrates the process.

1. **Revenue Requirement.** Determine the level of revenue required from rates. The revenue requirement includes expenditures in the operating fund: O&M, capital repair and replacement costs, reserves, and changes in fund balance.
2. **Cost functionalization.** Assign the detailed costs in the revenue requirements to functional areas in the system. Functional areas include water treatment, transmission and distribution, storage, source of supply, meters, and services, and billing and administrative costs. Costs are functionalized based on the facility that has the most influence on that expense. For example, chemical costs are most influenced by treatment processes so those costs would be allocated to the water treatment category.
3. **Demand parameters and customer characteristics.** Functional costs can be allocated to demand parameters and customer characteristics. Demand parameters include average day demands and peak demands. Customer characteristics include the number of accounts by meter size and bills. Each facility is designed to meet specific design requirements in the system. Water treatment facilities are designed and operated to meet maximum day demands. As a result, a portion of water treatment costs would be allocated to the average day demand category and a portion to the peak demand category.
4. **Units of service.** The units of service capture the demand and customer characteristics for each customer class. These characteristics include average day demand, peak demand, number of accounts by meter size, and the number of bills.
5. **Distribution of costs to customer classes.** Because customer classes are defined by their demand parameters (average day and peak demands) and the account makeup (meters by meter sizes), the allocated costs can be proportionately distributed to each class based on their specific demand and customer characteristics. For example, if the residential customer class represents 50% of total peak day demands, they would be allocated 50% of the allocated peak day demand costs.

Figure 4: Water Cost of Service Process

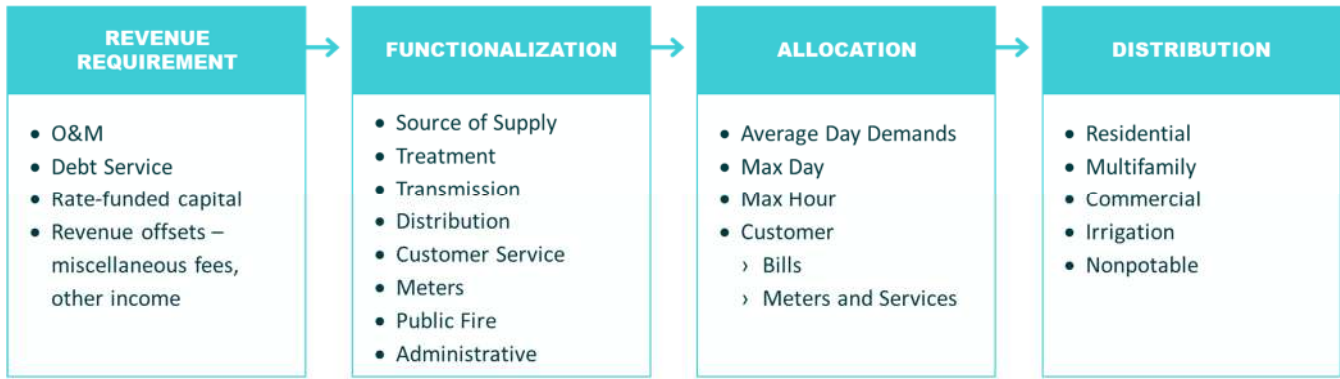


Table 1 summarizes the results of the cost of service analysis compared to the revenue at current rate adjusted for the proposed revenue adjustment. The FY24 revenue requirement, or revenue from rates, totals \$28.8 million. The cost of service analysis reallocates the revenue requirement to the customer classes based on their demand and customer characteristics (see Figure 4, Allocation). This process simply reallocates costs but does hence the same total shown in column 2 and column 3 of Table 1. This analysis shows that that revenue from residential customers with the proposed increase does not meet the cost to provide service. Conversely, commercial rate revenue with the proposed increase recovers more than the cost to provide service.

Table 1: Comparison of Test Year Water Cost of Service to Revenue at Current Rates

(1) Customer Type	(2) FY24 Cost of Service [1]	(3) FY24 Revenue with Increase [1,2]	(4) Change - \$
Residential	\$21,694,058	\$22,429,857	(\$735,799)
Commercial	\$5,144,263	\$4,548,134	\$596,129
Irrigation	\$1,923,023	\$1,783,352	\$139,670
Total	\$28,761,343	\$28,761,343	\$0

[1] Excludes CIC revenue
 [2] Represents FY24 revenue at current rates with the proposed revenue adjustment

Water Rate Structure Alternatives

As there is no ‘perfect’ rate structure, Raftelis designed multiple rate structures which are expected to meet the revenue requirements for the water utility. These were:

- **Across-the-Board.** This structure simply applied the overall rate increase for FY23 to the existing rate structure.
- **Fixed Charge Recovery.** This structure focused on increasing the level of revenue from the monthly base fee. The volume rate structure retained the 4-tier rates however, the price ratios for tier 3 and tier 4 rates were increased to further the conservation pricing signal.
- **Middle of Road.** This structure was a blend of Across-the-Board and Fixed Charge Recovery. The fixed charge was increased slightly with the remainder of the costs recovered in the volume rate.

For each of the alternatives, the rates were designed to recover each customer class’s identified cost of service, as determined in the cost of service analysis. Two of the rate structures, the Across-the-Board and Fixed Charge recovery options, were presented at the February 7, 2023 City Council Study Session. Following the Study Session, the NUA requested the development of a third option which blended the first two, noted above as the Middle of Road option. For each structure, the recommended rates were designed to recover the total FY 2024 revenue requirement of \$28.76 million and indicating an increase of \$6.7 million. Figure 6 shows the proposed rate structure alternatives.

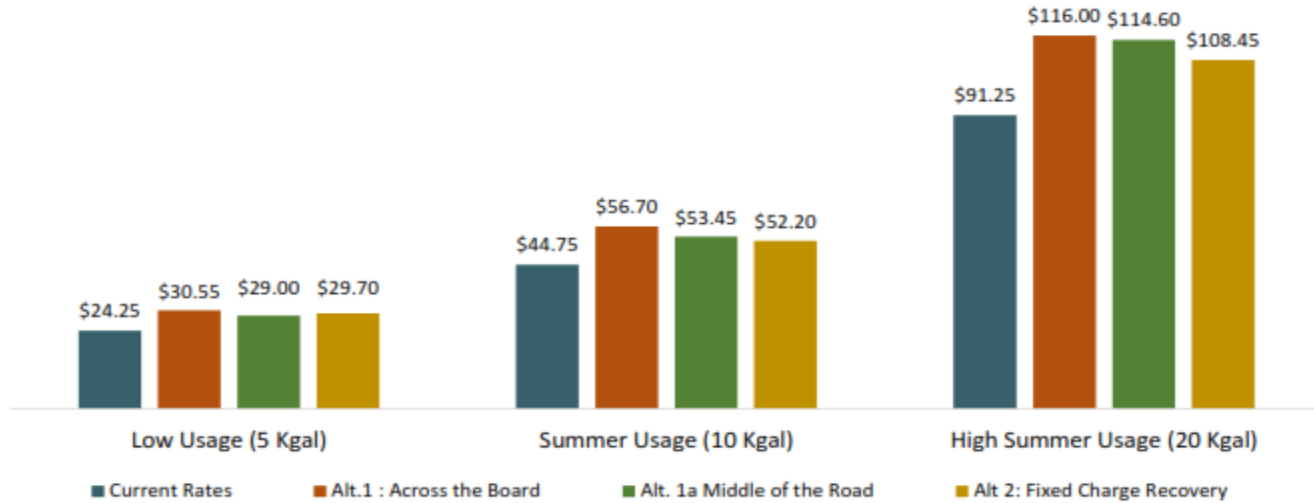
Table 2: Comparison of Current and Proposed Water Rate Structure Alternatives

Description	Current Rates	Alt 1 Across the Board	Alt. 1a Middle of the Road	Alt. 2 Fixed Charge Recovery
RESIDENTIAL				
Base Fee, \$ per Bill	\$6.00	\$7.70	\$8.70	\$10.90
CIC, \$ per Bill	1.50	1.50	1.50	1.50
Volume Rates, \$ per 1,000 gallons				
Tier 1 0 - 5 Kgal	\$3.35	\$4.27	\$3.76	\$3.46
Tier 2 5 - 15 Kgal	4.10	5.23	4.89	4.50
Tier 3 5 - 20 Kgal	5.20	6.63	7.34	6.75
Tier 4 > 20 Kgal	6.80	8.67	10.34	9.51
COMMERCIAL				
Base Fee, \$ per Bill	\$6.00	\$7.70	\$8.70	\$10.90
Volume Rates, \$ per 1,000 gallons				
Tier 1 0 - AWC	\$3.80	\$5.62	\$4.78	\$4.69
Tier 2 > AWC	4.20	6.21	7.18	7.04
IRRIGATION				
Base Fee, \$ per Bill	\$6.00	\$7.70	\$8.70	\$10.90
CIC, \$ per Bill	1.50	1.50	1.50	1.50
Volume Rates, \$ per 1,000 gallons				
Tier 1 0 - 5 Kgal	\$3.35	\$4.27	\$3.76	\$3.46
Tier 2 5 - 15 Kgal	4.10	5.23	4.89	4.50
Tier 3 5 - 20 Kgal	5.20	6.63	7.34	6.75
Tier 4 > 20 Kgal	6.80	8.67	10.34	9.51

PROJECTION OF MONTHLY BILLS

The chart below provides guidance on the expected monthly bills for a single residential customer with varying levels of consumption.

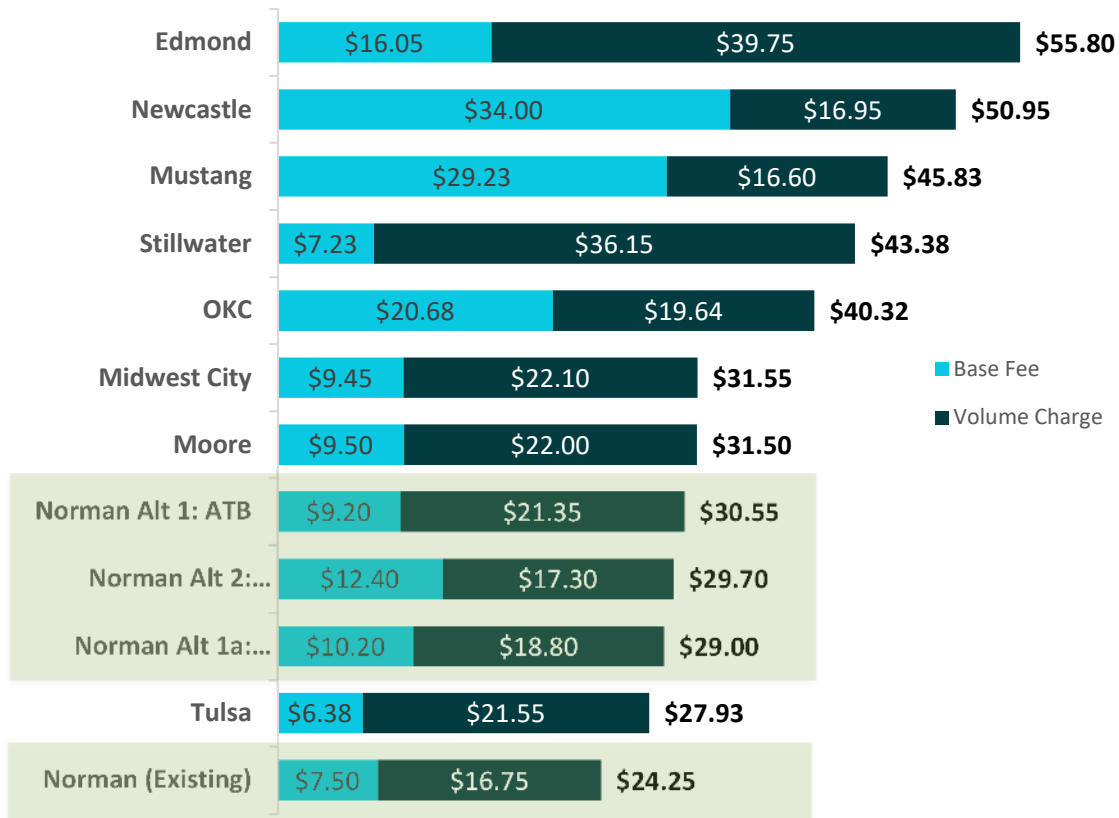
Figure 5: Projected Monthly Residential Water Bills at Various Levels of Consumption



COMPARISON TO PEER COMMUNITIES

For the sake of comparison, Raftelis completed a benchmarking exercise to compare the Low Usage Bills from the preceding chart against the calculated bills for similar usage in peer communities. The chart below shows the result of this analysis. The existing and proposed bills shown in Figure 8 include the base and volumetric charges for a range of customers using between 5,000 gallons and 20,000 gallons of water per month. While not included in this chart, the Middle of the Road values fall between the Alternative 1 & 2 values.

Figure 6: Monthly Water Bills for a Customer with Usage of 5,000 gal/month



Wastewater Utility

Introduction

NUA owns and operates a large base of infrastructure associated with the collection, treatment, and disposal of wastewater. To pay for these activities, the utility maintains several independently accounted-for funds. The largest of these funds is the Water Reclamation Fund (WRF) which pays for the operations of the primary system assets and investments to those assets with the exception of expenses covered by the Sewer Maintenance Fund (Fund 321). Revenues to this fund are derived from a mixture of fixed service charges and volumetric charges. The WRF fixed and volumetric charges, their sufficiency to meet projected system expenses, and needed modifications to the existing rates were evaluated as part of this study. Volumetric charges are assessed based upon the existing practice of billing sewer volumes based upon each customer's average winter consumption (AWC).

Wastewater Financial Plan

Using data provided by NUA, Raftelis developed a financial plan which included projection of revenues, O&M expenses, existing debt service and the financing of needed capital projects. While NUA has several funds associated with its wastewater operations, the tables and figures below all relate to the Water Reclamation Fund (WRF) portion of those operations, which constitute the large preponderance of both revenues and expenses associated with overall wastewater operations. Importantly, based upon an examination of the expenses and revenues associated with the other funds (sewer maintenance, etc), no modification to existing policies or charges is necessary or recommended in the next several years for the other wastewater funds to maintain their fiscal health.

SOURCES OF FUNDS

The wastewater utility (WRF) cash flow tracks the finances associated with the operations of the wastewater utility, including normal operations and capital investments. The FY23 beginning balance is \$1.5 million.

Operating revenues consist of a blend of fixed and variable charges, including services charges and CIC based upon each customer's unit count and a volumetric charge based upon their AWU (average winter usage of water). While customer impact charts in the section below have the maintenance charge included in the monthly bill calculation to provide the full cost which customers will see under the proposed rates, the maintenance funds do not flow into WRF accounts. At current FY23 rates, the combined WRF fixed and variable revenue sources generate approximately \$12 million annually. Under the recommended financial plan, the annual revenues needed from these sources will increase to almost \$16 million for FY32. The wastewater financial plan assumes an annual customer growth rate of 1.2% and volumetric growth rate of 0.6%, based upon recent historical billing patterns. In addition to rate revenue, state loans are proposed for use in funding the at least the next five years of the 10-year capital improvement program. The proposed state loans amount to approximately \$16.4 million and will replace earlier debt that is being repaid over this period.

USES OF FUNDS

Operations & Maintenance Costs

The first expense included in the financial plan was current operational costs. Significant contributors to this type of cost include labor, chemicals, electricity, and all the other expenses incurred as part of the normal operations of the utility, including cost allocation transfers to other City departments. To project these costs for future years, these costs were escalated using industry standard practices and took into account the current, higher than normal inflationary environment. In total, the annual operational costs of the wastewater utility are expected to grow from approximately \$9 million in FY24 to \$11 million in FY29.

Debt Service Costs

The second class of expense included in the financial plan was the debt repayment obligations of the utility for loans taken in the past to construct capital system investments and upgrades. The debt service schedule carried within the financial plan is based upon the actual schedule and amounts associated with all debt currently attributable to the WRF. Based upon current outstanding debts, the wastewater utility will have approximately \$2.5 million in payments for the next several fiscal years, dropping to approximately \$1.2 million in FY2028, the final year of payments on existing debt. New debt associated with future capital investments is projected to grow to approximately \$1.2 million over that same time period.

Capital Investment Costs

The final class of expense included in the financial plan are the costs associated with making needed capital investments in the system. Specifically, these were limited to non-growth capital projects which are required to account for aging plant facilities and equipment and comply with the regulatory requirements associated with permits for the existing treatment infrastructure. A table of the capital projects which were included in our evaluation are included in Appendix B. For the past several rate setting cycles, NUA has been in the practice of funding most or all of its wastewater capital investments using cash from rate receipts and reserves. As a result of this study and rate setting, Raftelis is recommending that NUA issue debt to finance its wastewater capital program through at least 2028. There are two reasons for this recommendation:

1. The majority of debt service from outstanding bonds is maturing over the next two to three years, meaning that those earlier debts will have been fully repaid and no further payments on those notes is required. This provides the opportunity to borrow money without adding to the utility's overall debt burden, stabilizing rate revenue requirements and maintaining the relative proportion of the utility budget dedicated to debt repayment; and
2. Due to the size of several projects in the WRF capital improvement plan (CIP), debt financing these projects is the only way to avoid a significantly larger, immediate increase in the rates-based revenues which would be required to cash finance these projects.

The net result from this change in capital financing practices will be that the payment associated with debt which is due to mature will be replaced with new debt service payments, minimizing the impact of needed capital projects on the current fixed service charges and volumetric rates. In essence, old capital debt will be replaced with new capital debt resulting in a minimized change in the utility's operating revenue requirements and allowing the utility to build sufficient reserves to re-commence cash-financed capital investments in FY2029.

Over the next five years, the escalated costs associated with the current capital investment plan total approximately \$16.4 million and will result in new annual debt service payments of between \$1 and \$1.2 million.

INDICATED REVENUE ADJUSTMENTS

The financial plan compiles a summation of the projected costs described above and compares current revenues against future expenses. A graphical projection of the financial plan, the recommended revenues to maintain the utility's fiscal health, and the resulting reserves balances is presented in the two charts noted as Figures 9 & 10. The debt service indicated on the financial plan chart includes all projected debt service obligations associated with the use of debt-financed capital investments through FY2028.

The projection of utility operating revenue includes an approximately 10% increase in revenue from fixed and volumetric charges in FY2024 and an approximately 15% increase in FY2029. The adjustment for FY2024 is

included in the rate recommendations included in this report. The *pro forma* which forms the basis for the charts is included in Appendix B.

Figure 7: NUA - WRF Revenues and Expenditures

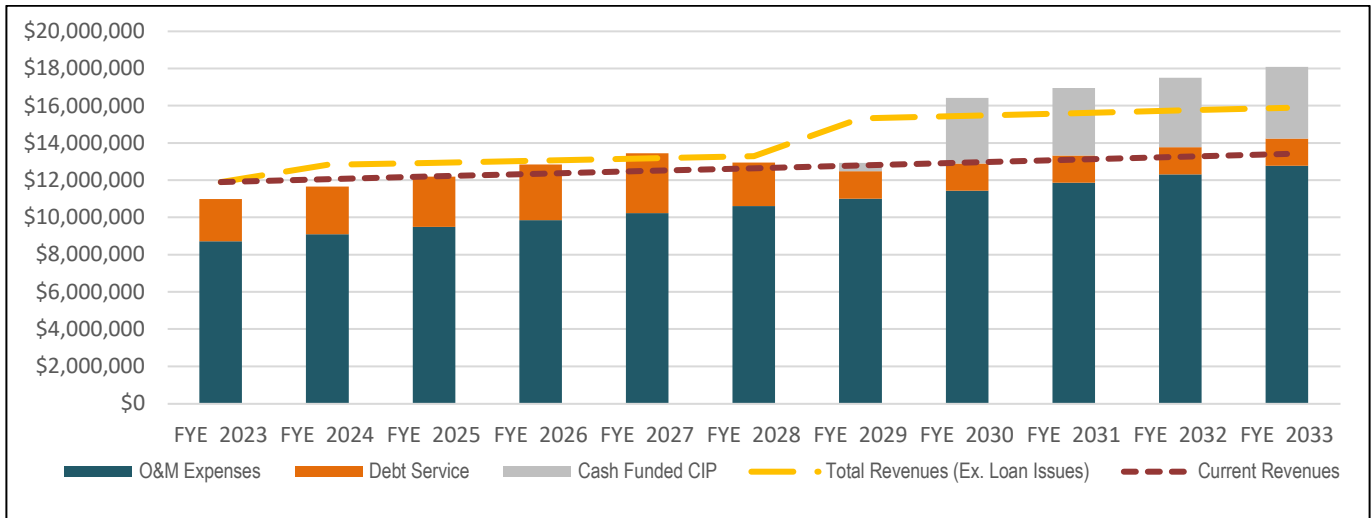
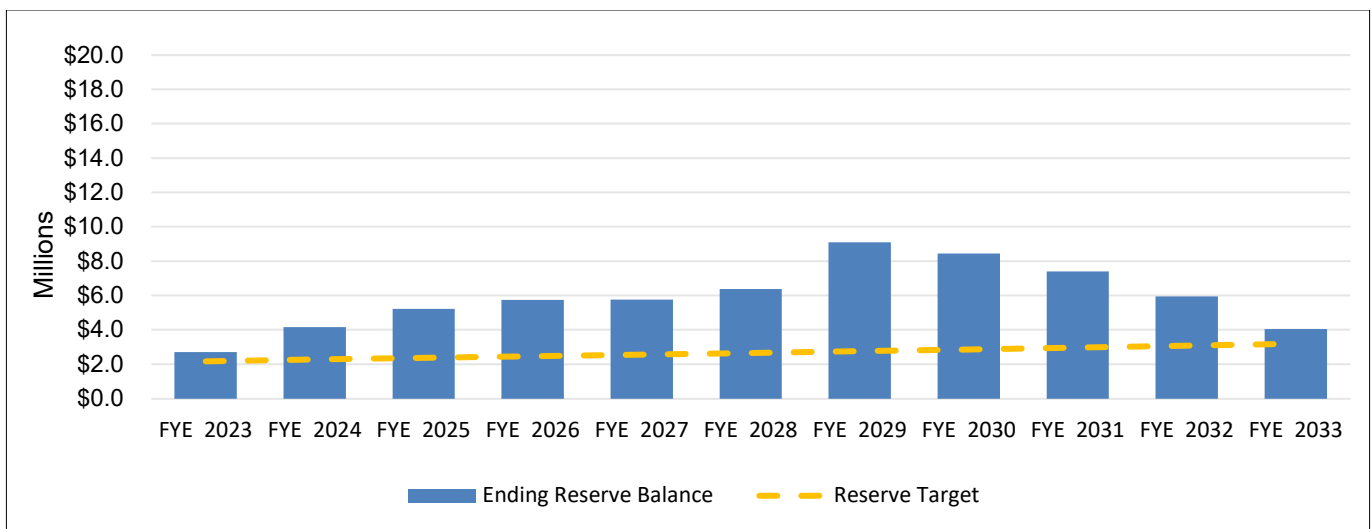


Figure 8: Wastewater Ending Fund Balance and Reserve Target



Wastewater Rate Structure Alternatives

Consistent with the NUA policies and goals discussed earlier, Raftelis designed two sets of rates for wastewater service. Both of the options are expected to result in financial performance indicated in the preceding financial plan charts. The first option is an across the board (ATB) increase of the Base service charge and volumetric rates. The second option (FCR) increases the fixed charge (thereby providing additional stability in the overall revenue generation) while maintaining the current volumetric rate in an effort.

Table 3: Comparison of Current and Proposed Wastewater Rate Alternatives

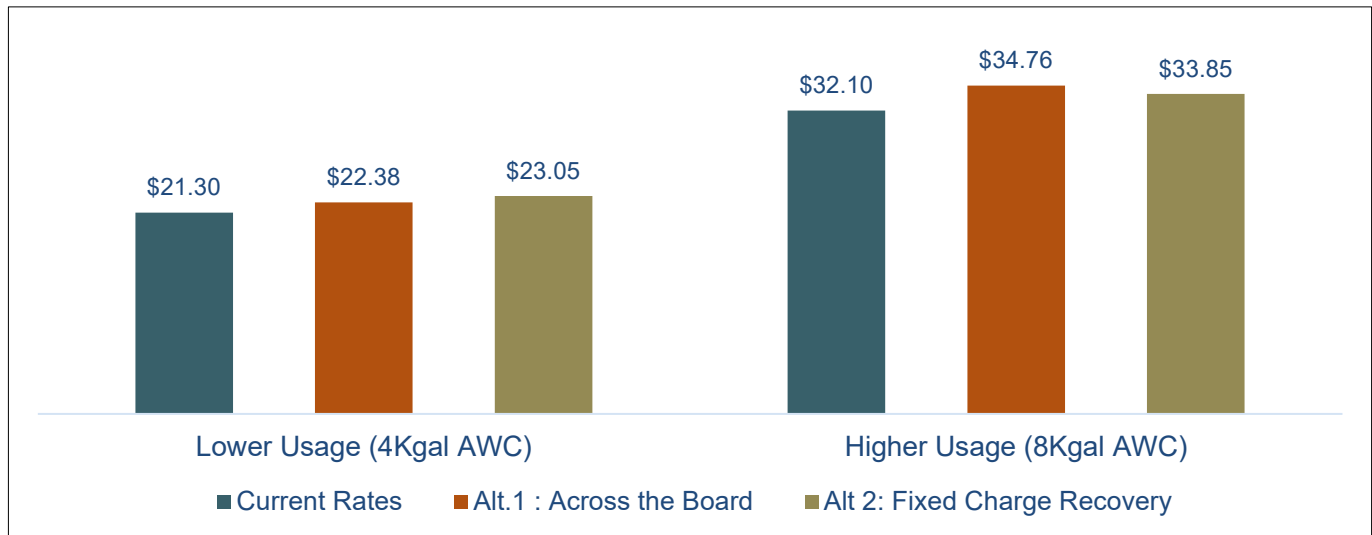
Description	FY24 Existing	Alt. 1 ATB	Alt. 2 FCR
RESIDENTIAL			
Base Fee, \$ per Bill	\$5.00	\$5.50	\$6.75
Volume Rates, \$ per 1,000 gallons			
Billed Volume	2.70	2.97	2.70
COMMERCIAL			
Base Fee, \$ per Bill	\$5.00	\$5.50	\$6.75
Volume Rates, \$ per 1,000 gallons			
Billed Volume (85% of Water Use)	2.70	2.97	2.70

As previously indicated, either option will allow NUA to fully fund operations and capital investment (assuming the transition to debt-financed capital investment) while delivering the financial performance needed to ensure the long-term fiscal health of the utility.

PROJECTION OF MONTHLY BILLS

The chart below provides guidance on the expected monthly bills for a single residential unit customer with varying AWC.

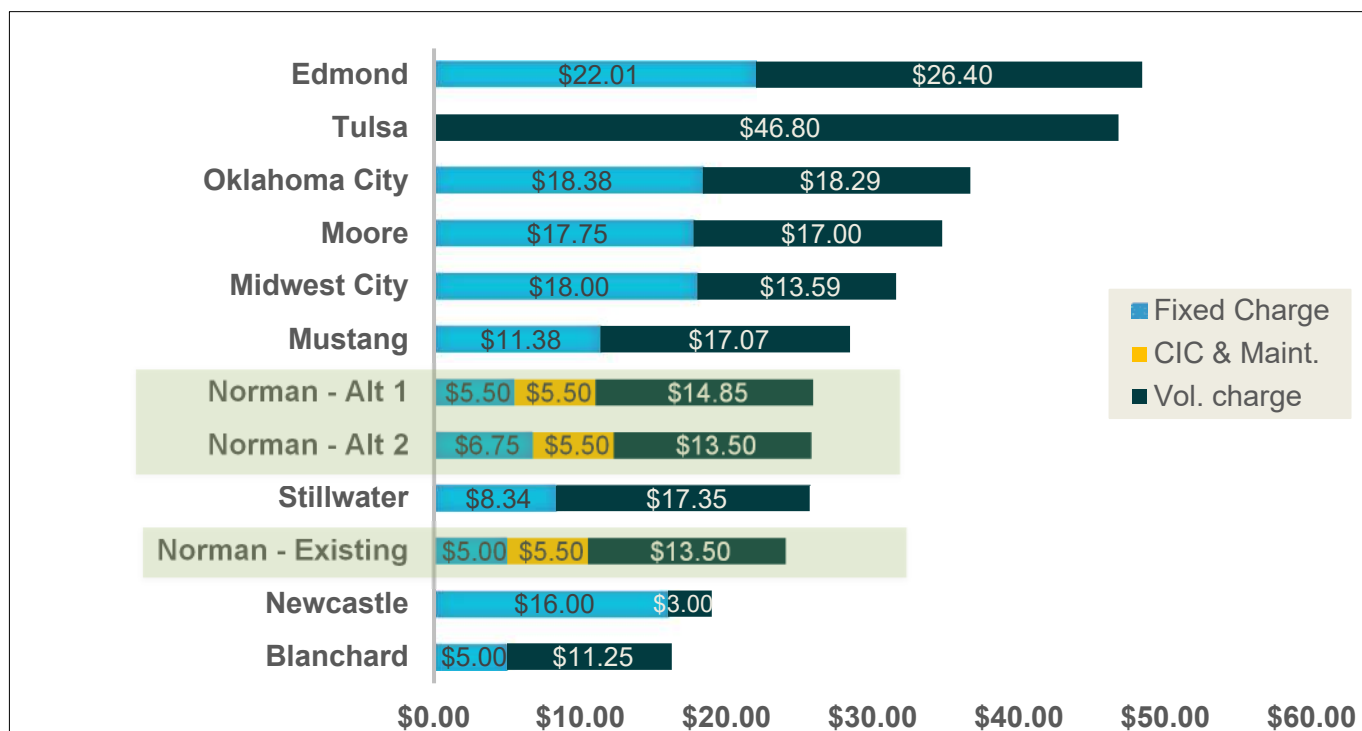
Figure 9: Projected Monthly Wastewater Bills for Hypothetical Customers



COMPARISON TO PEER COMMUNITIES

Finally, Raftelis benchmarked expected monthly sewer bills of the current and both proposed rate options against peer communities. Figure 13 below shows the result of this analysis. As noted on the chart, the changes to the fixed charges and rates are not applicable to the existing maintenance or CIC charges, both of which remain unchanged from the current levels.

Figure 10: Monthly Wastewater Bills for a Customer with 5,000 gal/month AWC



Reliance on Client Provided Data

During this project, NUA (and/or its representatives) provided Raftelis with a variety of technical information, including cost and revenue data. Raftelis did not independently assess or test for the accuracy of such data – historic or projected. Raftelis has relied on this data in the formulation of our findings and subsequent recommendations, as well as in the preparation of this report. Raftelis also relied on cost allocation data provided by the NUA needed to complete the cost-of-service analysis.

There are often differences between actual and projected data. Some of the assumptions used for projections in this report will not be realized, and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the data or results projected in this report and actual results achieved, and those differences may be material. As a result, Raftelis takes no responsibility for the accuracy of data or projections provided by or prepared on behalf of NUA, nor do we have any responsibility for updating this report for events occurring after the date of this report.

APPENDIX A:
**WATER UTILITY
FINANCIAL PLAN,
COST OF SERVICE, AND
RATE DESIGN TABLES**

City of Norman, OK - Norman Utilities Authority (NUA)
 Water Utility
 Cash Flow Analysis

Line No	Description	Fiscal Year Ending										
		FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	
1	Beginning Fund Balance	\$1,452,000	\$6,489,635	\$6,198,941	\$6,918,491	\$7,023,754	\$8,718,422	\$15,239,429	\$15,111,556	\$17,188,352	\$19,316,575	
	Sources of Funds											
2	Fixed Charges	\$3,971,693	\$5,243,950	\$5,297,439	\$5,351,472	\$8,217,207	\$8,301,023	\$8,385,693	\$8,471,227	\$8,557,634	\$8,644,922	
3	Residential Variable	13,378,721	17,664,345	17,844,521	18,026,536	27,679,817	27,962,152	28,247,365	28,535,489	28,826,551	29,120,581	
4	Commercial Variable	4,433,014	5,853,048	5,912,749	5,973,059	9,171,656	9,265,207	9,359,712	9,455,181	9,551,624	9,649,050	
5	Capital Improvement Charge	2,092,878	2,114,225	2,135,790	2,157,575	3,312,966	3,346,758	3,380,895	3,415,380	3,450,217	3,485,409	
6	Total Rate Revenue	\$23,876,305	\$30,875,568	\$31,190,499	\$31,508,642	\$48,381,646	\$48,875,139	\$49,373,666	\$49,877,277	\$50,386,025	\$50,899,963	
	Other Non-Rates Revenues											
7	Penalties	\$337,126	\$340,497	\$343,902	\$347,341	\$350,815	\$354,323	\$357,866	\$361,445	\$365,059	\$368,710	
8	Connection Fees	697,845	833,868	842,373	850,966	859,645	868,414	877,272	886,220	895,259	904,391	
9	Meter Sales	187,018	188,888	190,777	192,685	194,612	196,558	198,523	200,509	202,514	204,539	
10	Interdepartmental	183,593	185,429	187,283	189,156	191,048	192,958	194,888	196,837	198,805	200,793	
11	Rental	356,975	360,545	364,150	367,792	371,470	375,184	378,936	382,726	386,553	390,418	
12	Interest	161,220	162,832	164,461	166,105	167,766	169,444	171,138	172,850	174,578	176,324	
13	Cost Allocation	770,670	778,377	786,160	794,022	801,962	809,982	818,082	826,263	834,525	842,870	
14	Asset Sales	127,815	129,093	130,384	131,688	133,005	134,335	135,678	137,035	138,405	139,789	
15	Other	103,960	105,000	106,050	107,110	108,181	109,263	110,356	111,459	112,574	113,700	
16	Total Non-Rate Revenue	\$2,926,222	\$3,084,529	\$3,115,541	\$3,146,865	\$3,178,503	\$3,210,460	\$3,242,739	\$3,275,341	\$3,308,272	\$3,341,534	
	Proposed Bonds and Loans											
17	Proposed State Loans	1,900,000	5,250,000	-	31,269,420	182,888,128	24,426,474	25,159,268	25,914,046	-	-	
18	Proposed Revenue Bonds	-	-	-	-	-	-	-	-	-	-	
19	Total Bonds and Loans	\$1,900,000	\$5,250,000	\$0	\$31,269,420	\$182,888,128	\$24,426,474	\$25,159,268	\$25,914,046	\$0	\$0	
20	Total Sources of Funds	\$28,702,527	\$39,210,097	\$34,306,040	\$65,924,927	\$234,448,278	\$76,512,073	\$77,775,672	\$79,066,664	\$53,694,297	\$54,241,497	
	Total Uses of Funds											
21	Operation and Maintenance Expense	\$12,946,273	\$13,528,734	\$14,137,725	\$14,668,162	\$15,218,589	\$15,789,762	\$16,382,468	\$16,997,520	\$17,635,767	\$18,298,085	
22	Interfund Transfers	1,111,800	1,145,154	1,179,509	1,214,894	1,251,341	1,288,881	1,327,547	1,367,374	1,408,395	1,450,647	
	Debt Service											
23	NUA Refunding	\$1,477,533	\$1,473,618	\$1,484,118	\$1,488,818	\$737,775	\$0	\$0	\$0	\$0	\$0	
24	NUA Revenue Note, Refunding Series 2	768,560	769,232	764,570	\$769,629	769,242	768,575	772,520	771,017	384,236	-	
25	NUA Series 2017 Drinking Water SRF Lc	2,316,616	2,281,438	2,245,342	\$2,208,259	2,170,118	2,130,920	2,090,594	2,049,140	2,006,417	1,962,636	
26	NUA Series 2018 Primiserry Note	888,795	890,525	890,955	\$890,085	887,915	887,245	888,200	891,155	888,165	886,180	
27	Master Conservancy Debt	71,229	70,958	70,674	70,165	-	-	-	-	-	-	

City of Norman, OK - Norman Utilities Authority (NUA)
 Water Utility
 Cash Flow Analysis

Table A-1

Line No	Description	Fiscal Year Ending										
		FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	
28	Proposed	133,686	503,082	503,082	2,703,232	15,571,438	17,290,111	19,060,344	20,883,684	20,883,684	21,119,394	
29	Capital Improvement Program	\$3,950,400	\$18,838,050	\$12,310,515	\$41,806,421	\$196,147,192	\$31,835,572	\$37,381,871	\$34,029,979	\$8,359,411	\$8,610,193	
30	Total Uses of Funds	\$23,664,892	\$39,500,791	\$33,586,490	\$65,819,664	\$232,753,610	\$69,991,067	\$77,903,544	\$76,989,869	\$51,566,074	\$52,327,135	
31	Annual Surplus/(Deficiency)	\$5,037,635	(\$290,694)	\$719,550	\$105,263	\$1,694,668	\$6,521,007	(\$127,872)	\$2,076,796	\$2,128,223	\$1,914,362	
32	Ending Fund Balance	\$6,489,635	\$6,198,941	\$6,918,491	\$7,023,754	\$8,718,422	\$15,239,429	\$15,111,556	\$17,188,352	\$19,316,575	\$21,230,937	
Target Reserves												
33	Operating (8% of Line 19)	\$1,124,646	\$1,173,911	\$1,225,379	\$1,270,644	\$1,317,594	\$1,366,291	\$1,416,801	\$1,469,192	\$1,523,533	\$1,579,899	
34	Capital Reserve (1 year's Depreciation Ex	\$4,100,000	\$4,223,000	\$4,349,690	\$4,480,181	\$4,614,586	\$4,753,024	\$4,895,614	\$5,042,483	\$5,193,757	\$5,349,570	
35	Total Target Reserves	\$5,224,646	\$5,396,911	\$5,575,069	\$5,750,825	\$5,932,180	\$6,119,315	\$6,312,416	\$6,511,674	\$6,717,290	\$6,929,469	
36	Over/(Under) Reserves	\$1,264,989	\$802,030	\$1,343,423	\$1,272,929	\$2,786,242	\$9,120,114	\$8,799,141	\$10,676,678	\$12,599,285	\$14,301,468	
31	Annual Revenue Increase	0.0%	30.7%	0.0%	0.0%	52.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
37	Cumulative Increase	0.0%	30.7%	30.7%	30.7%	98.7%	98.7%	98.7%	98.7%	98.7%	98.7%	
38	Water Utility Debt Service Coverage	1.88	2.87	2.83	2.04	1.58	1.50	1.38	1.28	1.29	1.29	

City of Norman, OK - Norman Utilities Authority (NUA)
 Water Utility
 Projected Operation and Maintenance Expense

Table A-2

Line No	Description	Fiscal Year Ending										
		FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	
1	Salaries / Benefits	\$4,689,677	\$4,877,264	\$5,072,355	\$5,249,887	\$5,433,633	\$5,623,810	\$5,820,644	\$6,024,366	\$6,235,219	\$6,453,452	
2	Supplies / Materials	3,134,440	3,291,162	3,455,720	3,593,949	3,737,707	3,887,215	4,042,704	4,204,412	4,372,588	4,547,492	
3	Services / Maintenance	3,063,108	3,216,263	3,377,077	3,512,160	3,652,646	3,798,752	3,950,702	4,108,730	4,273,079	4,444,002	
4	Internal Services	263,506	276,681	290,515	302,136	314,221	326,790	339,862	353,456	367,595	382,298	
5	Cost Allocations	1,861,667	1,936,134	2,013,579	2,084,054	2,156,996	2,232,491	2,310,628	2,391,500	2,475,203	2,561,835	
6	Emp Turnover Savings	(66,125)	(68,770)	(71,521)	(74,024)	(76,615)	(79,296)	(82,072)	(84,944)	(87,917)	(90,994)	
7	Inter-Fund Transfers	1,111,800	1,145,154	1,179,509	1,214,894	1,251,341	1,288,881	1,327,547	1,367,374	1,408,395	1,450,647	
8	Total Operation and Maintenance Expense	\$14,058,073	\$14,673,888	\$15,317,234	\$15,883,056	\$16,469,929	\$17,078,643	\$17,710,015	\$18,364,894	\$19,044,162	\$19,748,732	

City of Norman, OK - Norman Utilities Authority (NUA)

Table A-4

Water Utility

Test Year Revenue Requirement

Line No.	Description	Operating Expense	Capital Expense	Total
Revenue Requirement				
1	Operation and Maintenance Expense	13,528,734		13,528,734
	Incremental OKC Water Cost (3 mgd)	0		0
	Interfund Transfers	1,145,154		1,145,154
2	Existing Debt Service		5,485,771	5,485,771
3	Proposed Debt Service		503,082	503,082
4	Capital Improvement Program		18,838,050	18,838,050
5	Total Revenue Requirement	14,673,888	24,826,903	39,500,791
Revenue Requirement Adjustments				
Proposed Bonds and Loans				
6	Penalties	(340,497)		(5,250,000)
7	Connection Fees		(833,868)	(340,497)
8	Meter Sales	(188,888)		(833,868)
9	Interdepartmental	(185,429)		(188,888)
10	Rental	(360,545)		(185,429)
11	Interest	(162,832)		(360,545)
12	Cost Allocation	(778,377)		(162,832)
13	Asset Sales	(129,093)		(778,377)
14	Other	(105,000)		(129,093)
15	CIC		(2,114,225)	(105,000)
16	Operating Reserve Increase (Decrease)		(290,694)	(2,114,225)
17	Total Adjustments	(2,250,661)	(8,488,787)	(10,739,448)
18	Subtotal	12,423,228	16,338,116	28,761,343
19	Net Revenue Requirement			28,761,343

City of Norman, OK - Norman Utilities Authority (NUA)

Water Utility

Allocation of Non-Rate Revenue and O&M Expenses

Line No.	Description	Volume			Customer Related				Total	Indirect	Total
		Maximum Day Demand	Maximum Hour Demand	Meters & Services	Billing	Imp. Fee (CIC)	Capital	Fire Protection			
O&M Expense											
1	LAND	-	-	-	-	-	-	-	-	-	-
2	SOURCE OF SUPPLY	772,406	772,406	-	-	-	-	-	-	-	772,406
3	RAW WATER LINES	-	-	-	-	-	-	-	-	-	-
4	WELLS	919,302	377,047	-	-	-	-	-	-	-	919,302
5	Water Treatment Plant	5,369,403	2,202,234	-	-	-	-	-	-	-	5,369,403
6	Treated Storage	-	-	-	-	-	-	-	-	-	-
7	Transmission Mains	2,824,181	1,158,323	-	-	-	2,824,181	-	-	-	5,648,361
8	Distribution Mains	686,939	187,830	-	-	-	-	-	-	-	686,939
9	Treated Pumping	-	-	-	-	-	-	-	-	-	-
10	Meters and Services	1,000,127	-	1,000,127	-	-	-	-	-	-	1,000,127
11	HYDRANTS	1,239	-	620	-	-	-	-	-	-	1,239
12	VEHICLES	84,852	-	-	-	-	-	-	-	84,852	84,852
13	EQUIPMENT	349,308	-	-	-	-	-	-	-	349,308	349,308
14	BUILDINGS/EQUIPMENT	8,139	-	-	-	-	-	-	-	-	-
15	BILLING	843,174	-	-	-	-	-	-	-	-	-
16	Infrastructure Indirect	46,931	-	-	-	-	-	-	-	-	-
17	All Other Indirect	1,767,887	-	-	-	-	-	-	-	-	-
18	Total O&M Expense	14,673,888	3,925,434	229,599	1,000,747	2,824,181	0	0	434,160	14,831,938	
19	<i>Percent of Total</i>		26.5%	1.5%	6.7%	19.0%	0.0%	0.0%	2.9%		
20	<i>Reallocation of Indirect</i>		27.3%	1.6%	7.0%	19.6%	0.0%	0.0%			
22	Reallocated O&M Exper	14,831,938	4,043,804	236,523	1,030,924	2,909,343	-	-	-	-	
23	<i>Reallocated O&M Expen.</i>	<i>100.0%</i>	<i>27.3%</i>	<i>1.6%</i>	<i>7.0%</i>	<i>19.6%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	
24	Test Year Net O&M	12,423,228	3,387,089	198,111	863,502	2,436,865	-	-	-	-	

Table A-9

City of Norman, OK - Norman Utilities Authority (NUA)
 Water Utility
 Units of Service

Line No.	Customer Class	Water Use		Maximum Day Demand		Maximum Hour Demand		Bills		
		Annual 1,000 gal	Average Day 1,000 gal/day	Demand Factor	Total Demand gpd	Extra Demand gpd	Total Demand gpd		Extra Demand gpd	
1	Residential	3,328,869	9,120	217%	19,825	10,705	326%	29,737	9,912	607,691
2	Commercial	839,567	2,300	226%	5,203	2,903	339%	7,805	2,602	41,759
3	Irrigation	217,774	597	373%	2,225	1,629	559%	3,338	1,113	12,765
4	OU	15,000	41	223%	92	50	334%	137	46	576
5	Total	4,401,211	12,058		27,345	15,287		41,017	13,672	662,791

City of Norman, OK - Norman Utilities Authority (NUA)

Water Utility

Unit Costs of Service

Table A-10

Line No.	Description	Total	Volume		Customer Related		
			Base	Maximum Day Demand	Maximum Hour Demand	Meters & Services	Billing
Cost of Service							
1	Operation and Maintena	12,423,228	5,537,661	3,387,089	198,111	863,502	2,436,865
2	Capital Cost	16,338,116	8,353,365	5,774,570	2,210,180	0	0
3	Total Cost of Service	28,761,343	13,891,026	9,161,660	2,408,291	863,502	2,436,865
4	<i>Allocation of Revenue Re</i>	100%	48%	32%	8%	3%	8%
Units of Service							
Units			<u>1,000 gal</u>	<u>gpd</u>	<u>gpd</u>	<u>Equivalent Meter Cost</u>	<u># Bills</u>
Units of Service							
5	Residential		3,328,869	10,705	9,912	607,691	607,691
6	Commercial		839,567	2,903	2,602	41,759	41,759
7	Irrigation		217,774	1,629	1,113	12,765	12,765
8	OU	100.0%	15,000	50	46	576	576
9	Total Units of Service		4,401,211	15,287	13,672	662,791	662,791
Unit Costs of Service							
10	Residential		\$3.16	\$599.32	\$176.14	\$1.30	\$3.68
11	Commercial		\$3.16	\$599.32	\$176.14	\$1.30	\$3.68
12	Irrigation		\$3.16	\$599.32	\$176.14	\$1.30	\$3.68
13	OU		\$3.16	\$599.32	\$176.14	\$1.30	\$3.68

City of Norman, OK - Norman Utilities Authority (NUA)
 Water Utility
 Distribution of Costs to Customer Classes

Table A-11

Line No.	Description	Total	Base	Volume		Customer Related Meters & Services	Billing
				Maximum Day Demand	Maximum Hour Demand		
Unit Costs of Service - \$/unit							
1	Residential		\$3.16	\$599.32	\$176.14	\$1.30	\$3.68
2	Commercial		\$3.16	\$599.32	\$176.14	\$1.30	\$3.68
3	Irrigation		\$3.16	\$599.32	\$176.14	\$1.30	\$3.68
4	OU		\$3.16	\$599.32	\$176.14	\$1.30	\$3.68
Customer Class							
5	Residential						
	Units		3,328,869	10,705	9,912	607,691	607,691
6	Cost of Service - \$	\$21,694,058	\$10,506,520	\$6,415,542	\$1,745,999	\$791,716	\$2,234,281
	Commercial						
7	Units		839,567	2,903	2,602	41,759	41,759
8	Cost of Service - \$	\$5,055,728	\$2,649,829	\$1,739,725	\$458,235	\$54,405	\$153,535
	Irrigation						
9	Units		217,774	1,629	1,113	12,765	12,765
10	Cost of Service - \$	\$1,923,023	\$687,335	\$976,134	\$195,991	\$16,630	\$46,931
	OU						
11	Units		15,000	50	46	576	576
12	Cost of Service - \$	\$88,535	\$47,343	\$30,258	\$8,066	\$750	\$2,118
	Irrigation In Town						
	Units		0	0	0	0	0
	Cost of Service - \$	\$0	\$0	\$0	\$0	\$0	\$0
	Irrigation Out of Town						
	Units		0	0	0	0	0
	Cost of Service - \$	\$0	\$0	\$0	\$0	\$0	\$0
13	Total Cost of Service	\$28,761,343	\$13,891,026	\$9,161,660	\$2,408,291	\$863,502	\$2,436,865

City of Norman, OK - Norman Utilities Authority (NUA)
 Water Utility

Table A-12

Comparison of Cost of Service With Revenues Under Existing Rates

	(a)	(b)	(c)	
Line No.	Customer Class	Cost of Service	Revenue at Current Rates	
			Indicated Revenue Adjustment	
1	Residential	\$21,694,058	\$17,161,329	26.4%
2	Commercial	\$5,144,263	\$3,479,827	47.8%
3	Irrigation	\$1,923,023	\$1,364,462	40.9%
4	Total System	\$28,761,343	\$22,005,618	30.7%
<hr style="border-top: 1px dashed black;"/>				
5	Res and Irr	\$23,617,080	\$18,525,791	27.5%

Table A-13
City of Norman, OK - Norman Utilities Authority (NUA)
Water Utility
Development of Billing Charge and Fixed Cost in Base Fee

Billing Charge Component	
Total Customer Costs	\$3,025,997
Total Bills	607,691
Billing Charge \$ per Bill	\$4.98
Billing Charge \$ per Bill (Rounded)	\$5.00
Fixed Charge Component	
Total Cost of Service	\$28,761,343
Total Fixed Charge Revenue Recovery	\$7,150,336
Less: Customer Costs from COS Analysis	25%
Remaining Costs to be Recovered	\$23,300,366
Total Bills (Billed Units)/Alt Classes	662,791
Fixed Charge Recovery Component of Service Charge	\$5.87

Table A-14
City of Norman, OK - Norman Utilities Authority (NUA)
Water Utility
Alt. 2: Cost of Service with Full Fixed Charge Recovery

Residential Cost of Service					
Meter Size	Bills	Service Charge	FCR	Total SC	
All Billed Units	607,691	\$5.00	\$5.87	\$10.87	
Total Service Charge Revenue				\$6,605,039	
Volume Rate Revenue Required (Total Class Cost less SC Revenue)				\$12,089,019	
Proposed Volumetric Rates					
Block	% Vol	Price Ratio	Volume	Rate	Revenue
0 - 5	58.7%	1.00	1,994,396	\$3.46	\$6,761,198
5 - 15	25.8%	1.30	857,882	\$4.50	\$3,858,175
15 - 20	4.8%	1.95	160,785	\$6.75	\$1,084,657
> 20	10.7%	2.75	355,806	\$9.51	\$3,384,988
Total			3,328,869		\$15,089,019

Table A-15
City of Norman, OK - Norman Utilities Authority (NUA)
Water Utility
Alt. 1a: Cost of Service with Partial Charge Recovery (Middle of the Road)

Residential Cost of Service					
Meter Size	Bills	Service Charge	FCR	Total SC	
All Billed Units	607,691	\$5.00	\$3.70	\$8.70	
Total Service Charge Revenue				\$5,286,910	
Volume Rate Revenue Required (Total Class Cost less SC Revenue)				\$16,407,147	
Proposed Volumetric Rates					
Block	% Vol	Price Ratio	Volume	Rate	Revenue
0 - 5	58.7%	1.00	1,994,396	\$3.76	\$7,351,835
5 - 15	25.8%	1.30	857,882	\$4.89	\$4,195,213
15 - 20	4.8%	1.95	160,785	\$7.34	\$1,179,410
> 20	10.7%	2.75	355,806	\$10.34	\$3,680,690
Total			3,328,869		\$16,407,147

Table A-16
City of Norman, OK - Norman Utilities Authority (NUA)
Water Utility
Alt. 2: Cost of Service with Full Fixed Charge Recovery

Commercial Cost of Service					
Meter Size	Bills	Service Charge	FCR	Total SC	
All Billed Units	41,759	\$5.00	\$5.87	\$10.87	
Total Service Charge Revenue				\$453,883	
Volume Rate Revenue Required (Total Class Cost less SC Revenue)				\$4,690,380	
Proposed Volumetric Rates					
Block	% Vol	Price Ratio	Volume	Rate	Revenue
0-AWC	65.5%	1.0	549,923	\$11.747	\$6,456,574
>AWC	34.5%	1.5	289,644	3.253	952,461
Total			839,567		7,409,035
			CU Vol	CU Rate	OU Rate
			90%	\$15,000	\$16,950
			78.3%	\$4.22	\$4.22
			21.7%	\$7.04	\$7.04
			Tier 1	\$4.22	\$4.22
			Tier 2	\$7.04	\$7.04
			Total Revenue	\$6.34	\$6.34
			Check		\$4,690,380
			OK		

Table A-17
City of Norman, OK - Norman Utilities Authority (NUA)
Water Utility
Alt. 1a: Cost of Service with Partial Charge Recovery (Middle of the Road)

Commercial Cost of Service					
Meter Size	Bills	Service Charge	FCR	Total SC	
All Billed Units	41,759	\$5.00	\$3.70	\$8.70	
Total Service Charge Revenue				\$363,905	
Volume Rate Revenue Required (Total Class Cost less SC Revenue)				\$4,780,958	
Proposed Volumetric Rates					
Block	% Vol	Price Ratio	Volume	Rate	Revenue
0-AWC	65.5%	1.0	549,923	\$11.747	\$6,456,574
>AWC	34.5%	1.5	289,644	3.253	952,461
Total			839,567		7,409,035
			CU Vol	CU Rate	OU Rate
			90%	\$15,000	\$16,950
			78.3%	\$4.22	\$4.22
			21.7%	\$7.18	\$7.18
			Tier 1	\$4.22	\$4.22
			Tier 2	\$7.18	\$7.18
			Total Revenue	\$6.46	\$6.46
			Check		\$4,780,958
			OK		

City of Norman, OK - Norman Utilities Authority (NUA)
 Water Utility
 Rate Structure Alternatives

Table A-18

Description	Current Rates	Alt 1 Across the Board	Alt. 1a Middle of the Road	Alt. 2 Fixed Charge Recovery
RESIDENTIAL				
Base Fee,\$ per Bill	\$6.00	\$7.70	\$8.70	\$10.90
CIC, \$ per Bill	1.50	1.50	1.50	1.50
Volume Rates, \$ per 1,000 gallons				
Tier 1 0 - 5 Kgal	\$3.35	\$4.27	\$3.76	\$3.46
Tier 2 5 - 15 Kgal	4.10	5.23	4.89	4.50
Tier 3 5 - 20 Kgal	5.20	6.63	7.34	6.75
Tier 4 > 20 Kgal	6.80	8.67	10.34	9.51
COMMERCIAL				
Base Fee,\$ per Bill	\$6.00	\$7.70	\$8.70	\$10.90
Volume Rates, \$ per 1,000 gallons				
Tier 1 0 - AWC	\$3.80	\$5.62	\$4.78	\$4.69
Tier 2 > AWC	4.20	6.21	7.18	7.04
IRRIGATION				
Base Fee, \$ per Bill	\$6.00	\$7.70	\$8.70	\$10.90
CIC, \$ per Bill	1.50	1.50	1.50	1.50
Volume Rates, \$ per 1,000 gallons				
Tier 1 0 - 5 Kgal	\$3.35	\$4.27	\$3.76	\$3.46
Tier 2 5 - 15 Kgal	4.10	5.23	4.89	4.50
Tier 3 5 - 20 Kgal	5.20	6.63	7.34	6.75
Tier 4 > 20 Kgal	6.80	8.67	10.34	9.51

APPENDIX B:

WASTEWATER UTILITY FINANCIAL PLAN, AND RATE DESIGN TABLES

List of Tables

B -1: Wastewater Financial Plan

B-2: Operations Expense Projection

B-3: Capital Projects

B-4: Recommended Wastewater Rates Alternatives

Table B-1

City of Norman, OK - Norman Utilities Authority
Wastewater Utility
Cash Flow Analysis

Line No	Description	Fiscal Year Ending										
		FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	
REVENUE												
<u>Fixed</u>												
1	Residential Service Charges	\$2,921,356	\$2,956,413	\$2,991,889	\$3,027,792	\$3,064,126	\$3,100,895	\$3,138,106	\$3,175,763	\$3,213,872	\$3,252,439	
2	All Non-Residential Service Charges	239,606	242,481	245,391	248,336	251,316	254,332	257,384	260,472	263,598	266,761	
3	Residential Maintenance Charges	0	0	0	0	0	0	0	0	0	0	
4	All Non-Residential Maintenance Charges	0	0	0	0	0	0	0	0	0	0	
5												
6												
<u>Volumetric</u>												
7	Residential Volumetric	\$5,516,088	\$5,549,184	\$5,582,479	\$5,615,974	\$5,649,670	\$5,683,568	\$5,717,669	\$5,751,975	\$5,786,487	\$5,821,206	
8	All Non-Residential Volumetric	1,739,929	1,750,369	1,760,871	1,771,436	1,782,065	1,792,757	1,803,514	1,814,335	1,825,221	1,836,172	
9												
10												
11	Miscellaneous	\$1,494,638	\$1,509,584	\$1,524,680	\$1,539,927	\$1,555,326	\$1,570,880	\$1,586,588	\$1,602,454	\$1,618,479	\$1,634,664	
12												
13	Proposed State Loans	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
14	TOTAL OPERATING REVENUE	\$11,911,617	\$12,008,031	\$12,105,311	\$12,203,466	\$12,302,503	\$12,402,432	\$12,503,261	\$12,605,000	\$12,707,657	\$12,811,242	
15												
EXPENSES												
16	Operating and Maintenance	\$8,725,877	\$9,102,953	\$9,496,514	\$9,854,387	\$10,225,805	\$10,611,283	\$11,011,356	\$11,426,579	\$11,857,528	\$12,304,800	
17	Other	0	0	0	0	0	0	0	0	0	0	
18												
19	TOTAL O&M EXPENSES	\$8,725,877	\$9,102,953	\$9,496,514	\$9,854,387	\$10,225,805	\$10,611,283	\$11,011,356	\$11,426,579	\$11,857,528	\$12,304,800	
20												
21	NET REVENUE	\$3,185,740	\$2,905,078	\$2,608,797	\$2,349,079	\$2,076,698	\$1,791,148	\$1,491,905	\$1,178,421	\$850,130	\$506,442	
22												
DEBT SERVICE												
23	Existing Debt Service	\$2,257,294	\$2,254,329	\$2,251,369	\$2,248,413	\$2,245,459	\$1,121,255	\$0	\$0	\$0	\$0	
24	Proposed Debt Service	\$0	\$303,659	\$437,390	\$733,555	\$972,623	\$1,218,862	\$1,472,489	\$1,472,489	\$1,472,489	\$1,472,489	
25												
26	TOTAL DEBT SERVICE	\$2,257,294	\$2,557,988	\$2,688,759	\$2,981,968	\$3,218,082	\$2,340,117	\$1,472,489	\$1,472,489	\$1,472,489	\$1,472,489	
27												
28	NET OPERATING CASH FLOW	\$928,446	\$347,091	(\$79,961)	(\$632,889)	(\$1,141,384)	(\$548,969)	\$19,416	(\$294,068)	(\$622,360)	(\$966,047)	
29												
CIP EXPENDITURES - Non Growth												
30	Placeholder	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
31	CIP EXPENDITURES - Non Growth	\$0	\$0	\$0	\$0	\$0	\$0	\$446,714	\$3,514,774	\$3,620,217	\$3,728,824	
32												
33	TOTAL CIP EXPENDITURES	\$0	\$0	\$0	\$0	\$0	\$0	\$446,714	\$3,514,774	\$3,620,217	\$3,728,824	
34												
35	NET CASH FLOW	\$928,446	\$347,091	(\$79,961)	(\$632,889)	(\$1,141,384)	(\$548,969)	(\$427,299)	(\$3,808,842)	(\$4,242,577)	(\$4,694,871)	
36												
DEBT COVERAGE												
37	Projected Debt Coverage	1.41	1.14	0.97	0.79	0.65	0.77	1.01	0.80	0.58	0.34	
38	Required Debt Coverage	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
39												
40												
<hr/>												
41	CASH BALANCE											
42	Beginning Cash Balance	\$1,771,231	\$2,699,677	\$3,046,768	\$2,966,807	\$2,333,918	\$1,192,533	\$643,565	\$216,266	(\$3,592,576)	(\$7,835,153)	
43	Net Cash Change	\$928,446	\$347,091	(\$79,961)	(\$632,889)	(\$1,141,384)	(\$548,969)	(\$427,299)	(\$3,808,842)	(\$4,242,577)	(\$4,694,871)	
44	ENDING CASH BALANCE	\$2,699,677	\$3,046,768	\$2,966,807	\$2,333,918	\$1,192,533	\$643,565	\$216,266	(\$3,592,576)	(\$7,835,153)	(\$12,530,024)	
45												
46	RESERVE TARGET											
47	TOTAL RESERVE TARGET	\$2,181,469	\$2,275,738	\$2,374,129	\$2,463,597	\$2,556,451	\$2,652,821	\$2,752,839	\$2,856,645	\$2,964,382	\$3,076,200	

City of Norman, OK - Norman Utilities Authority
Wastewater Utility
Cash Flow - WRF

Table B-2

Line No	Description	Fiscal Year Ending										
		FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
1	Salaries / Benefits	\$4,123,728	\$4,288,677	\$4,460,224	\$4,616,332	\$4,777,904	\$4,945,130	\$5,118,210	\$5,297,347	\$5,482,754	\$5,674,651	
2	Supplies / Materials	796,397	836,217	878,028	913,149	949,675	987,662	1,027,168	1,068,255	1,110,985	1,155,425	
3	Services / Maintenance	1,773,335	1,862,002	1,955,102	2,033,306	2,114,638	2,199,224	2,287,193	2,378,680	2,473,828	2,572,781	
4	Internal Services	234,364	246,082	258,386	268,722	279,471	290,649	302,275	314,366	326,941	340,019	
5	Cost Allocations	1,855,989	1,930,229	2,007,438	2,087,735	2,171,245	2,258,094	2,348,418	2,442,355	2,540,049	2,641,651	
6	Emp Turnover Savings	(57,936)	(60,253)	(62,664)	(64,857)	(67,127)	(69,476)	(71,908)	(74,425)	(77,030)	(79,726)	
7	Alternate	0	0	0	0	0	0	0	0	0	0	
8	Alternate	0	0	0	0	0	0	0	0	0	0	
9	Alternate	0	0	0	0	0	0	0	0	0	0	
10	Alternate	0	0	0	0	0	0	0	0	0	0	
11	Inter-Fund Transfers	0	0	0	0	0	0	0	0	0	0	
12	Depreciation	0	0	0	0	0	0	0	0	0	0	
13	Total Operation and Maintenance Expense	\$8,725,877	\$9,102,953	\$9,496,514	\$9,854,387	\$10,225,805	\$10,611,283	\$11,011,356	\$11,426,579	\$11,857,528	\$12,304,800	

Table B-3

City of Norman, OK - Norman Utilities Authority
Wastewater Utility
Projected Capital Improvement Program (Including Inflation)

Line No	Description	Funding Source	Inflation Type	Fiscal Year Ending										10-Year Total			
				FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32				
1	Summit Valley Interceptor	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	WRF Environmental Services Building Roof Replacement	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	WRF Blower Building Roof Replacement	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Westside Lift Station Roof Replacement	Bond	General	-	41,000	-	-	-	-	-	-	-	-	-	-	-	41,000
5	WRF Main Control Building Lower Roof Replacement	Cash	General	-	-	-	-	-	-	-	-	360,000	-	-	-	-	360,000
6	WRF Structure Painting	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	WRF Storage Building	Bond	General	-	850,000	-	-	-	-	-	-	-	-	-	-	-	850,000
8	Cyber & Physical Security Assessment (1)	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	WRF Reuse Pilot Study TESTING	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Non-Potable Effluent Reuse System	Bond	General	-	-	97,000	3,509,000	-	-	-	-	-	-	-	-	-	3,606,000
11	Aeration Basin Turbo Blower Replacement	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	WRF Septage Receiving Station	Bond	General	-	-	500,000	-	-	-	-	-	-	-	-	-	-	500,000
13	South WRF Land Purchase	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Sludge Co-Composting (4)	Bond	General	-	-	1,035,000	-	-	-	-	-	-	-	-	-	-	1,035,000
15	South WRF Phase 3 BNR Improvements (2)	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	WRF Digester Gas Storage/Co-Generation	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Line Maintenance Building (1)	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	WRF Main Control Building Renovation	Bond	General	-	3,000,000	-	-	-	-	-	-	-	-	-	-	-	3,000,000
19	WRF Centrifuge Replacement	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	WRF Solar Array	Cash	General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	Undesignated Capital Projects	Cash	General	-	-	-	-	-	-	-	-	-	2,750,000	2,750,000	2,750,000	2,750,000	8,250,000
22	Undesignated Capital Projects	Bond	General	-	-	-	-	-	-	-	-	-	2,750,000	2,750,000	2,750,000	2,750,000	8,250,000
23	Total Capital Improvement Program (with inflation)		General	0	3,891,000	1,632,000	3,509,000	2,750,000	2,750,000	2,750,000	2,750,000	3,110,000	2,750,000	2,750,000	2,750,000	2,750,000	25,892,000

Description	FY24 Existing	Alt. 1 ATB	Alt. 2 FCR
RESIDENTIAL			
Base Fee,\$ per Bill	\$5.00	\$5.50	\$6.75
Volume Rates, \$ per 1,000 gallons Billed Volume	2.70	2.97	2.70
COMMERCIAL			
Base Fee,\$ per Bill	\$5.00	\$5.50	\$6.75
Volume Rates, \$ per 1,000 gallons Billed Volume (85% of Water Use)	2.70	2.97	2.70