CITY OF NORMAN
PLANNING & DEVELOPMENT

Water and Wastewater Connection Charge Study Report

April 22, 2016

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April 22, 2016

Mr. Terry Floyd
Development Coordinator
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P.O. Box 370
Norman, OK 73070

Subject: Water and Wastewater Connection Charge Study Report

Dear Mr. Floyd,

Raftelis Financial Consultants, Inc. (RFC) is pleased to provide this Water and Wastewater Connection Charge Study report to the City of Norman (City). The purpose of the study was to update the City's water and wastewater connection charge schedules, evaluate long-term water and wastewater utility capital financing strategies, and survey the water and wastewater connection charges of comparable communities.

This report summarizes RFC's key findings and discusses the methodologies we utilized develop our recommendations. It has been a pleasure working with you and other members of the City's Staff. Thank you for the support you provided during the course of this study.

Sincerely,

RAFTELIS FINANCIAL CONSULTANTS, INC.

Richard D. Giardina, CPA
Executive Vice President

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SECTION 1: EXECUTIVE SUMMARY

1.1 BACKGROUND AND INTRODUCTION

On May 12, 2015, the City of Norman (City) engaged Raftelis Financial Consultants, Inc. (RFC) to conduct a Water and Wastewater Connection Charge Study (study). The three major objectives of the study included:

- Updating the City's water and wastewater connection charge schedules using industry standard connection charge calculation methodologies. This update included completing an analysis of customer water consumption characteristics, and a review of the City's forecast capital improvement program (CIP) expenditures for the 10-year planning horizon fiscal year (FY) 2016 - FY 2025.[1]
- Developing hypothetical long-term water and wastewater utility capital financing plans featuring a mix of connection charge receipts, user charge revenues and external debt financing. The purpose of this hypothetical capital financing plan is to inform stakeholders of the potential level of rate revenue increases and external debt financing required to fund the City's forecast water and wastewater CIP expenditures. The ultimate decision regarding the specific capital financing plan utilized by the City will be made by the Norman Utilities Authority/Norman City Council.
- Surveying the water and wastewater connection charges of sample of comparable communities specified by City Staff.

This report summarizes the key findings and recommendations for each of these three main objectives.

1.2 CAPTIAL IMPROVEMENT FUNDING SOURCES

The City is able to maintain and expand its water and wastewater infrastructure through multiple funding sources. These sources can be generalized into four main categories: user charge revenues earned from the provision of water and wastewater service to customers; connection charge receipts earned when new customers connect to the water and wastewater systems; external debt financing, and various miscellaneous revenue sources including the wastewater excise tax on new development.

The City's water and wastewater utilities earn user charge revenue from the provision of utility service from the following rates and charges:

- $6.00 per account monthly base charge for water service;
- $5.00 per account monthly base charge for wastewater service;
- $5.00 per account monthly sewer maintenance fee (SMF);

[1] The City's fiscal year runs from July 1st to June 30. FY 2016 began on July 1, 2015.

- $2.00 per account capital improvement charge (CIC). The water utility is allocated $1.50 of the CIC and the wastewater utility is allocated $0.50;
- Volumetric rates for water and wastewater monthly billed consumption, which include:
    - Residential water customers pay $3.35 per thousand gallons for the first 5,000 gallons of billed water consumption, $4.10 per thousand gallons for 5,001 to 15,000 gallons, $5.20 per thousand gallons for 15,001 to 20,000 gallons, and $6.80 per thousand gallons over 20,000 gallons. A high usage surcharge of $0.35 per thousand gallons is assessed in July and August for every thousand gallons over 20,000 gallons.
    - Residential wastewater customers also pay $2.70 per thousand gallons for sewer service, based on their average winter consumption during the months of December, January and February.
    - Commercial water customers currently pay $3.80 per thousand gallons for billed water consumption up to the customer's average winter consumption. The charge per thousand gallons is increased to $4.20 when usage exceeds average winter consumption.
    - Commercial wastewater customers pay $2.70 for billed wastewater volumes. However, the billed volume is based on 80% of monthly usage, and is not calculated based on average winter usage.

New users that connect to the City's water and wastewater systems provide revenue through:

- Water connection charges for new connections to the water utility system;
- Wastewater connection charges for new connections to the wastewater utility system;
- A wastewater excise tax on new development.

1.3 EXISTING CONNECTION CHARGES

Connection charges are one-time charges paid by new customers when they connect to the water and wastewater utility systems. They are used to pay for the cost of capacity-related infrastructure required to accommodate the demands imposed by growth and are intended to represent the unit cost of the capacity incurred to serve new customers.

Table 1 shows the connection charge schedule, which will become effective on August 1, 2016. These connection charges were assumed for FY 2016 and FY 2017 in the hypothetical financial plans developed by RFC, which are described in Sections 4 and 6.

Table 1: Existing Connection Charges for FY 2016 and FY 2017

Meter Size	Water	Wastewater
3/4"	$1,000	$275
1"	1,667	550
1.5"	3,333	1,100
2"	6,667	1,925
3"	14,667	4,625
4"	28,000	7,988
6"	57,667	18,381
Multi-Family (Per Dwelling Unit)	$1,000	$275

1.4 PROPOSED CONNECTION CHARGES

RFC utilized industry standard connection charge calculation methodologies to develop the maximum allowable water and wastewater connection charge schedules that are allowed by Oklahoma law. Section of 3.7 of this report provides a detailed discussion of the connection charge calculation process. RFC's proposed water and wastewater connection charge schedule, recommended for implementation in FY 2018 are shown in Table 2.

Table 2: Proposed Connection Charges for FY 2018

Meter Size	Water	Wastewater
3/4"	$3,275	$934
1"	8,744	2,494
1.5"	10,906	3,110
2"	34,944	9,966
3"	69,856	19,922
4"	109,156	31,130
6"	218,344	62,270
Multi-Family (Per Dwelling Unit)	$3,275	$934

RFC recommends that the City review its connection fees every 5 to 7 years, as the capital improvement plan may undergo significant changes during the 10 year planning period that is described in this report. It is also important to note that if allowable under Oklahoma statutes and City Municipal Code, the proposed connection fees could be inflated every year based upon the Engineering News Record (ENR) construction cost index, in order for these fees to adequately cover the anticipated costs of future growth.

The proposed connection charge schedule listed above is based on meter flow rate equivalency ratios that are described in the American Water Works Association (AWWA) publication, *Manual of Water Supply Practices M6: Water Meters - Selection, Installation, Testing, and Maintenance*. This is a

departure from the meter ratios that the City of Norman currently uses. RFC recommends the use of meter flow equivalencies, because they result in connection charge schedules that reflect the instantaneous flow requirements that larger meter sizes can impose on the utility system.

Table 3 shows the existing and proposed flow equivalencies.

Table 3: Existing and Proposed Meter Flow Equivalencies

Meter Size	Existing Flow Equivalencies	AWWA M6 Flow Equivalencies
3/4"	1.00	1.00
1"	2.00	2.67
1.5"	4.00	3.33
2"	7.00	10.67
3"	16.82	21.33
4"	29.05	33.33
6"	66.84	66.67

1.5 WASTEWATER EXCISE TAX ON NEW DEVELOPMENT

In 2001, the citizens of the City of Norman approved a wastewater excise tax on new development that, similar to the wastewater connection charge, provides funding for growth-related wastewater infrastructure. Since its inception, the wastewater excise tax has been assessed according to the following schedule:

Residential Construction:

- $850.00 for homes up to 1,200 square feet
- $2.00 per square foot over 1,200 square feet

Non-Residential Construction:

- $115.00 per employee
- $4.00 per gallon per day per employee, if the estimated wastewater flow is greater than 30 gallons per day per employee

Residential Expansions (includes the installation of plumbing fixtures):

- $1.00 per square foot for each additional living space added to the structure.

The wastewater excise tax on new development cannot be modified or repealed without voter approval. Therefore, it was assumed that this tax will not be modified during the FY 2016 - FY 2025 planning horizon. As a result no changes in the wastewater excise tax on new development were included in the hypothetical wastewater utility capital financing plan discussed in Section 6 of this report. The connection fees that are proposed in Table 2 are ***in addition to*** the wastewater excise tax. Together these connection fees and the new development excise tax are required to help finance the cost of growth related infrastructure that growth adds to the wastewater system.

SECTION 2: BACKGROUND AND INTRODUCTION

2.1 BACKGROUND OF THE STUDY

On May 12, 2015, the City of Norman (City) engaged Raftelis Financial Consultants, Inc. (RFC) to conduct a water and wastewater connection charge study in order to update the City's water and wastewater connection charge schedules, to evaluate long-term water and wastewater utility capital financing plans, and to survey comparable communities for water and wastewater connection charges. Currently, the City assesses a connection charge for new connections to the water utility system and separate connection charges for new connections to the wastewater utility system.

The City also charges a wastewater excise tax on new development. Similar to the wastewater connection charge, the funds from this tax are used to fund growth-related wastewater utility infrastructure. The wastewater excise tax was implemented in 2001, when a group of Norman citizens known as the "Citizen's Coalition on the Future of Wastewater" (Coalition) proposed potential funding solutions to achieve the recommendations that were contained in the City's 2001 Wastewater Master Plan. As an outcome of this process, the citizens of Norman voted to approve a $5.00 monthly sewer maintenance fee (SMF), a temporary five-year one-half percent sewer sales tax (SST), and the wastewater excise tax on new development. The SMF is a separate base charge that each wastewater customer pays on a monthly basis. The SST remained effective until 2006 and is no longer collected.

The wastewater excise tax on new development is assessed according to the size of a new residential construction, or by the number of employees in a commercial building. In the past, money received from this excise tax has contributed to the funding for the following projects:

- South WWTP Phase 2 Expansion
- South Interceptor Improvements
- Lift Station D Force Main Improvements
- North Basin Interceptor Improvements
- North WWTP Engineering Report
- Lift Station D Rehabilitation

2.2 STUDY PLANNING HORIZON

The updated water and wastewater connection charge schedules and the hypothetical water and wastewater capital financing plans discussed in this report are based on a City-developed CIP plan for the period FY 2016 - FY 2025. The use of a 10-year planning horizon for these purposes is normative as compared to longer 15- or 20-year planning horizons. As described in the Sixth Edition of the AWWA publication *Manual of Water Supply Practices M1: Principles of Water Rates, Fees, and*

Charges, "From a strategic financial planning or revenue-adequacy standpoint, projections beyond 10 years tend to be quite speculative and are of questionable value" (pg. 10).

2.3 CITY WATER AND WASTEWATER UTILITY SYSTEMS

The City of Norman is centrally located in the state of Oklahoma and is 10 miles south of Oklahoma City. Norman has approximately 118,100 residents and is the third largest city in the State. The City is currently undergoing two major long-range planning and development projects entitled "Norman Forward" and "City Center Vision." Norman Forward is intended to renovate, expand, construct and fund quality of life projects, such as multiple recreation facilities, libraries, parks, athletic venues, etc. City Center Vision is intended to provide guidance and regulations for the future development and redevelopment of the Central City area which is experiencing significant development pressure.

A major driver of the City's economy is the University of Oklahoma (OU), which currently has approximately 22,000 students and is the City's largest employer. OU is a highly ranked public university that offers 152 baccalaureate programs, 160 masters programs, and 75 doctorate programs. The university is also home to the National Weather Center, which is a joint effort between the University and the National Oceanic and Atmospheric Administration. OU also has two additional campuses in Oklahoma City and Tulsa.

The per capita income in the City is approximately $28,267 and the median household income is approximately $48,248. The City contains approximately 50,348 residential dwelling units. 61% of these units are single family homes, having an average property value of $160,521. New single family homes during 2010 and 2014 had an average value of $224,644, and were 2,212 square feet in size.

Water Treatment System

Lake Thunderbird is a 6,000 acre lake located on the east side of the City. This lake is a source of recreational activities and a major source of the City's drinking water. In addition to Lake Thunderbird, the City obtains water from groundwater wells and has the ability to purchase water from the Oklahoma City water system.

The City's water treatment plant can produce, on average, approximately 8.4 million gallons per day (MGD). The groundwater wells that the City operates can produce 5.3 MGD, and the City receives 1 MGD from Oklahoma City, on average. This results in a total average water production of 14.7 MGD by the entire water system. In the FY 2016 - FY 2025 planning horizon used in this study, the City plans to add 4.7 MGD in average day capacity, of which 2 MGD is planned from the expansion of groundwater well fields and 2.7 MGD is from additional treatment of existing groundwater wells.

During peak day demand, the water treatment plant can produce 17 MGD, the groundwater wells can produce 8 MGD and the City is able to receive 1.1 MGD from Oklahoma City. This results in a total of 26.1 MGD in peak production. Over the planning horizon, the production from groundwater wells will be reduced to 3 MGD due to stricter environmental regulations. However, 3 MGD of groundwater

will be reclaimed due to additional arsenic treatment that will be added by the City. An additional 9 MGD of groundwater will be treated in a new groundwater treatment plant. This results in a total peak day production of 33.1 MGD, or an incremental 7 MGD being added to the water system's peak day capacity.

Beyond the 2025 planning horizon, the City plans to augment its existing water supply portfolio by discharging treated effluent into Lake Thunderbird for reuse on an indirect potable basis. Additional treatment plant capacity will be required to bring this effluent to acceptable water quality standards. The CIP expenditures associated with these future treatment capacity additions *may* be appropriate for recovery from the water connection fee as the increased capacity will be available to serve new customer growth. However, because these CIP expenditures will occur beyond the FY 2016 - FY 2025 planning horizon considered in this study, they have no impact on the updated water connection charge schedule presented in this report.

Wastewater Treatment System

The Canadian River borders the southwest portion of the City, and serves as a discharge location for the Norman Water Reclamation Facility (WRF), the City's wastewater treatment plant. The WRF began operating in 1946 and was expanded to 12 MGD in 1999. Current expansions are increasing the capacity of the facility to 17 MGD of annual average flows and 36 MGD of peak wet weather flows. This report assumes that this expansion has been completed. The WRF utilizes a complete mixed activated sludge process. Over the planning period, the WRF will undergo upgrades to add biological nutrient removal (BNR), so that the facility can meet future permit requirements.

Based on the topography in the northern portion of the City, wastewater must be pumped to the WRF through Lift Station D, which has an average capacity of 3.75 MGD and a peak capacity of 6 MGD. The City anticipates that growth in this area of the City may exceed the capacity of this lift station outside of the FY 2016 - FY 2025 planning horizon considered in this study. At that point, a new North Wastewater Treatment Plant may be built to serve this area. At such time, the cost for this facility may be recovered through a connection fee and/or the wastewater excise tax on new development; however this additional treatment capacity was not considered in this study.

Forecast Population Growth

In September of 2015, the City completed a comprehensive housing market analysis. This analysis indicated that the City will add an estimated 2,600 additional households from 2015 through 2019, increasing at an average rate of 520 households per year. The addition of 520 homes per year translates to a 1.6% annual growth rate in new water and wastewater connections. As of 2015, the average size of a single family detached home was estimated at 1,820 square feet and accounted for 61% of the residential housing inventory.

SECTION 3: WATER CONNECTION CHARGES

The primary objective of the study is to calculate updated connection charge schedules for the City's water and wastewater utilities using industry standard connection charge calculation methodologies. As noted previously, Norman anticipates that approximately 520 new single family homes will be added per year of the period of this study. This equates to a 1.6% annual growth rate. The City's water utility has limited long-term capacity to accommodate this growth. As a result, the City is planning on adding treatment plant capacity, groundwater well capacity, and a second connection to the Oklahoma City water utilities system to accommodate future growth. The City's FY 2016 - FY 2025 CIP expenditures for these growth-related projects are forecast to be approximately $49.2 million out of a total $232.4 million, when expressed using uninflated 2015 dollars.

3.1 CONNECTION CHARGE CALCULATION METHODOLOGIES

The three primary industry accepted methodologies for calculating water and wastewater connection charges are the equity buy-in, incremental cost, and hybrid approaches[2]. Depending on the unique circumstances of the utility in question, the use of one or more of these approaches results in a conceptually defensible and fundamentally equitable method for recovering the cost of system capacity additions required to serve new development, i.e., different approaches may be used to determine the unit cost of capacity for each utility system.

Equity Buy-In Method

The equity buy-in method is typically used by utility systems with existing available capacity to meet the long-term demands imposed by new development. This method estimates the value of a unit of system capacity based upon customer equity in existing capacity-related assets. Thus, the resulting connection charge reflects the proportional cost of new customer's share of existing system capacity. Under the equity buy-in method, the cost of existing capacity-related facilities is generally estimated based on current replacement cost. However, some utilities, depending on their unique circumstances, choose to value existing capacity-related assets at original cost, net book value, or replacement cost less depreciation. Assets contributed or paid for by developers are excluded from the connection charge calculation under this methodology.

The formula to calculate connection charges under the equity buy-in method is:

$$\text{Connection Charge} = \frac{\text{Replacement Cost New of System (\$)}}{\text{Total System Capacity (\# of 3/4" Connections)}}$$

[2] See Chapter VI.2, System Development Charges beginning on page 261 of the American Water Works Association publication, *Manual of Water Supply Practices M1, Principles of Water Rates, Fees and Charges*,

Incremental Cost Method

The incremental cost method focuses on the cost of the additional capacity-related assets required to serve new customers. The incremental cost method is most appropriate for utility systems that do not have existing available capacity to serve growth. The resulting connection charge reflects the proportional cost of each new customer's share of future system capacity. As such, the incremental cost method is most appropriately used when a utility has a well-defined capital improvement program or utility master plan.

The formula used to calculate the incremental cost is:

$$\text{Connection Charge} = \frac{\text{Growth-Related Capital (\$) + Debt Interest (\$)}}{\text{Incremental Capacity Additions (\# of 3/4" Connections)}}$$

Hybrid Method

In addition to the equity buy-in and incremental cost methods, it is also common for many water and wastewater utilities to use a combination of these two approaches. This combined "hybrid" approach is often used when a utility has some existing system capacity to accommodate growth but will also be required to construct additional new capacity in the future.

Connection Charge =

$$\frac{\text{Replacement Cost New of System (\$) + Growth-Related Capital (\$) + Debt Interest (\$)}}{\text{Total System Capacity (\# of 3/4" Connections) + Incremental Capacity Additions (\# of 3/4" Connections)}}$$

3.2 SELECTED METHODOLOGY: THE INCREMENTAL APPROACH

During the FY 2016 - FY 2025 planning horizon addressed in this study, the City must add groundwater treatment capacity and groundwater wells to serve the demands anticipated from new development or future growth. It is appropriate to use the incremental approach to calculate water connection charges in situations of this type. As a result, and with the agreement of City Staff, RFC used the incremental approach to update the City's water connection charge schedule.

The base meter size on the City's water utility system is 3/4". Table 4 demonstrates the steps RFC employed to calculate, using the incremental approach, the updated water connection charge for 3/4" meters.

Table 4: Steps in the Connection Charge Calculation Process

Step	Description
#1: Asset Valuation	Estimate the value of future growth-related asset additions based on a CIP expenditure forecast
#2: Units of Capacity	Analyze customer water consumption characteristics and estimate future capacity additions
#3: Unit Cost of Capacity	Calculate unit cost of incremental capacity additions for a 3/4" connection
#4: Connection Charge Schedule	Develop a connection charge schedule for each meter size used by the utility for new connections

3.3 FORECAST OF GROWTH-RELATED ASSET ADDITIONS

The first step in the connection charge calculation process is to estimate the value of future growth-related asset additions. The City provided RFC with forecast CIP expenditures for the FY 2016 - FY 2025 planning horizon. These capital expenditures included both growth-related assets that add system capacity to serve new customers and non-growth assets associated with the renewal and replacement of existing water system infrastructure (See Appendix A pages A-16 and A-18). The determination of which CIP projects are associated with growth was made by City Staff who specified the percentage of costs associated with each project that should be assigned to growth. These growth-related costs were then used in RFC's calculation of updated water utility connection charge schedule.

During the period FY 2016 - FY 2025, the City plans to invest $49.2 million (2015 dollars) in infrastructure to support future growth. These growth- related infrastructure additions include:

- Water Line Replacements/Enlargements (upsize or add capacity): $11.5 million out of a total project cost of $79.0 million
- Well Modifications for Arsenic Treatment: $1.6 million
- 10 Additional Water Wells and Supply Lines: $2.7 million out of a total project cost of $12.1 million
- Reactivate Arsenic Wells and 3 MGD GWTP: $19.0 million
- Additional Connection to the Oklahoma City Water System: $14.4 million

In total, the City plans to invest $183.2 million (2015 dollars) for the renewal and replacement of water system infrastructure that serves existing customers. The major projects for existing customers include:

- 12 MGD Groundwater Treatment Plant: $71.7 million
- Water Treatment Plant Improvements – Phase II: $26.2 million
- Water Tower Maintenance/Upgrades: $5.3 million

3.4 ESTIMATE OF FUTURE CAPACITY ADDITIONS

The second step in the connection charge calculation process is to determine the number of connections that future treatment plant capacity additions will serve. The City's existing connection charge schedule is based on the size of the meter installed to serve each customer. The base meter size in the connection charge schedule is associated with 5/8" and 3/4" meters. RFC's analysis of the City's billed water consumption data indicates that average day usage for customers at this meter size is 201 gallons per day. A 1.9 peaking factor was calculated in the City's Strategic Water Supply Plan. When multiplying the 1.9 peaking factor to the average day usage, a peak day usage of 381 gallons per day was determined. The details of water consumption data are shown in Appendix A pages A-24 to A-27.

Through the addition of new groundwater wells and treatment capacity, the City will add 4.7 MGD in average day capacity and 7.0 MGD in peak day capacity during the FY 2016 - FY 2025 planning horizon. Using the estimated peak day capacity of 381 gallons per day for customers with 3/4" meters, the City will have the capacity to serve approximately 18,366 new 3/4" customer meters over the next 10 years.

3.5 UNIT COST OF INCREMENTAL CAPACITY ADDTIONS

As previously discussed, the City plans to invest $49.2 million for growth-related water utility infrastructure during the period FY 2016 - FY 2025. Water connection charges may not be adequate to provide the cash necessary to fund these projects in their entirety and debt financing will likely be required. Thus, in addition to anticipated construction costs of $49.2 million, the water connection charge calculation must also include the present value of future debt interest costs. As part of the capital financing plan process, RFC has calculated that the City will need to issue $47 million in debt in order to fund these system expansions and improvements. The present value of these borrowing costs was calculated to be $10.92 million (Appendix A page A-12).

Table 5 shows the calculation of the water connection charge based on FY 2016 - FY 2025 capacity additions costing $60.1 million that are capable of serving 18,366 total 3/4" connections. This 3/4" connection charge reflects the incremental unit cost of capacity for new connections on the City's water utility system.

Table 5: Calculation of Water Connection Charge - 3/4" Meter

Description	Capacity Additions	Calculation
Uninflated Growth-Related CIP FY 2016 - FY 2025		$49,219,050
Plus: NPV of Borrowing Cost - Future Debt		10,922,957
Total Cost for Connection Fee Calculation		$60,142,007
Incremental Peak Day Water System Capacity (MGD)	7.0	
Estimated 5/8" & 3/4" Meter Average Day Water Use (gpd)	201	
Estimated Max Day Peaking Factor (1)	1.9	
Estimated 5/8" & 3/4" Meter Peak Day Water Use (gpd)	381	
Incremental Capacity (7.0 MGD Peak Day Capacity/381 gpd)	18,366	
Calculated Connection Charge ($60,142,007/18,366)		$3,275

3.6 PROPOSED FY 2018 CONNECTION CHARGE SCHEDULE

The calculated connection charge in Table 5, is for a 3/4" meter. Each other meter size that is installed in a new building can draw a different demand on the distribution system. In order to account for these differences, RFC recommends using the flow equivalencies that are described in the *AWWA publication* *Manual of Water Supply Practices M6: Water Meters – Selection, Installation, Testing and Maintenance*. These flow equivalencies are calculated based on the peak flow that can pass through a meter of that size. The flow equivalencies of each meter size, and the proposed connection charge for each is shown in Table 6.

Table 6: Proposed Water Connection Charges for FY 2018

Meter Size	AWWA M6 Flow Equivalency	Proposed
3/4"	1.00	$3,275
1"	2.67	8,744
1.5"	3.33	10,906
2"	10.67	34,944
3"	21.33	69,856
4"	33.33	109,156
6"	66.67	218,344
Multi-Family (Per Dwelling Unit)		$3,275

3.7 COMPARISON OF EXISTING AND PROPOSED WATER CONNECTION CHARGES

The proposed connection charge for a 3/4" meter represents a 328% increase to the current charge. Table 7 shows the proposed increases for each of the other meter sizes. It should be noted that RFC assumed that these charges will not be phased in, and will start at the beginning of FY 2018.

Table 7: Water Connection Charges – Existing and Proposed

Meter Size	Existing (FY 2016/2017)	Proposed (FY 2018)	Difference ($)	Difference (%)
3/4"	$1,000	$3,275	$2,275	328%
1"	1,667	8,744	7,077	525%
1.5"	3,333	10,906	7,573	327%
2"	6,667	34,944	28,277	524%
3"	14,667	69,856	55,189	476%
4"	28,000	109,156	81,156	390%
6"	57,667	218,344	160,677	379%

SECTION 4: WATER CAPITAL FINANCING PLAN

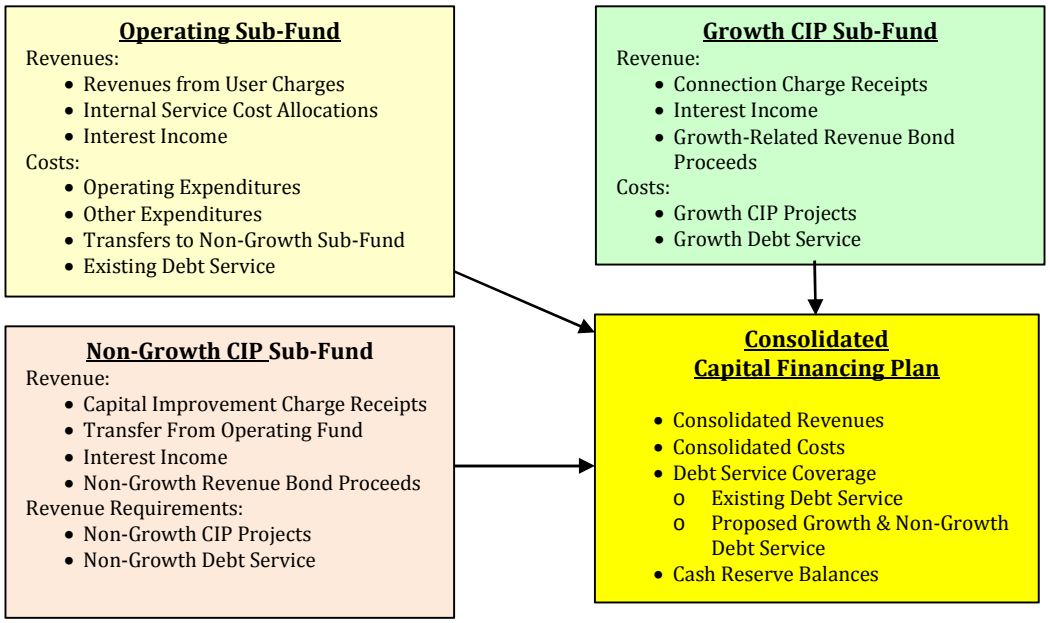
The next major objective of this study was to incorporate the proposed water connection charge receipts or revenues into a hypothetical long-term water capital financing plan that also includes user charge revenues and external debt financing. The purpose of this hypothetical capital financing plan is to inform stakeholders of the potential level of rate revenue increases and external debt financing required to fund the City's forecast water and wastewater CIP expenditures. The ultimate decision regarding the specific capital financing strategy utilized by the City will be made by the Norman Utilities Authority/Norman City Council.

4.1 OVERVIEW OF THE WATER CAPITAL FINANCING PLAN

The City's water utility finances its CIP expenditures using cash flows generated from four primary funding sources: 1) user charge revenues from the provision of water service; 2) connection charge receipts from new customers connecting to the water system; 3) external debt financing, and; 4) various miscellaneous revenue sources. RFC prepared a hypothetical long-term water utility capital financing strategy featuring a proposed mixed of these funding sources in order to illustrate the magnitude of potential user charge revenue increases and external debt financing required to successfully pay for the City's planned water utility capital expenditures.

Figure 1 presents a graphical illustration of the process used by RFC to develop a hypothetical water utility capital financing strategy.

Figure 1: Development of the Water Capital Financing Plan



4.2 WATER CAPITAL FINANCING PLAN ASSUMPTIONS

The key assumptions used in the development of RFC's hypothetical capital financing plan included the following:

Customer Account Growth:

- 1.6% Annual Growth in New Water Utility Connections

Annual Cost Escalation Inflation Rates:

- Construction Cost Inflation: 3%
- Salaries and Benefit: 5%;
- Supplies and Materials: 1%;
- Services and Maintenance: 1%
- Internal Services: 2%
- Cost Allocations: 1%
- Employee Turnover Savings: 5%

Debt Financing Assumptions:

- Month of Debt Issue: January
- Debt Service Repayment Delay: Repayment Begins Immediately After Issue
- Debt Coupon Rate: 4.25%
- Debt Term: 20 Years
- Debt Issuance Expense: 1.5%
- Debt Service Reserve: 0%

Cash Reserve Assumptions:

- Operating Reserve: 30 Days of Annual O&M Expenses
- Capital Reserve: Average of Five Years of Forecast Capital Expenditures
- Interest Earnings on Reserve Balances: 1.5%

Operating Revenue Allocation to CIP Expenditures:

- % to Growth CIP: 0%
- % to Non-Growth CIP: 100%

4.3 WATER CAPITAL FINANCING PLAN RESULTS

The hypothetical water utility capital financing plan developed by RFC is summarized in Table 8 and includes estimated connection charge revenues based on the proposed or calculated connection charge. It is important to note that the purpose of this hypothetical capital financing plan is to inform stakeholders of the potential level of rate revenue increases and external debt financing required to fund the City's forecast water and wastewater CIP expenditures. The ultimate decision regarding the specific capital financing strategy utilized by the City will be made by the Norman Utilities Authority/Norman City Council. As previously mentioned, the proposed connection charges were assumed to be implemented in FY 2018. The full details of the water utility capital financing plan are shown in pages A-2 through A-11 of Appendix A.

Table 8: Water – Summary of Hypothetical Capital Financing Plan ($ Millions)

Fiscal Year	Growth-Related CIP Expenditures (Adjusted for Inflation)	Debt Financing for Growth-Related CIP Expenditures	Non-Growth CIP Expenditures (Adjusted for Inflation)	Debt Financing for Non-Growth CIP Expenditures	% Increase in User Charge Revenues
FY 2016	$0.17	$0.00	$21.22	$0.00	0%
FY 2017	0.47	0.00	26.73	35.00	0%
FY 2018	2.17	0.00	10.73	0.00	22%
FY 2019	1.67	0.00	6.64	0.00	0%
FY 2020	0.00	0.00	6.72	0.00	22%
FY 2021	17.74	37.00	16.93	90.00	0%
FY 2022	9.67	0.00	50.24	0.00	10%
FY 2023	15.93	0.00	50.37	0.00	0%
FY 2024	8.30	10.00	10.40	0.00	3%
FY 2025	2.29	0.00	10.47	0.00	0%
Total	$58.41	$47.00	$210.46	$125.00	---

SECTION 5: WASTEWATER CONNECTION CHARGES

The process used by RFC to develop an updated wastewater connection charge schedule is similar to that used for water connection charges as discussed in Section 4. As a result, RFC will not reproduce much of the background material presented in the Section 4 regarding connection charge calculation methodologies.

The City's wastewater treatment plant, the South Water Reclamation Facility, when complete in 2017 will have 3.1 MGD of available capacity. Regulatory upgrades associated with meeting biological nutrient removal requirements (BNR) at this facility are driving significant CIP expenditures during the FY 2016 - FY 2025 planning horizon. The portion of wastewater CIP expenditures assigned to growth by the City Staff totals approximately totals approximately $13.8 million of a total $119.6 million, when expressed in uninflated 2015 dollars.

5.1 SELECTED METHODOLOGY: THE INCREMENTAL APPROACH

The City currently treats about 11 MGD of wastewater; however, for the purpose of this report, 13.9 MGD of the 17 MGD design capacity is dedicated to current or "obligated" customers. Therefore, the City has 3.1 MGD of available capacity for new customers in the existing wastewater system. When a system has capacity available in its existing infrastructure, such as this, connection fees can be calculated using either the equity buy-in or the hybrid connection charge method.

The equity buy-in method requires that new development pay its share of the existing system. The wastewater excise tax on new development is currently collecting funds that are used to pay for the capacity within existing wastewater infrastructure. In essence, the excise tax is serving as the "buy-in" portion of the existing capacity that is available for new customers.

However, the City's existing infrastructure cannot adequately handle future growth without additional investment. During the FY 2016 - FY 2025 planning horizon, the City must make CIP expenditures for treatment plant upgrades in order to comply with more stringent permit regulations. The portion of the regulatory compliance upgrades attributed or allocated to growth by City Staff is $13.8 million. In order to calculate the connection fee related to these future costs, RFC utilized the incremental method.

The combination of the buy-in method for the cost of existing infrastructure, and the incremental method for future costs, results in a hybrid method. In the City's case, the hybrid method fee that was calculated results in two individual charges, the wastewater excise tax (the buy-in portion) and the wastewater connection fee (the incremental method).

As discussed in Section 1.5, the City's existing wastewater excise tax on new development cannot be modified or repealed without voter approval. Therefore, RFC assumed this tax will remain constant

during the FY 2016 - FY 2025 planning horizon and no analysis of the excise tax was undertaken in this study.

5.2 FORECAST OF GROWTH-RELATED ASSET ADDTIONS

Appendix B pages B-16 and B-17 show the City's forecast FY 2016 - FY 2025 wastewater CIP expenditures. The only expense that can be attributed to growth is related to the upgrade of the Norman Water Reclamation Facility with BNR capabilities to meet future permit requirements. This facility has 3.1 MGD available for growth out of a total average capacity of 17 MGD. This equates to 18.24% of the existing facility being available to new customers. Therefore, 18.24% of the total cost of $75.7 million for this project, can be assessed to or attributed to meeting the needs of new development or growth; this growth-related portion is $13.8 million.

Future North Water Reclamation Facility

As discussed in Section 2.3, wastewater service in the northern portion of the City is limited by the capacity of Lift Station D. If the growth in the northern part of the City exceeds the capacity of this lift station, a new wastewater treatment facility (the North Water Reclamation Facility) may be required in the future. The City has indicated the potential need for this new wastewater treatment facility is beyond the FY 2016 - FY 2025 planning horizon considered in this study. When this facility comes into the planning timeframe, the costs associated with this project can be paid for by the existing wastewater excise tax on new development and/or a revised wastewater connection charge which incorporates the cost of this project.

5.3 ESTIMATE OF FUTURE CAPACITY ADDTIONS

RFC analyzed the wastewater discharge characteristics of the City's customers to determine the number of 5/8" and 3/4" connections that the 3.1 MGD capacity in the existing Norman Water Reclamation Facility can serve. The City assesses wastewater user charges based on average winter consumption, which is defined as metered water consumption in the months of December, January, and February. This is a common way that many utilities estimate indoor water usage, and therefore wastewater flows.

The average wastewater flows for 5/8" and 3/4" meters was calculated to be 161 gallons per day. Using this flow rate, the available 3.1 MGD in the plant would serve approximately 19,255 3/4" equivalent meters.

5.4 UNIT COST OF INCREMENTAL CAPACITY ADDITIONS

As previously discussed, during the FY 2016 - FY 2025 planning horizon, the City plans to invest $13.8 million BNR regulatory compliance costs assigned to growth-related wastewater infrastructure. Wastewater connection charges may not be adequate to provide the cash necessary to fund these projects in their entirety and debt financing will likely be required. Thus, in addition to forecast

construction costs of $13.8 million, the wastewater connection charge calculation also includes the present value of future debt interest costs. As part of the capital financing plan process, RFC has calculated that the City will need to issue $15 million in debt in order to pay for these system expansions and improvements. The present value of these borrowing costs was calculated to be $4.2 million (Appendix B page B-12).

Table 9 shows the calculation of the 3/4" wastewater connection charge based on FY 2016 - FY 2025 capacity additions costing $18.6 million that are capable of serving 19,255 3/4" connections. This calculated 3/4" connection charge of $934 reflects the incremental unit cost of capacity for new connections on the City's wastewater utility system. This connection charge is in addition to the wastewater excise tax. If no wastewater excise tax was assessed, then the connection charge would have to be recalculated in order to fully recover growth related costs.

Table 9: Calculation of Wastewater Connection Charge - 3/4" Meter

Description	Capacity Additions	Calculation
Uninflated Growth-Related CIP FY 2016 - FY 2025		$13,803,895
Plus: PV of Borrowing Cost - Future Debt		4,172,824
Total Cost for Connection Fee Calculation		$17,976,719
Capacity in Water Reclamation Facility Available for Growth (MGD)	3.1	
Estimated 3/4" Meter Contribution (gpd)	161	
Estimated Peaking Factor	1.0	
Maximum Gallons per Day	161	
Incremental Capacity	19,255	
Calculated Connection Charge ($17,976,719 / 19,250)		$934

5.5 PROPOSED FY 2018 WASTEWATER CONNECTION CHARGE SCHEDULE

The calculated connection charge in Table 9, is for a 3/4" meter. Each other meter size that is installed in a new building can draw a different demand on the distribution system. In order to account for these differences, RFC recommends using the flow equivalencies that are described in the *AWWA publication* *Manual of Water Supply Practices M6, Water Meters – Selection, Installation, Testing and Maintenance*. These flow equivalencies are calculated based on the peak flow that can pass through a meter of that size. The flow equivalencies of each meter size, and the proposed connection charge for each is shown in Table 10.

Table 10: Proposed Wastewater Connection Charge for FY 2018

Meter Size	AWWA M6 Flow Equivalency	Proposed
3/4"	1.00	$934
1"	2.67	2,494
1.5"	3.33	3,110
2"	10.67	9,966
3"	21.33	19,922
4”	33.33	31,120
6”	66.67	62,270
Multi-Family (per Dwelling Unit)		$934

5.6 COMPARISON OF EXISTING AND PROPOSED WASTEWATER CONNECTION CHARGES

The proposed connection charge for a 3/4” meter represents a 340% increase to the current charge. Table 11 shows the proposed increases for each of the other meter sizes.

Table 11: Wastewater Connection Charges – Current and Proposed

Meter Size	Existing (FY 2016/2017)	Proposed (FY 2018)	Difference ($)	Difference (%)
¾”	$275	$934	$659	340%
1"	550	2,494	$1,944	453%
1.5"	1,100	3,110	$2,010	283%
2"	1,925	9,966	$8,041	518%
3"	4,625	19,922	$15,297	431%
4"	7,988	31,120	$23,143	390%
6"	18,381	62,270	$43,889	339%

SECTION 6: WASTEWATER CAPITAL FINANCING PLAN

6.1 RESULTS OF THE WASTEWATER CAPITAL PLANNING PROCESS

The hypothetical wastewater capital financing plan developed by RFC is summarized in Table 12 and includes projected wastewater connection charge revenue based on the proposed connection charge. The methodologies and assumptions used by RFC to develop the wastewater capital financing plan are similar to those used to develop the water capital financing plan discussed in Section 4. The sole difference between each capital financing plan is the inclusion of forecast receipts from the wastewater excise tax on new development to partially fund growth-related CIP expenditures in wastewater capital financing plan.

It is important to note that the purpose of this hypothetical capital financing plan is to inform stakeholders of the potential level of rate revenue increases and external debt financing required to fund the City's forecast water and wastewater CIP expenditures. The ultimate decision regarding the specific capital financing strategy utilized by the City will be made by the Norman Utilities Authority/Norman City Council. The full details of the wastewater utility capital financing plan are shown in Appendix B pages B-2 through B-11.

Table 12: Wastewater – Summary of Hypothetical Capital Financing Plan ($ Millions)

Fiscal Year	Growth-Related CIP Expenditures (Adjusted for Inflation)	Debt Financing for Growth-Related CIP Expenditures	Non-Growth CIP Expenditures (Adjusted for Inflation)	Debt Financing for Non-Growth CIP Expenditures	% Increase in User Charge Revenues
FY 2016	$0.00	$0.00	$29.71	$0.00	0%
FY 2017	0.00	0.00	2.89	0.00	0%
FY 2018	0.00	0.00	3.41	0.00	10%
FY 2019	0.00	0.00	8.11	0.00	0%
FY 2020	0.90	0.00	8.85	0.00	10%
FY 2021	0.90	0.00	9.12	0.00	0%
FY 2022	7.32	15.00	38.05	80.00	10%
FY 2023	7.54	0.00	39.19	0.00	0%
FY 2024	0.00	0.00	5.56	0.00	10%
FY 2025	0.00	0.00	5.73	0.00	0%
Total	$16.62	$15.00	$150.61	$80.00	---

SECTION 7: CONNECTION CHARGE SURVEY

The connection charge survey prepared by RFC compared the City's existing and proposed connection charges to the water and wastewater connection charges in 9 communities specified by City Staff[3]. For purposes of the survey, the City's connection charges were defined as the FY 2016 existing and proposed connection charge schedules and the current wastewater excise tax on new development. Information from the survey communities was compiled as of April 2016, and does not project any future increases that may occur. The survey included the cost of development for three different development types: detached single family residential, multi-family residential and commercial.

Table 13 shows the survey communities.

Table 13: Connection Charge Survey Communities

Broken Arrow, OK	Midwest City, OK
Denton, TX	Moore, OK
Edmond, OK	Oklahoma City, OK
Lawrence, KS	Stillwater, OK
Lawton, OK	

7.1 SURVEY RESULTS

Single Family Residential

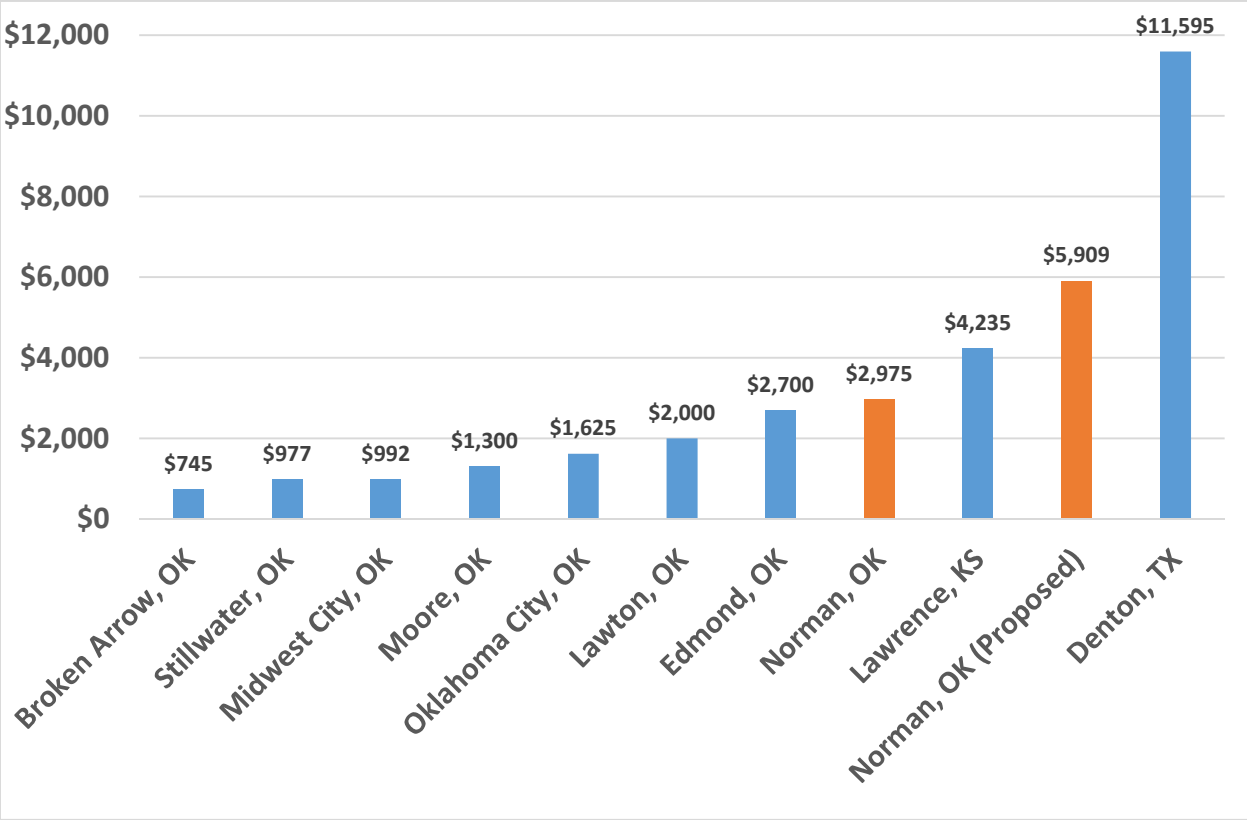
The single family residential water and wastewater connection charges for the survey communities were based on the following profile:

- Meter Size: ¾”
- Area: 1,500 sq. ft. of living space
- Number of Toilets: 2

[3] In this section of the report the term “connection charge(s)” also includes the cost of the physical connection to the water and wastewater system (e.g., the cost of the meter and installation) and in the case of Norman, it also includes the wastewater excise tax.

When utilizing these criteria, the following results were obtained:

Figure 2: Single Family Residential – Connection Charge Survey Results



The City currently ranks 4th for combined water and wastewater connection charges for a single family residential home. The City's fees are less than $1,000 more than the City of Edmond, OK (5th), and Lawton, OK (6th).

When the proposed connection fees for water and wastewater are incorporated, the City's rank increases to 2nd. Assuming that there are no other adjustments amongst the comparable communities, the City would be become more expensive than Lawrence, KS.

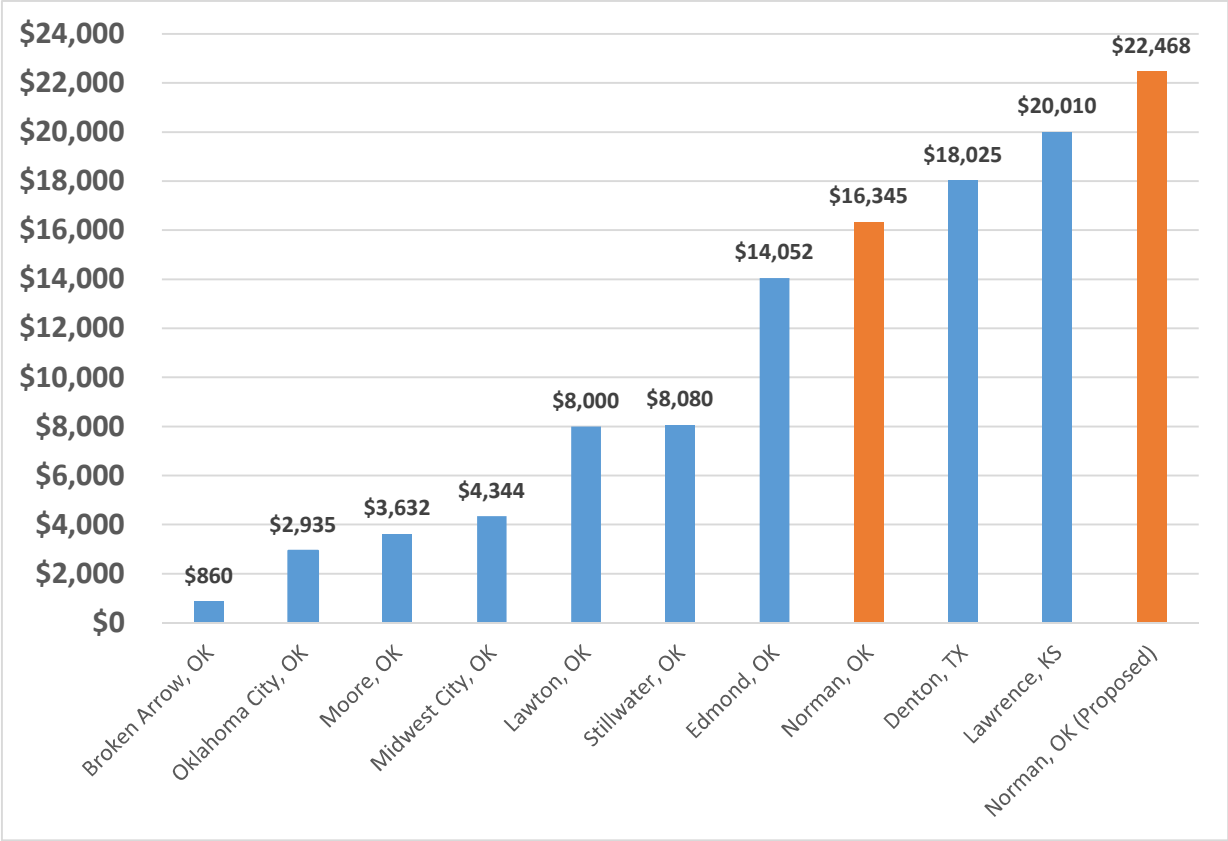
Multi-Family Residential

The multi-family residential water and wastewater connection charges for the survey communities were based on the following profile:

- Meter Size: 1"
- Area: 6,000 sq. ft.
- Number of Units: 4
- Number of Toilets per Unit: 2
- Sewer Diameter: 4"

When utilizing these criteria, the following results were obtained:

Figure 3: Multi-Family Residential – Connection Charge Survey Results



The City currently ranks 4th for combined water and wastewater connection charges for a multi-family home with 4 units. The City is within $2,500 of Edmond, OK (ranked 5th).

When the proposed water and wastewater connection charges are incorporated, the City's rank increases to 1st, assuming there are no adjustments amongst the comparable communities.

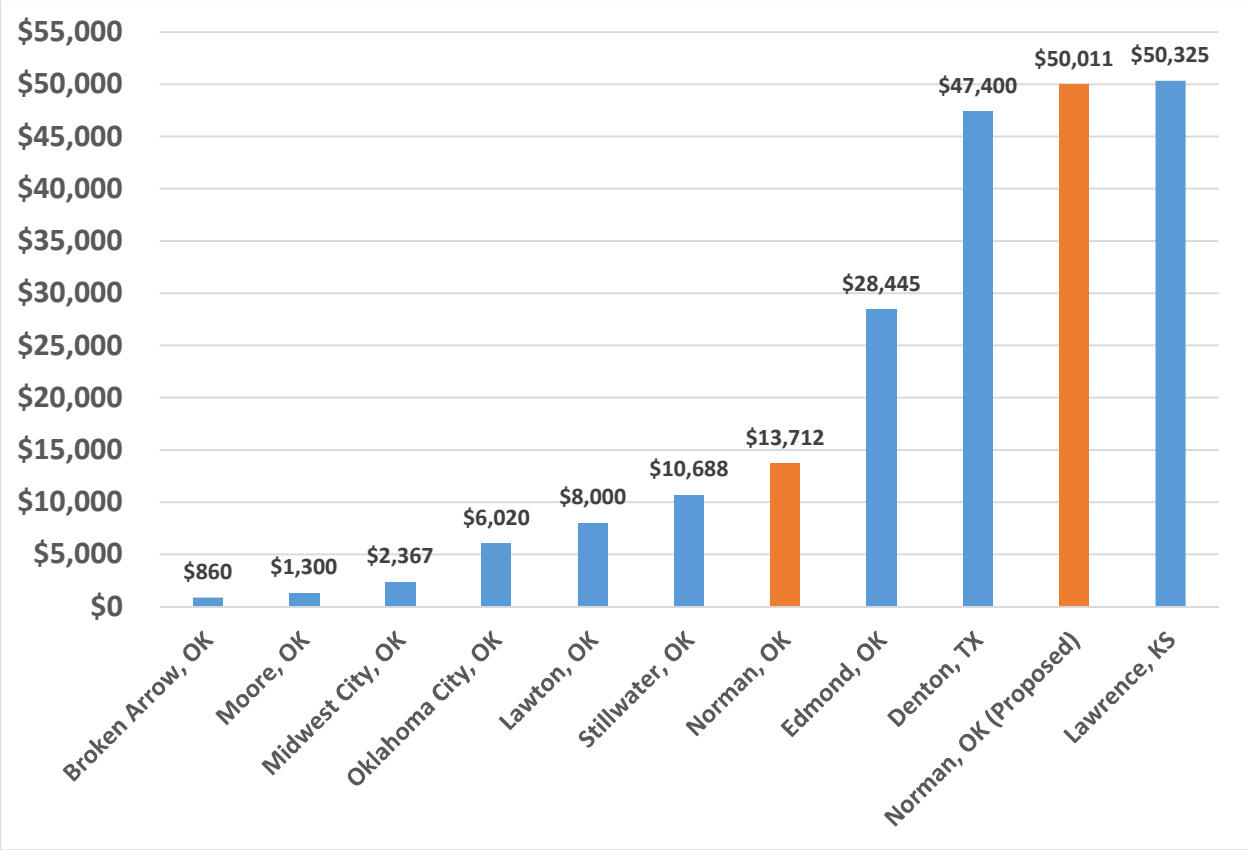
Commercial

The commercial water and wastewater connection charges for the survey communities were based on the following profile:

- Meter Size: 2"
- Area: 10,000 sq. ft.
- Number of Employees: 30
- Gallons per Day over 30 gallons per day per employee: 0 gallons
- Number of Toilets: 5
- Sewer Diameter: 6"

When utilizing these criteria, the following results were obtained:

Figure 4: Commercial – Connection Charge Survey Results



The City currently ranks 5th for combined water and wastewater connection charges. The closest comparable city is Stillwater, OK (ranked 6th), which is within $3,100 of the City.

When the proposed water and wastewater connection charges are incorporated, the City's rank increases to 2nd. The City becomes more expensive than Edmond, OK.

7.2 SURVEY CONCLUSIONS

It is extremely difficult to draw definitive conclusions regarding the impact of water and wastewater connection charges on the overall level residential and commercial property development within a specific community, metropolitan area, state or region.

As noted above, for each property type, the City's current and proposed connection charges are among the highest for the selected survey communities. This outcome does not necessarily indicate that the City's past level of residential and commercial development has been negatively impacted by the level of water and wastewater connection charges. Nor does it necessarily indicate that the

City's future level of residential and commercial development will be negatively impacted by the level of water and wastewater connection charges. Connection charges provide the funding needed to serve the demands of new development. Absent connection charges how would the community fund growth-related capital needs? The only other material funding source comes from user charges or rates.

RFC holds this position because the level of residential and commercial development within any community occurs for a variety of reasons entirely unrelated to the level of water and wastewater connection charges. These factors include, but are not necessarily limited to:

- Local and regional employment levels
- Transportation infrastructure
- School district performance
- Quality of life considerations related to public amenities
- Public safety and crime rate issues
- The cost of other connection charges such as building permits and non-utility development impact fees for parks, public safety, libraries, etc.
- A myriad of other potentially non-quantifiable considerations

Further, it is important to note that the level of water and wastewater connection charges in any community is a reflection of the unique cost structure of the utilities providing service. Some communities have significantly higher costs than others due to their topography and proximity to water supplies.

The level of development water and wastewater connection charges in any community also reflects the balance of cost recovery between water and wastewater user charge revenues and developer paid connection charges. Communities that have elected to recover the majority of their growth-related infrastructure costs via water and wastewater user charge revenues will, by definition, have lower water and wastewater connection charges. Similarly, they may have water and wastewater rates far higher than communities who have chosen to recover the majority of their water and wastewater growth-related infrastructure costs via connection charges.

APPENDIX A:

WATER CONNECTION CHARGES AND CAPITAL FINANING PLAN

City of Norman, Oklahoma
2015 Water Connection Charge Study
Water Capital Financing Plan - Assumptions

Table:	A-1
Schedule:	Water Inputs
Date:	4/22/2016
Range:	W_Assum

Interest Earnings on Reserves	1.0%
Annual Construction Cost Inflation	3.0%
Inflation of Connections Fees per ENR Index?	Yes
Operating Reserve (Days Annual O&M)	30
Capital Reserve (Years of Average Capital Expenses)	5
Target Debt Service Coverage Ratio	1.5
Operating Expenditure Escalation Rates (1)	
Salaries and Benefits	5.0%
Supplies and Materials	1.0%
Services and Maintenance	1.0%
Internal Services	2.0%
Cost Allocations	1.0%
Employee Turnover Savings	5.0%
Operating Revenue Transfers to CIP	
% to Growth Sub-Fund	0.0%
% to Non-Growth Sub-Fund	100.0%
Debt Financing Assumptions	
Month of Issue	1
Repayment Delay	0
Interest Rate	4.25%
Payment Period	20
Issuance Expense	1.5%
Debt Service Reserve	100%

Notes:

1) Percent increase for operating expenditures are based on Norman 2016 Budget.
2) Both revenue increases and connection fee increases will start in FY 2018.

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Assumptions

Table: A-2
Schedule: Water Master
Date: 4/22/2016
Range: W_Master

Proposed Rate Increases	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Annual Increases	0.0%	0.0%	22.0%	0.0%	22.0%	0.0%	10.0%	0.0%	3.0%	0.0%
Months Effective	12	12	12	12	12	12	12	12	12	12
Actual % Increase	0.0%	0.0%	22.0%	0.0%	22.0%	0.0%	10.0%	0.0%	3.0%	0.0%
Cumulative Increases	0.0%	0.0%	22.0%	22.0%	48.8%	48.8%	63.7%	63.7%	68.6%	68.6%
Operating Fund										
Operating Reserve Ending Balance	1,400,238	1,084,114	1,071,159	1,096,278	1,122,373	1,149,467	1,177,911	1,207,159	1,237,547	1,269,126
Operating Reserve Target	1,400,238	1,084,114	1,071,159	1,096,278	1,122,373	1,149,467	1,177,911	1,207,159	1,237,547	1,269,126
Operating Reserve Variance	0	0	0	0	0	0	0	0	0	0
Growth CIP Sub-Fund										
Growth CIP Debt Issue ($ Millions)						$37			$10	
Growth CIP Sub-Fund Reserve Ending Balance	227,421	577,874	1,583,636	3,311,555	6,904,384	23,999,198	15,705,309	1,246,332	2,914,685	1,768,507
Norman Policy Target Reserve	897,350	4,410,610	6,249,948	9,000,982	10,326,364	10,785,066	9,046,445	8,839,030	5,294,710	2,293,510
Non-Growth CIP										
Non-Growth CIP Debt Issue ($ Millions)		$35				$90				
Non-Growth CIP Sub-Fund Ending Balance	305,806	8,556,685	5,384,041	6,347,756	12,635,948	84,313,981	44,220,099	3,795,660	4,386,227	5,111,997
Norman Policy Target Reserve	14,408,092	13,548,390	18,251,852	26,179,218	26,931,636	27,683,134	30,370,555	23,745,970	10,434,790	10,472,490
Consolidated										
Consolidated Ending Balance	$1,933,465	$10,218,674	$8,038,836	$10,755,589	$20,662,705	$109,462,646	$61,103,319	$6,249,151	$8,538,458	$8,149,630
Debt Service Coverage										
DSCR without Connection Charges (Target 1.5X)	1.61	1.57	2.52	2.54	3.63	1.25	1.47	1.48	1.49	1.50
DSCR with Connection Charges (Target 1.5X)	1.79	1.73	3.16	3.22	4.35	1.51	1.74	1.77	1.78	1.81
Demand Growth										
% Revenue Growth Due to Increase in Demand	0.0%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
Revenue from Rate Increases										
2016	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2017		0	0	0	0	0	0	0	0	0
2018			4,200,474	4,267,543	4,335,611	4,404,901	4,475,412	4,547,034	4,619,877	4,694,053
2019				0	0	0	0	0	0	0
2020					5,289,445	5,373,979	5,460,003	5,547,381	5,636,250	5,726,744
2021						0	0	0	0	0
2022							3,027,820	3,076,275	3,125,557	3,175,740
2023								0	0	0
2024									1,031,434	1,047,994
2025										0
Total	$0	$0	$4,200,474	$4,267,543	$9,625,056	$9,778,880	$12,963,235	$13,170,690	$14,413,117	$14,644,531

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Operating Sub-Fund Financial Plan (RFC Layout)

Table: A-3
Schedule: Water Operating
Date: 4/22/2016
Range: W_Op

Operating Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Operating Revenues											
Enterprise Fund Fees/Chgs	$18,500,000	$18,793,755	$19,093,062	$19,397,921	$19,707,323	$20,022,276	$20,342,782	$20,668,335	$20,999,441	$21,336,603	$198,861,498
Revenue from Rate Increases	0	0	4,200,474	4,267,543	9,625,056	9,778,880	12,963,235	13,170,690	14,413,117	14,644,531	83,063,525
Total Rate Revenue	**18,500,000**	**18,793,755**	**23,293,536**	**23,665,464**	**29,332,379**	**29,801,156**	**33,306,017**	**33,839,026**	**35,412,558**	**35,981,134**	**281,925,024**
Cost Allocation	764,390	772,034	779,754	787,552	795,428	803,382	811,416	819,530	827,726	836,003	7,997,216
Total Operating Revenues	**19,264,390**	**19,565,789**	**24,073,290**	**24,453,016**	**30,127,807**	**30,604,539**	**34,117,433**	**34,658,556**	**36,240,284**	**36,817,137**	**289,922,240**
Other Revenues											
Interest Income	124,690	43,785	9,637	12,459	15,932	35,165	8,911	6,460	14,212	12,034	283,284
Other Misc. Revenue	0	0	0	0	0	0	0	0	0	0	0
Total Other Revenues	**124,690**	**43,785**	**9,637**	**12,459**	**15,932**	**35,165**	**8,911**	**6,460**	**14,212**	**12,034**	**283,284**
Total Revenues	**19,389,080**	**19,609,574**	**24,082,926**	**24,465,475**	**30,143,739**	**30,639,704**	**34,126,344**	**34,665,016**	**36,254,496**	**36,829,170**	**290,205,524**
Operating Expenditures											
Salaries and Benefits	3,896,750	4,048,616	4,119,069	4,325,023	4,541,274	4,768,337	5,006,754	5,257,091	5,519,945	5,795,943	47,278,802
Supplies and Materials	2,776,961	2,456,023	2,480,583	2,505,389	2,530,443	2,555,747	2,581,305	2,607,118	2,633,189	2,659,521	25,786,280
Services and Maintenance	3,431,821	3,085,700	3,116,557	3,147,723	3,179,200	3,210,992	3,243,102	3,275,533	3,308,288	3,341,370	32,340,285
Internal Services	289,708	204,272	208,357	212,525	216,775	221,111	225,533	230,044	234,645	239,338	2,282,307
Cost Allocations	1,792,321	1,856,055	1,874,616	1,893,362	1,912,295	1,931,418	1,950,732	1,970,239	1,989,942	2,009,841	19,180,821
Employee Turnover Savings	(58,451)	(60,729)	(61,786)	(64,875)	(68,119)	(71,525)	(75,101)	(78,856)	(82,799)	(86,939)	(709,180)
Total Operating Expenditures	**12,129,110**	**11,589,937**	**11,737,396**	**12,019,147**	**12,311,868**	**12,616,080**	**12,932,324**	**13,261,169**	**13,603,210**	**13,959,074**	**126,159,315**
Other Expenditures											
Master Conservancy Debt	268,126	266,669	72,811	72,174	71,829	71,523	75,000	75,000	75,000	75,000	1,123,132
Capital Equipment	605,050	365,126	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	2,810,176
I/F Transfer-Water Reclamation Fund	0	0	0	0	0	0	0	0	0	0	0
I/F Transfer-Hallpark Fund	0	0	0	0	0	0	0	0	0	0	0
I/F Transfer-General Fund	945,000	968,325	992,230	1,016,730	1,041,839	1,067,573	1,093,928	1,120,934	1,148,607	1,176,963	10,572,129
I/F Transfer-Capital Fund	0	0	0	0	0	0	0	0	0	0	0
Capital Projects- 15 Issue	3,088,939	0	0	0	0	0	0	0	0	0	0
Total Other Expenditures	**4,907,115**	**1,600,120**	**1,295,041**	**1,318,904**	**1,343,668**	**1,369,096**	**1,398,928**	**1,425,934**	**1,453,607**	**1,481,963**	**14,505,437**
Existing Debt Service											
Debt Service - 06 Issue	0	0	0	0	0	0	0	0	0	0	0
Debt Service - 10 Issue	804,396	806,896	806,896	806,896	806,896	806,896	806,896	806,896	806,896	806,896	8,066,460
Debt Service - 15 Issue	1,473,749	1,496,169	1,480,449	1,479,410	1,477,891	1,470,840	1,470,840	1,470,840	1,470,840	1,470,840	14,761,868
Total Existing Debt Service	**2,278,145**	**2,303,065**	**2,287,345**	**2,286,306**	**2,284,787**	**2,277,736**	**2,277,736**	**2,277,736**	**2,277,736**	**2,277,736**	**22,828,328**
Transfers to CIP Funds	21,803,618	4,432,575	8,776,099	8,815,999	14,177,322	14,349,698	17,488,911	17,670,929	18,889,555	19,078,818	145,483,524
Total Expenditures	**41,117,988**	**19,925,697**	**24,095,881**	**24,440,356**	**30,117,645**	**30,612,610**	**34,097,900**	**34,635,768**	**36,224,108**	**36,797,591**	**312,065,543**
Net Operating Surplus/(Deficit)	(21,728,908)	(316,123)	(12,955)	25,119	26,095	27,094	28,445	29,248	30,387	31,580	(21,860,020)
Operating Reserve											
Beginning Balance	23,129,146	1,400,238	1,084,114	1,071,159	1,096,278	1,122,373	1,149,467	1,177,911	1,207,159	1,237,547	
Add: Net Operating Surplus/(Deficit)	(21,728,908)	(316,123)	(12,955)	25,119	26,095	27,094	28,445	29,248	30,387	31,580	
Ending Non-Growth Balance	1,400,238	1,084,114	1,071,159	1,096,278	1,122,373	1,149,467	1,177,911	1,207,159	1,237,547	1,269,126	
Target Operating Reserve	1,400,238	1,084,114	1,071,159	1,096,278	1,122,373	1,149,467	1,177,911	1,207,159	1,237,547	1,269,126	
Variance from Target Operating Reserve	0	0	0	0	0	0	0	(0)	0	0	

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - CIP Sub-Fund Financial Plans (RFC Layout)

Table: A-4
Schedule: Water Sub-Funds
Date: 4/22/2016
Range: W_Sub

Growth Sub-Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Beginning Balance	$0	**$227,421**	**$577,874**	**$1,583,636**	**$3,311,555**	**$6,904,384**	**$23,999,198**	**$15,705,309**	**$1,246,332**	**$2,914,685**	
Sources of Funds											
Connection Charge Receipts	400,671	815,342	3,173,124	3,378,499	3,544,703	3,739,309	3,971,885	4,165,700	4,387,120	4,654,323	32,230,676
Transfer In from Operations	0	0	0	0	0	0	0	0	0	0	0
Interest Income	0	7,111	5,137	18,420	48,126	216,323	186,049	86,127	14,673	28,341	610,308
Debt Financing											
Debt Issue	0	0	0	0	0	37,000,000	0	0	10,000,000	0	47,000,000
Transfer to Debt Service Reserve	0	0	0	0	0	2,783,134	0	0	752,198	0	3,535,332
Bond Issuance Cost	0	0	0	0	0	555,000	0	0	150,000	0	705,000
Net Revenue Bond Proceeds	0	0	0	0	0	33,661,866	0	0	9,097,802	0	42,759,668
Total Sources of Funds	**400,671**	**1,049,874**	**3,756,136**	**4,980,555**	**6,904,384**	**44,521,882**	**28,157,132**	**19,957,136**	**14,745,927**	**7,597,349**	**132,071,046**
Uses of Funds											
Growth-Related Capital Projects	173,250	472,000	2,172,500	1,669,000	0	17,739,550	9,668,690	15,927,670	8,295,910	2,293,510	58,412,080
Growth Related Debt Service	0	0	0	0	0	2,783,134	2,783,134	2,783,134	3,535,332	3,535,332	15,420,066
Total Uses of Funds	**173,250**	**472,000**	**2,172,500**	**1,669,000**	**0**	**20,522,684**	**12,451,824**	**18,710,804**	**11,831,242**	**5,828,842**	**73,832,146**
Ending Balance	**$227,421**	**$577,874**	**$1,583,636**	**$3,311,555**	**$6,904,384**	**$23,999,198**	**$15,705,309**	**$1,246,332**	**$2,914,685**	**$1,768,507**	
Target Reserve	897,350	4,410,610	6,249,948	9,000,982	10,326,364	10,785,066	9,046,445	8,839,030	5,294,710	2,293,510	
Variance from Target Reserve	(669,929)	(3,832,736)	(4,666,312)	(5,689,427)	(3,421,980)	13,214,132	6,658,864	(7,592,698)	(2,380,025)	(525,003)	

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - CIP Sub-Fund Financial Plans (RFC Layout)

Table: A-4
Schedule: Water Sub-Funds
Date: 4/22/2016
Range: W_Sub

Non-Growth Sub-Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Beginning Balance	$0	**$305,806**	**$8,556,685**	**$5,384,041**	**$6,347,756**	**$12,635,948**	**$84,313,981**	**$44,220,099**	**$3,795,660**	**$4,386,227**	
Sources of Funds											
Capital Improvement Charge Receipts	1,313,000	1,326,130	1,339,391	1,352,785	1,366,313	1,388,149	1,410,370	1,432,940	1,455,896	1,479,271	13,864,245
Transfer In from Operations	21,803,618	4,432,575	8,776,099	8,815,999	14,177,322	14,349,698	17,488,911	17,670,929	18,889,555	19,078,818	145,483,524
Interest Income	0	9,562	76,060	62,625	92,251	395,901	653,627	242,500	44,686	42,650	1,619,863
Debt Financing											
Debt Issue	0	35,000,000	0	0	0	90,000,000	0	0	0	0	125,000,000
Transfer to Debt Service Reserve	0	2,632,694	0	0	0	6,769,785	0	0	0	0	9,402,479
Bond Issuance Cost	0	525,000	0	0	0	1,350,000	0	0	0	0	1,875,000
Net Revenue Bond Proceeds	0	31,842,306	0	0	0	81,880,215	0	0	0	0	113,722,521
Total Sources of Funds	**23,116,618**	**37,916,379**	**18,748,235**	**15,615,450**	**21,983,642**	**110,649,911**	**103,866,889**	**63,566,469**	**24,185,796**	**24,986,967**	**444,636,355**
Uses of Funds											
Non-Growth Related Capital Projects	21,231,958	26,727,000	10,731,500	6,635,000	6,715,000	16,933,450	50,244,310	50,368,330	10,397,090	10,472,490	210,456,128
Non-Growth Related Debt Service	0	2,632,694	2,632,694	2,632,694	2,632,694	9,402,479	9,402,479	9,402,479	9,402,479	9,402,479	57,543,174
Adjustment to Match FY 2016 Actual CIP	1,578,854	0	0	0	0	0	0	0	0	0	1,578,854
Total Uses of Funds	**22,810,812**	**29,359,694**	**13,364,194**	**9,267,694**	**9,347,694**	**26,335,929**	**59,646,789**	**59,770,809**	**19,799,569**	**19,874,969**	**269,578,156**
Ending Balance	**$305,806**	**$8,556,685**	**$5,384,041**	**$6,347,756**	**$12,635,948**	**$84,313,981**	**$44,220,099**	**$3,795,660**	**$4,386,227**	**$5,111,997**	
Target Reserve	14,408,092	13,548,390	18,251,852	26,179,218	26,931,636	27,683,134	30,370,555	23,745,970	10,434,790	10,472,490	
Variance from Target Reserve	(14,102,286)	(4,991,705)	(12,867,811)	(19,831,462)	(14,295,688)	56,630,847	13,849,544	(19,950,310)	(6,048,563)	(5,360,493)	

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Consolidated (RFC Layout)

Table: A-5
Schedule: Water Consolidated
Date: 4/22/2016
Range: W_Cons

Consolidated Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Operating Revenues											
Enterprise Fund Fees/Chgs	18,500,000	18,793,755	19,093,062	19,397,921	19,707,323	20,022,276	20,342,782	20,668,335	20,999,441	21,336,603	$198,861,498
Revenue from Rate Increases	0	0	4,200,474	4,267,543	9,625,056	9,778,880	12,963,235	13,170,690	14,413,117	14,644,531	83,063,525
Total Rate Revenue	**18,500,000**	**18,793,755**	**23,293,536**	**23,665,464**	**29,332,379**	**29,801,156**	**33,306,017**	**33,839,026**	**35,412,558**	**35,981,134**	**281,925,024**
Cost Allocation	764,390	772,034	779,754	787,552	795,428	803,382	811,416	819,530	827,726	836,003	7,997,216
Total Operating Revenues	**19,264,390**	**19,565,789**	**24,073,290**	**24,453,016**	**30,127,807**	**30,604,539**	**34,117,433**	**34,658,556**	**36,240,284**	**36,817,137**	**289,922,240**
Other Revenues											
Interest Income	124,690	60,458	90,833	93,505	156,310	647,390	848,587	335,087	73,570	83,025	0
Other Misc. Revenue	0	0	0	0	0	0	0	0	0	0	0
Connection Charge Receipts	400,671	815,342	3,173,124	3,378,499	3,544,703	3,739,309	3,971,885	4,165,700	4,387,120	4,654,323	32,230,676
Capital Improvement Charge	1,313,000	1,326,130	1,339,391	1,352,785	1,366,313	1,388,149	1,410,370	1,432,940	1,455,896	1,479,271	13,864,245
Total Other Revenues	**1,838,361**	**2,201,930**	**4,603,349**	**4,824,788**	**5,067,326**	**5,774,847**	**6,230,842**	**5,933,728**	**5,916,586**	**6,216,619**	**46,094,921**
Total Revenues	**21,102,751**	**21,767,719**	**28,676,638**	**29,277,804**	**35,195,133**	**36,379,386**	**40,348,275**	**40,592,284**	**42,156,870**	**43,033,756**	**338,530,616**
Operating Expenditures											
Salaries and Benefits	3,896,750	4,048,616	4,119,069	4,325,023	4,541,274	4,768,337	5,006,754	5,257,091	5,519,945	5,795,943	47,278,802
Supplies and Materials	2,776,961	2,456,023	2,480,583	2,505,389	2,530,443	2,555,747	2,581,305	2,607,118	2,633,189	2,659,521	25,786,280
Services and Maintenance	3,431,821	3,085,700	3,116,557	3,147,723	3,179,200	3,210,992	3,243,102	3,275,533	3,308,288	3,341,370	32,340,285
Internal Services	289,708	204,272	208,357	212,525	216,775	221,111	225,533	230,044	234,645	239,338	2,282,307
Cost Allocations	1,792,321	1,856,055	1,874,616	1,893,362	1,912,295	1,931,418	1,950,732	1,970,239	1,989,942	2,009,841	19,180,821
Employee Turnover Savings	(58,451)	(60,729)	(61,786)	(64,875)	(68,119)	(71,525)	(75,101)	(78,856)	(82,799)	(86,939)	(709,180)
Total Operating Expenditures	**12,129,110**	**11,589,937**	**11,737,396**	**12,019,147**	**12,311,868**	**12,616,080**	**12,932,324**	**13,261,169**	**13,603,210**	**13,959,074**	**126,159,315**
Other Expenditures											
Master Conservancy Debt	268,126	266,669	72,811	72,174	71,829	71,523	75,000	75,000	75,000	75,000	1,123,132
Capital Equipment	605,050	365,126	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	2,810,176
I/F Transfer-Water Reclamation Fund	0	0	0	0	0	0	0	0	0	0	0
I/F Transfer-Hallpark Fund	0	0	0	0	0	0	0	0	0	0	0
I/F Transfer-General Fund	945,000	968,325	992,230	1,016,730	1,041,839	1,067,573	1,093,928	1,120,934	1,148,607	1,176,963	10,572,129
I/F Transfer-Capital Fund	0	0	0	0	0	0	0	0	0	0	0
Capital Projects - 15 Issue	3,088,939	0	0	0	0	0	0	0	0	0	3,088,939
Total Other Expenditures	**4,907,115**	**1,600,120**	**1,295,041**	**1,318,904**	**1,343,668**	**1,369,096**	**1,398,928**	**1,425,934**	**1,453,607**	**1,481,963**	**17,594,376**
Debt Service											
Existing Debt Service											
Debt Service - 06 Issue	0	0	0	0	0	0	0	0	0	0	0
Debt Service - 10 Issue	804,396	806,896	806,896	806,896	806,896	806,896	806,896	806,896	806,896	806,896	8,066,460
Debt Service - 15 Issue	1,473,749	1,496,169	1,480,449	1,479,410	1,477,891	1,470,840	1,470,840	1,470,840	1,470,840	1,470,840	14,761,868
Total Existing Debt Service	**2,278,145**	**2,303,065**	**2,287,345**	**2,286,306**	**2,284,787**	**2,277,736**	**2,277,736**	**2,277,736**	**2,277,736**	**2,277,736**	**22,828,328**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Consolidated (RFC Layout)

Table: A-5
Schedule: Water Consolidated
Date: 4/22/2016
Range: W_Cons

Consolidated Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Proposed Growth CIP Debt Service											
2016 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2017 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2018 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2019 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2020 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2021 Revene Bond Issue	0	0	0	0	0	2,783,134	2,783,134	2,783,134	2,783,134	2,783,134	13,915,669
2022 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2023 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2024 Revene Bond Issue	0	0	0	0	0	0	0	0	752,198	752,198	1,504,397
2025 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
Total Growth Debt Service	**0**	**0**	**0**	**0**	**0**	**2,783,134**	**2,783,134**	**2,783,134**	**3,535,332**	**3,535,332**	**15,420,066**
Proposed Non-Growth CIP Debt Service											
2016 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2017 Revene Bond Issue	0	2,632,694	2,632,694	2,632,694	2,632,694	2,632,694	2,632,694	2,632,694	2,632,694	2,632,694	23,694,248
2018 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2019 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2020 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2021 Revene Bond Issue	0	0	0	0	0	6,769,785	6,769,785	6,769,785	6,769,785	6,769,785	33,848,926
2022 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2023 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2024 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2025 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
Total Non-Growth Debt Service	**0**	**2,632,694**	**2,632,694**	**2,632,694**	**2,632,694**	**9,402,479**	**9,402,479**	**9,402,479**	**9,402,479**	**9,402,479**	**57,543,174**
Total Debt Service	**2,278,145**	**4,935,759**	**4,920,039**	**4,919,000**	**4,917,481**	**14,463,349**	**14,463,349**	**14,463,349**	**15,215,548**	**15,215,548**	**95,791,568**
Capital Projects											
Growth-Related Capital Projects	173,250	472,000	2,172,500	1,669,000	0	17,739,550	9,668,690	15,927,670	8,295,910	2,293,510	58,412,080
Non-Growth Related Capital Projects	21,231,958	26,727,000	10,731,500	6,635,000	6,715,000	16,933,450	50,244,310	50,368,330	10,397,090	10,472,490	210,456,128
Adjustment to Match FY 2016 Actual CIP	1,578,854	0	0	0	0	0	0	0	0	0	1,578,854
Total Capital Projects	**22,984,062**	**27,199,000**	**12,904,000**	**8,304,000**	**6,715,000**	**34,673,000**	**59,913,000**	**66,296,000**	**18,693,000**	**12,766,000**	**270,447,062**
Total Expenditures	**42,298,432**	**45,324,816**	**30,856,476**	**26,561,051**	**25,288,017**	**63,121,525**	**88,707,602**	**95,446,452**	**48,965,364**	**43,422,584**	**509,992,321**
Net Operating Surplus/(Deficit)	(21,195,681)	(23,557,097)	(2,179,838)	2,716,753	9,907,116	(26,742,139)	(48,359,327)	(54,854,169)	(6,808,494)	(388,828)	(171,461,704)

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Consolidated (RFC Layout)

Table: A-5
Schedule: Water Consolidated
Date: 4/22/2016
Range: W_Cons

Consolidated Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Combined Reserve											
Beginning Balance	23,129,146	1,933,465	10,218,674	8,038,836	10,755,589	20,662,705	109,462,646	61,103,319	6,249,151	8,538,458	
Add: Net Operating Surplus/(Deficit)	(21,195,681)	(23,557,097)	(2,179,838)	2,716,753	9,907,116	(26,742,139)	(48,359,327)	(54,854,169)	(6,808,494)	(388,828)	
Debt Financing											
Debt Issue	0	35,000,000	0	0	0	127,000,000	0	0	10,000,000	0	172,000,000
Transfer to Debt Service Reserve	0	2,632,694	0	0	0	9,552,919	0	0	752,198	0	12,937,812
Bond Issuance Cost	0	525,000	0	0	0	1,905,000	0	0	150,000	0	2,580,000
Net Revenue Bond Proceeds	0	31,842,306	0	0	0	115,542,081	0	0	9,097,802	0	156,482,188
Ending Balance	**1,933,465**	**10,218,674**	**8,038,836**	**10,755,589**	**20,662,705**	**109,462,646**	**61,103,319**	**6,249,151**	**8,538,458**	**8,149,630**	
Target Operating Reserve	1,400,238	1,084,114	1,071,159	1,096,278	1,122,373	1,149,467	1,177,911	1,207,159	1,237,547	1,269,126	
Variance from Target Operating Reserve	533,227	9,134,559	6,967,677	9,659,311	19,540,332	108,313,180	59,925,408	5,041,992	7,300,912	6,880,504	
Debt Service Reserve for Proposed Debt Issues											
Beginning Balance	0	0	2,632,694	2,632,694	2,632,694	2,632,694	12,185,613	12,185,613	12,185,613	12,937,812	
Additions to Reserve	0	2,632,694	0	0	0	9,552,919	0	0	752,198	0	
Ending Balance	0	2,632,694	2,632,694	2,632,694	2,632,694	12,185,613	12,185,613	12,185,613	12,937,812	12,937,812	
Interest											
Beginning Balance	$23,129,146	$1,933,465	$10,218,674	$8,038,836	$10,755,589	$20,662,705	$109,462,646	$61,103,319	$6,249,151	$8,538,458	
Add: Total Revenues	20,978,061	21,707,261	28,585,805	29,184,300	35,038,823	35,731,996	39,499,688	40,257,197	42,083,300	42,950,731	
Add: Bond Proceeds	0	31,842,306	0	0	0	115,542,081	0	0	9,097,802	0	
Less: Total Expenses	42,298,432	45,324,816	30,856,476	26,561,051	25,288,017	63,121,525	88,707,602	95,446,452	48,965,364	43,422,584	
Ending Balance	1,808,775	10,158,215	7,948,002	10,662,084	20,506,395	108,815,256	60,254,732	5,914,064	8,464,888	8,066,605	
Average Balance	12,468,961	6,045,840	9,083,338	9,350,460	15,630,992	64,738,980	84,858,689	33,508,691	7,357,019	8,302,531	
Interest Income	$124,690	$60,458	$90,833	$93,505	$156,310	$647,390	$848,587	$335,087	$73,570	$83,025	
Beginning Reserves											
Operating Fund	$23,129,146	$1,400,238	$1,084,114	$1,071,159	$1,096,278	$1,122,373	$1,149,467	$1,177,911	$1,207,159	$1,237,547	
Growth CIP Sub-Fund	0	227,421	577,874	1,583,636	3,311,555	6,904,384	23,999,198	15,705,309	1,246,332	2,914,685	
Non-Growth CIP Sub-Fund	0	305,806	8,556,685	5,384,041	6,347,756	12,635,948	84,313,981	44,220,099	3,795,660	4,386,227	
Total	$23,129,146	$1,933,465	$10,218,674	$8,038,836	$10,755,589	$20,662,705	$109,462,646	$61,103,319	$6,249,151	$8,538,458	
Operating Fund	100.0%	72.4%	10.6%	13.3%	10.2%	5.4%	1.1%	1.9%	19.3%	14.5%	
Growth CIP Sub-Fund	0.0%	11.8%	5.7%	19.7%	30.8%	33.4%	21.9%	25.7%	19.9%	34.1%	
Non-Growth CIP Sub-Fund	0.0%	15.8%	83.7%	67.0%	59.0%	61.2%	77.0%	72.4%	60.7%	51.4%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Apportioned Interest											
Operating Fund	$124,690	$43,785	$9,637	$12,459	$15,932	$35,165	$8,911	$6,460	$14,212	$12,034	
Growth CIP Sub-Fund	0	7,111	5,137	18,420	48,126	216,323	186,049	86,127	14,673	28,341	
Non-Growth CIP Sub-Fund	0	9,562	76,060	62,625	92,251	395,901	653,627	242,500	44,686	42,650	
Total	$124,690	$60,458	$90,833	$93,505	$156,310	$647,390	$848,587	$335,087	$73,570	$83,025	

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Consolidated (RFC Layout)

Table: A-5
Schedule: Water Consolidated
Date: 4/22/2016
Range: W_Cons

Consolidated Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Check on Beginning Cash											
Operating Fund	$23,129,146	$1,400,238	$1,084,114	$1,071,159	$1,096,278	$1,122,373	$1,149,467	$1,177,911	$1,207,159	$1,237,547	
Growth Fund	0	227,421	577,874	1,583,636	3,311,555	6,904,384	23,999,198	15,705,309	1,246,332	2,914,685	
Non-Growth Fund	0	305,806	8,556,685	5,384,041	6,347,756	12,635,948	84,313,981	44,220,099	3,795,660	4,386,227	
Total	23,129,146	1,933,465	10,218,674	8,038,836	10,755,589	20,662,705	109,462,646	61,103,319	6,249,151	8,538,458	
Consolidated	23,129,146	1,933,465	10,218,674	8,038,836	10,755,589	20,662,705	109,462,646	61,103,319	6,249,151	8,538,458	
Difference	0	0	0	0	0	0	0	0	(0)	(0)	
Check on Ending Cash											
Operating Fund	1,400,238	1,084,114	1,071,159	1,096,278	1,122,373	1,149,467	1,177,911	1,207,159	1,237,547	1,269,126	
Growth Fund	227,421	577,874	1,583,636	3,311,555	6,904,384	23,999,198	15,705,309	1,246,332	2,914,685	1,768,507	
Non-Growth Fund	305,806	8,556,685	5,384,041	6,347,756	12,635,948	84,313,981	44,220,099	3,795,660	4,386,227	5,111,997	
Total	1,933,465	10,218,674	8,038,836	10,755,589	20,662,705	109,462,646	61,103,319	6,249,151	8,538,458	8,149,630	
Consolidated	1,933,465	10,218,674	8,038,836	10,755,589	20,662,705	109,462,646	61,103,319	6,249,151	8,538,458	8,149,630	
Difference	0	0	0	0	0	0	0	(0)	(0)	(0)	

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Norman Layout

Table: A-6
Schedule: Water Norman
Date: 4/22/2016
Range: W_Norm

Line		FYE 16 Projected	FYE 17 Projected	FYE 18 Projected	FYE 19 Projected	FYE 20 Projected	FYE 21 Projected	FYE 22 Projected	FYE 23 Projected	FYE 24 Projected	FYE 25 Projected
1	**Beginning Water Fund Balance**	$23,129,146	$1,933,465	$12,851,368	$10,671,530	$13,388,283	$23,295,399	$121,648,259	$73,288,932	$18,434,764	$21,476,270
	Operating Revenues										
2	Enterprise Fund Fees/Chgs	18,500,000	18,793,755	19,093,062	19,397,921	19,707,323	20,022,276	20,342,782	20,668,335	20,999,441	21,336,603
3	Additional Revenue from Rate Increases	0	0	4,200,474	4,267,543	9,625,056	9,778,880	12,963,235	13,170,690	14,413,117	14,644,531
4	Connection Fee Revenue	400,671	815,342	3,173,124	3,378,499	3,544,703	3,739,309	3,971,885	4,165,700	4,387,120	4,654,323
5	Capital Improvement Charge	1,313,000	1,326,130	1,339,391	1,352,785	1,366,313	1,388,149	1,410,370	1,432,940	1,455,896	1,479,271
6	Cost Allocation	764,390	772,034	779,754	787,552	795,428	803,382	811,416	819,530	827,726	836,003
7	**Total Operating Revenues**	**20,978,061**	**21,707,261**	**28,585,805**	**29,184,300**	**35,038,823**	**35,731,996**	**39,499,688**	**40,257,197**	**42,083,300**	**42,950,731**
	Operating Expenditures										
8	Salaries and Benefits	3,896,750	4,048,616	4,119,069	4,325,023	4,541,274	4,768,337	5,006,754	5,257,091	5,519,945	5,795,943
9	Supplies and Materials	2,776,961	2,456,023	2,480,583	2,505,389	2,530,443	2,555,747	2,581,305	2,607,118	2,633,189	2,659,521
10	Services and Maintenance	3,431,821	3,085,700	3,116,557	3,147,723	3,179,200	3,210,992	3,243,102	3,275,533	3,308,288	3,341,370
11	Internal Services	289,708	204,272	208,357	212,525	216,775	221,111	225,533	230,044	234,645	239,338
12	Cost Allocations	1,792,321	1,856,055	1,874,616	1,893,362	1,912,295	1,931,418	1,950,732	1,970,239	1,989,942	2,009,841
13	Employee Turnover Savings	(58,451)	(60,729)	(61,786)	(64,875)	(68,119)	(71,525)	(75,101)	(78,856)	(82,799)	(86,939)
14	**Total Operating Expenditures**	**12,129,110**	**11,589,937**	**11,737,396**	**12,019,147**	**12,311,868**	**12,616,080**	**12,932,324**	**13,261,169**	**13,603,210**	**13,959,074**
15	**Net Operating Revenue**	**8,848,951**	**10,117,324**	**16,848,409**	**17,165,153**	**22,726,955**	**23,115,916**	**26,567,364**	**26,996,028**	**28,480,090**	**28,991,657**
	Other Revenues										
16	Interest Income	124,690	60,458	90,833	93,505	156,310	647,390	848,587	335,087	73,570	83,025
17	Other Misc. Revenue	0	0	0	0	0	0	0	0	0	0
18	I/F Transfer - General Fund	0	0	0	0	0	0	0	0	0	0
19	I/F Transfer - Insurance Fund	0	0	0	0	0	0	0	0	0	0
20	Revenue Bond Proceeds	0	35,000,000	0	0	0	127,000,000	0	0	10,000,000	0
21	Bond/Lease Proceeds	0	0	0	0	0	0	0	0	0	0
22	Grant Revenue	0	0	0	0	0	0	0	0	0	0
23	**Total Other Revenues**	**124,690**	**35,060,458**	**90,833**	**93,505**	**156,310**	**127,647,390**	**848,587**	**335,087**	**10,073,570**	**83,025**
	Other Expenditures										
24	Audit Accruals/Adj/Encumbrances	0	0	0	0	0	0	0	0	0	0
25	Master Conservancy Debt	268,126	266,669	72,811	72,174	71,829	71,523	75,000	75,000	75,000	75,000
26	Debt Service - 06 Issue	0	0	0	0	0	0	0	0	0	0
27	Debt Service - 10 Issue	804,396	806,896	806,896	806,896	806,896	806,896	806,896	806,896	806,896	806,896
28	Debt Service - 15 Issue	1,473,749	1,496,169	1,480,449	1,479,410	1,477,891	1,470,840	1,470,840	1,470,840	1,470,840	1,470,840
29	Debt Service - Proposed Issues	0	2,632,694	2,632,694	2,632,694	2,632,694	12,185,613	12,185,613	12,185,613	12,937,812	12,937,812
30	Capital Projects	22,984,062	27,199,000	12,904,000	8,304,000	6,715,000	34,673,000	59,913,000	66,296,000	18,693,000	12,766,000
31	Capital Projects - 06 Issue	0	0	0	0	0	0	0	0	0	0
32	Capital Projects - 10 Issue	0	0	0	0	0	0	0	0	0	0
33	Capital Projects - 15 Issue	3,088,939	0	0	0	0	0	0	0	0	0
34	Bond Issue Cost	0	525,000	0	0	0	1,905,000	0	0	150,000	0
35	Capital Equipment	605,050	365,126	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000
36	I/F Transfer - Hallpark Fund	0	0	0	0	0	0	0	0	0	0
37	I/F Transfer - General Fund	945,000	968,325	992,230	1,016,730	1,041,839	1,067,573	1,093,928	1,120,934	1,148,607	1,176,963
38	I/F Transfer - Capital Fund	0	0	0	0	0	0	0	0	0	0
39	**Total Other Expenditures**	**30,169,322**	**34,259,879**	**19,119,080**	**14,541,904**	**12,976,149**	**52,410,445**	**75,775,278**	**82,185,283**	**35,512,154**	**29,463,510**
40	**Net Revenues (Expenditures)**	**(21,195,681)**	**10,917,903**	**(2,179,838)**	**2,716,753**	**9,907,116**	**98,352,861**	**(48,359,327)**	**(54,854,169)**	**3,041,506**	**(388,828)**
41	**Ending Water Fund Balance**	**$1,933,465**	**$12,851,368**	**$10,671,530**	**$13,388,283**	**$23,295,399**	**$121,648,259**	**$73,288,932**	**$18,434,764**	**$21,476,270**	**$21,087,442**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Norman Layout

Table: A-6
Schedule: Water Norman
Date: 4/22/2016
Range: W_Norm

Line		FYE 16 Projected	FYE 17 Projected	FYE 18 Projected	FYE 19 Projected	FYE 20 Projected	FYE 21 Projected	FYE 22 Projected	FYE 23 Projected	FYE 24 Projected	FYE 25 Projected
42	**Target Reserves**										
43	Reserve for Operations	$1,400,238	$1,084,114	$1,071,159	$1,096,278	$1,122,373	$1,149,467	$1,177,911	$1,207,159	$1,237,547	$1,269,126
44	Reserve for Encumbrances	0	0	0	0	0	0	0	0	0	0
45	Reserve for Bond Projects - 06 Issue	0	0	0	0	0	0	0	0	0	0
46	Reserve for Bond Projects - 10 Issue	0	0	0	0	0	0	0	0	0	0
47	Reserve for Bond Projects - Proposed Issues	0	2,632,694	2,632,694	2,632,694	2,632,694	12,185,613	12,185,613	12,185,613	12,937,812	12,937,812
48	Reserve for Capital	15,305,442	17,959,000	24,501,800	35,180,200	37,258,000	38,468,200	39,417,000	32,585,000	15,729,500	12,766,000
49	Reserve (Deficit) Surplus										
50	**Total Target Reserves**	**$16,705,679**	**$21,675,808**	**$28,205,653**	**$38,909,172**	**$41,013,067**	**$51,803,280**	**$52,780,524**	**$45,977,772**	**$29,904,858**	**$26,972,938**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Connection Charge Calculation

Table:	A-7
Schedule:	Water Connection
Date:	4/22/2016
Range:	W_Conn

Calculated Connection Charge Based on 5/8" and 3/4" Meters		
Description	**Capacity Additions**	**Calculation**
Uninflated Growth-Related CIP FY 2016 - FY 2025		$49,219,050
Plus: NPV of Borrowing Cost - Future Debt		10,922,957
Total Cost for Connection Fee Calculation		$60,142,007
Incremental Peak Day Water System Capacity (MGD)	7.0	
Estimated 5/8" & 3/4" Meter Average Day Water Use (gpd)	201	
Estimated Max Day Peaking Factor (1)	1.9	
Estimated 5/8" & 3/4" Meter Peak Day Water Use (gpd)	381	
Incremental Capacity (7.0 MGD Peak Day Capacity/381 gpd)	18,366	
Connection Fee		**$3,275**
(1) From 'Strategic Water Supply Plan'		

Connection Fee Assessment Schedule Based on AWWA Flow Equivalencies					
Meter Size	**AWWA Flow Equivalency**	**Existing Connection Charges (Effective 8/1/16)**	**Calculated Based on AWWA Flow Equivalency**	**$ Difference**	**% Difference**
3/4"	1.00	$1,000	$3,275	$2,275	328%
1"	2.67	1,667	8,744	7,077	525%
1.5"	3.33	3,333	10,906	7,573	327%
2"	10.67	6,667	34,944	28,277	524%
3"	21.33	14,667	69,856	55,189	476%
4"	33.33	28,000	109,156	81,156	390%
6"	66.67	57,667	218,344	160,677	379%

5/8" & 3/4" Max Day Consumption		
Annual Consumption per Account	80,243	gal
GPD	219.84	gpd
Day Demand	1.34	
Equivalent Max Day GPD	294.4	gpd
Current Treatment Plant Capacity		
Current Avg Day Capacity (1)	14.7	MGD
Current Max Capacity (1)	26.1	MGD
Current Avg Day 5/8" & 3/4" Equivalent Capacity	66,866	SFR
Current Max 5/8" & 3/4" Equivalent Capacity	88,657	SFR
Incremental Treatment Plant Capacity		
Future Avg Day Capacity (1)	19.4	MGD
Future Max Capacity (1)	33.1	MGD
Future Avg Day 5/8" & 3/4" Equivalent Capacity	88,245	SFR
Future Max 5/8" & 3/4" Equivalent Capacity	112,435	SFR
Incremental Capacity Additions		
Incremental Avg Day Capacity Addition	4.7	MGD
Incremental Max Capacity Addition	7.0	MGD
Incremental Avg Day Capacity Added	21,379	SFR
Incremental Max Day Capacity Added	23,778	SFR

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Connection Charge Revenue Forecast

Table: A-8
Schedule: Water Connection Forecast
Date: 4/22/2016
Range: W_Conn_For

Step #1: Calculate Historical Growth in Water Meters									
Water Meters In Service (as of 5/15)					Historical # of Water Meters Added				
Meter Size	2015 Actual Meters	2015 % of Total	AWWA Flow Equivalencies	# 5/8" Equiv. Meters	FY 2012	FY 2013	FY 2014	3-Yr. Avg.	% Avg Inc.
5/8" & 3/4"	34,319	94.32%	1.00	34,319	305	834	411	517	1.51%
1"	942	2.59%	2.67	2,512	20	9	21	17	1.77%
1.5"	479	1.32%	3.33	1,597	3	13	34	17	3.48%
2"	542	1.49%	10.67	5,782	11	36	26	24	4.49%
3"	60	0.16%	21.33	1,280	0	1	1	1	1.11%
4"	22	0.06%	33.33	734	0	1	0	0	1.52%
6"	10	0.03%	66.67	667	0	0	0	0	0.00%
8"	11	0.03%	106.67	1,174	0	0	0	0	0.00%
Total	**36,385**	**100%**		**48,065**	**339**	**894**	**493**	**575**	

Step #2: Forecast In-Service Meters										
Meter Size	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
5/8" & 3/4"	34,557	35,078	35,607	36,144	36,689	37,242	37,803	38,373	38,951	39,538
1"	950	967	985	1,003	1,021	1,040	1,059	1,078	1,098	1,118
1.5"	487	504	522	541	560	580	601	622	644	667
2"	554	579	605	633	662	692	724	757	791	827
3"	61	62	63	64	65	66	67	68	69	70
4"	23	24	25	26	27	28	29	30	31	32
6"	10	10	10	10	10	10	10	10	10	10
8"	11	11	11	11	11	11	11	11	11	11
Total	**36,653**	**37,235**	**37,828**	**38,432**	**39,045**	**39,669**	**40,304**	**40,949**	**41,605**	**42,273**
Incremental Growth		582	593	604	613	624	635	645	656	668
% Growth		1.59%	1.59%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.61%

Step #3: Forecast Incremental New Connections										
Meter Size	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
5/8" & 3/4"	238	521	529	537	545	553	561	570	578	587
1"	8	17	18	18	18	19	19	19	20	20
1.5"	8	17	18	19	19	20	21	21	22	23
2"	12	25	26	28	29	30	32	33	34	36
3"	1	1	1	1	1	1	1	1	1	1
4"	1	1	1	1	1	1	1	1	1	1
6"	0	0	0	0	0	0	0	0	0	0
8"	0	0	0	0	0	0	0	0	0	0
Total	**268**	**582**	**593**	**604**	**613**	**624**	**635**	**645**	**656**	**668**
Cumulative	268	850	1,443	2,047	2,660	3,284	3,919	4,564	5,220	5,888

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Connection Charge Revenue Forecast

Table: A-8
Schedule: Water Connection Forecast
Date: 4/22/2016
Range: W_Conn_For

Step #4: Forecast of Connection Charge Revenue Based on Existing Fees (Effective on August 1, 2016)											
Meter Size	**Existing**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
5/8" & 3/4"	$1,000	$238,000	$521,000								
1"	1,667	13,336	28,339								
1.5"	3,333	26,664	56,661								
2"	6,667	80,004	166,675								
3"	14,667	14,667	14,667								
4"	28,000	28,000	28,000								
6"	57,667	0	0								
8"	0	0	0								
Total		**$400,671**	**$815,342**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Step #6: Forecast of Connection Charge Revenue (Calculated Charges Based on AWWA Flow Rate Equivalencies)											
Meter Size	**Calculated**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**
5/8" & 3/4"	$3,275			$1,732,475	$1,811,435	$1,893,574	$1,979,011	$2,067,869	$2,164,075	$2,260,281	$2,364,340
1"	8,744			157,397	162,118	166,982	181,546	186,993	192,603	208,822	215,086
1.5"	10,906			196,304	213,426	219,828	238,340	257,765	265,498	286,485	308,492
2"	34,944			908,551	1,007,792	1,075,098	1,145,536	1,258,562	1,336,829	1,418,659	1,547,173
3"	69,856			69,856	71,951	74,110	76,333	78,623	80,982	83,411	85,914
4"	109,156			109,156	112,430	115,803	119,277	122,856	126,541	130,338	134,248
6"	218,344			0	0	0	0	0	0	0	0
8"	0			0	0	0	0	0	0	0	0
Total		**$0**	**$0**	**$3,173,737**	**$3,379,153**	**$3,545,396**	**$3,740,044**	**$3,972,668**	**$4,166,528**	**$4,387,996**	**$4,655,253**

Annual Inflation	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**
Cumulative Inflation	**3.0%**	**6.1%**	**9.3%**	**12.6%**	**15.9%**	**19.4%**	**23.0%**		

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Debt Service Coverage

Table: A-9
Schedule: Water DSCR
Date: 4/22/2016
Range: W_Debt

Debt Service Coverage Calculation	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
DSCR without Connection Charges											
Add: Operating Fund Revenue	$19,389,080	$19,609,574	$24,082,926	$24,465,475	$30,143,739	$30,639,704	$34,126,344	$34,665,016	$36,254,496	$36,829,170	$290,205,524
Add: Capital Improvement Charge Receipts	1,313,000	1,326,130	1,339,391	1,352,785	1,366,313	1,388,149	1,410,370	1,432,940	1,455,896	1,479,271	13,864,245
Less: Operating Expenses	12,129,110	11,589,937	11,737,396	12,019,147	12,311,868	12,616,080	12,932,324	13,261,169	13,603,210	13,959,074	126,159,315
Less: Other Expenditures	4,907,115	1,600,120	1,295,041	1,318,904	1,343,668	1,369,096	1,398,928	1,425,934	1,453,607	1,481,963	17,594,376
Net Revenues Available for Debt Service	**$3,665,855**	**$7,745,647**	**$12,389,880**	**$12,480,209**	**$17,854,516**	**$18,042,677**	**$21,205,461**	**$21,410,853**	**$22,653,575**	**$22,867,405**	**$160,316,077**
Existing Debt Service	$2,278,145	$2,303,065	$2,287,345	$2,286,306	$2,284,787	$2,277,736	$2,277,736	$2,277,736	$2,277,736	$2,277,736	$22,828,328
Proposed Growth Debt Service	0	0	0	0	0	2,783,134	2,783,134	2,783,134	3,535,332	3,535,332	15,420,066
Proposed Non-Growth Debt Service	0	2,632,694	2,632,694	2,632,694	2,632,694	9,402,479	9,402,479	9,402,479	9,402,479	9,402,479	57,543,174
Total Debt Service	**$2,278,145**	**$4,935,759**	**$4,920,039**	**$4,919,000**	**$4,917,481**	**$14,463,349**	**$14,463,349**	**$14,463,349**	**$15,215,548**	**$15,215,548**	**$95,791,568**
Calculated DSCR without Connection Charges	**1.61**	**1.57**	**2.52**	**2.54**	**3.63**	**1.25**	**1.47**	**1.48**	**1.49**	**1.50**	
DSCR with Connection Charges											
Add: Operating Fund Revenue	$19,389,080	$19,609,574	$24,082,926	$24,465,475	$30,143,739	$30,639,704	$34,126,344	$34,665,016	$36,254,496	$36,829,170	$290,205,524
Add: Connection Charge Receipts	400,671	815,342	3,173,124	3,378,499	3,544,703	3,739,309	3,971,885	4,165,700	4,387,120	4,654,323	32,230,676
Add: Capital Improvement Charge Receipts	1,313,000	1,326,130	1,339,391	1,352,785	1,366,313	1,388,149	1,410,370	1,432,940	1,455,896	1,479,271	13,864,245
Less: Operating Expenses	12,129,110	11,589,937	11,737,396	12,019,147	12,311,868	12,616,080	12,932,324	13,261,169	13,603,210	13,959,074	126,159,315
Less: Other Expenditures	4,907,115	1,600,120	1,295,041	1,318,904	1,343,668	1,369,096	1,398,928	1,425,934	1,453,607	1,481,963	17,594,376
Net Revenues Available for Debt Service	**$4,066,526**	**$8,560,989**	**$15,563,005**	**$15,858,708**	**$21,399,219**	**$21,781,985**	**$25,177,346**	**$25,576,553**	**$27,040,695**	**$27,521,728**	**$146,451,833**
Existing Debt Service	$2,278,145	$2,303,065	$2,287,345	$2,286,306	$2,284,787	$2,277,736	$2,277,736	$2,277,736	$2,277,736	$2,277,736	$22,828,328
Proposed Growth Debt Service	0	0	0	0	0	2,783,134	2,783,134	2,783,134	3,535,332	3,535,332	15,420,066
Proposed Non-Growth Debt Service	0	2,632,694	2,632,694	2,632,694	2,632,694	9,402,479	9,402,479	9,402,479	9,402,479	9,402,479	57,543,174
Total Debt Service	**$2,278,145**	**$4,935,759**	**$4,920,039**	**$4,919,000**	**$4,917,481**	**$14,463,349**	**$14,463,349**	**$14,463,349**	**$15,215,548**	**$15,215,548**	**$95,791,568**
Calculated DSCR with Connection Charges	**1.79**	**1.73**	**3.16**	**3.22**	**4.35**	**1.51**	**1.74**	**1.77**	**1.78**	**1.81**	

City of Norman, Oklahoma
2015 Water Connection Charge Study
Water Capital Financing Plan - Uninflated CIP (2015 Dollars)

Table: A-10
Schedule: Water CIP
Date: 4/22/2016
Range: W_CIP

Project Name	FY 2016 PROJECTED	FY 2017 PROJECTED	FY 2018 PROJECTED	FY 2019 PROJECTED	FY 2020 PROJECTED	FY 2021 PROJECTED	FY 2022 PROJECTED	FY 2023 PROJECTED	FY 2024 PROJECTED	FY 2025 PROJECTED	% Growth	$ to PIF Growth
WATER DISTRIBUTION SYSTEM												
Water Line Improvements: High Pressure Plane (closed)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%	$0
Water Line Improvements-Segment A	0	0	0	0	0	0	0	0	0	0	0%	0
WTP Raw Waterline (Phase I) (1)	400,000	0	0	0	0	0	0	0	0	0	0%	0
FYE 08 12" Water Line (1)	100,000	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Hall Park	0	0	0	0	0	0	0	0	0	0	0%	0
Water Line Relocation: Robinson/12th NE Waterline	0	0	0	0	0	0	0	0	0	0	0%	0
Master Meters Installation	261,589	0	0	0	0	0	0	0	0	0	0%	0
Water Line Improvements: Segment D	6,036,991	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Pendleton Drive Area	0	0	0	0	0	0	0	0	0	0	0%	0
Bulk Water Dispensing Services	0	0	0	0	0	0	0	0	0	0	0%	0
I-35 Water Line Relocations	48,337	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Robinson Under I-35	4,938,041	0	0	0	0	0	0	0	0	0	0%	0
Water Line Relocation: Franklin Road	0	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Cedar Lane at Bishop Creek	225,729	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Berry Road	3,428,416	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Flood Avenue	0	0	318,000	1,283,000	0	0	0	0	0	0	0%	0
Water Line Improvements- Interstate Drive (TIF Payback)	175,055	0	0	0	0	0	0	0	0	0	0%	0
Backflow Prevention Program	33,300	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Gray Street	762,676	53,000	0	0	0	0	0	0	0	0	0%	0
Water Line Improvements: Segment G	0	0	578,000	0	0	0	0	0	0	0	0%	0
Water Line Improvements: Segment B	0	0	0	527,000	2,789,000	0	0	0	0	0	0%	0
Water Line Improvements: Segment H	0	0	0	0	0	312,000	0	0	0	0	0%	0
Water Line Replacement: West of Campus	0	0	710,000	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Flood, Rock Creek to Venture	0	0	0	420,000	1,960,000	0	0	0	0	0	0%	0
Water Line Replacement: Hall Park Phase 2	0	0	0	0	375,000	0	0	0	0	0	0%	0
Water Line Replacement: Gray and Tonhawa	0	474,000	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Main Library	0	497,000	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Crossroads Area	149,000	1,201,000	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Interstate Drive	0	0	98,000	655,000	0	0	0	0	0	0	0%	0
Water Line Replacement: Robinson, WTP to 24th NW	0	0	0	0	0	2,340,000	3,310,000	3,310,000	0	0	45%	4,032,000
Water Line Replacement: 24th NE, Robinson to Alameda to Carter	0	0	0	0	0	1,520,000	2,540,000	2,540,000	0	0	35%	2,310,000
Water Line Replacement: Classen/RR/Flood, Highway 9 to Well #20	0	0	0	0	0	0	3,730,000	2,823,000	2,823,000	2,824,000	31%	3,782,000
Water Line Replacement: Main Street, Flood to Interstate Drive	0	0	0	0	0	0	0	0	1,090,000	1,890,000	28%	834,400
Water Line Replacement: Franklin Road, RR to 24th NW to Indian Hills	0	0	0	0	0	0	0	0	710,000	1,070,000	33%	587,400
Water Line Maintenance Plan: 40-Year Duration	0	0	0	0	0	2,915,000	3,700,000	3,700,000	3,700,000	3,700,000	0%	0
Subtotal Water Distribution System Projects	**$16,559,134**	**$2,225,000**	**$1,704,000**	**$2,885,000**	**$5,124,000**	**$7,087,000**	**$13,280,000**	**$12,373,000**	**$8,323,000**	**$9,484,000**		**$11,545,800**
Subtotal Growth	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,585,000**	**$3,534,800**	**$3,253,630**	**$1,414,630**	**$1,757,740**		**$11,545,800**
Subtotal Non-Growth	**$16,559,134**	**$2,225,000**	**$1,704,000**	**$2,885,000**	**$5,124,000**	**$5,502,000**	**$9,745,200**	**$9,119,370**	**$6,908,370**	**$7,726,260**		**$67,498,334**

City of Norman, Oklahoma
2015 Water Connection Charge Study
Water Capital Financing Plan - Uninflated CIP (2015 Dollars)

Table: A-10
Schedule: Water CIP
Date: 4/22/2016
Range: W_CIP

Project Name	FY 2016 PROJECTED	FY 2017 PROJECTED	FY 2018 PROJECTED	FY 2019 PROJECTED	FY 2020 PROJECTED	FY 2021 PROJECTED	FY 2022 PROJECTED	FY 2023 PROJECTED	FY 2024 PROJECTED	FY 2025 PROJECTED	% Growth	$ to PIF Growth
WATER TOWERS												
Water Tower Maint - Boyd Tower	$0	$0	$0	$0	$0	$0	$500,000	$0	$0	$0	0%	$0
Water Tower Maint - Robinson Tower	0	0	0	0	0	0	0	0	500,000	0	0%	0
Water Tower Maint - Cascade Tower	0	0	0	0	500,000	0	0	0	0	0	0%	0
Water Tower - High Pressure Plane	2,988,427	0	0	0	0	0	0	0	0	0	0%	0
Andrews Park Clearwell Rehab	0	0	200,000	0	0	0	0	0	0	0	0%	0
WTP Backwash Tower	0	60,000	180,000	0	0	0	0	0	0	0	0%	0
Water Tower Maint - Hall Park	0	0	0	100,000	0	0	0	0	0	0	0%	0
Water Tower Maint - Lindsey Tower	0	0	0	200,000	0	0	0	0	0	0	0%	0
Subtotal Water Tower Projects	**$2,988,427**	**$60,000**	**$380,000**	**$300,000**	**$500,000**	**$0**	**$500,000**	**$0**	**$500,000**	**$0**		**$0**
Subtotal Growth	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$0**
Subtotal Non-Growth	**$2,988,427**	**$60,000**	**$380,000**	**$300,000**	**$500,000**	**$0**	**$500,000**	**$0**	**$500,000**	**$0**		**$5,228,427**
WATER WELL IMPROVEMENTS												
Well Modifications: Arsenic Treatment	$0	$0	$0	$1,562,000	$0	$0	$0	$0	$0	$0	100%	$1,562,000
Well Arc Flash Safety	140,000	0	0	0	0	0	0	0	0	0	0%	0
Water Well 20 House Replacement	25,991	0	0	0	0	0	0	0	0	0	0%	0
Arsenic Treatment - Well 31	0	0	0	0	0	0	0	0	0	0	0%	0
Water Well Telemetry	24,375	0	0	0	0	0	0	0	0	0	0%	0
Subtotal Water Well Projects	**$190,366**	**$0**	**$0**	**$1,562,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$1,562,000**
Subtotal Growth	**$0**	**$0**	**$0**	**$1,562,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$1,562,000**
Subtotal Non-Growth	**$190,366**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$190,366**
WATER TREATMENT PLANT												
Upgrade SCADA System	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%	$0
High Service Line Repair(PayGo)	0	0	0	0	0	0	0	0	0	0	0%	0
2060 Strategic Water Supply Plan	0	0	0	0	0	0	0	0	500,000	0	0%	0
Pilot Study for WTP Land Purchase	0	150,000	0	0	0	0	0	0	0	0	0%	0
WTP Improvements Phase II	4,738,442	21,418,558	0	0	0	0	0	0	0	0	0%	0
Well Field Blending at WTP	482,000	482,000	1,526,000	0	0	0	0	0	0	0	0%	0
FYE16 Water Wells and Supply Lines (10 wells)	693,000	1,833,000	8,191,000	0	0	0	0	0	0	0	25%	2,679,250
WTP Software Upgrade	0	0	0	0	0	0	0	0	0	0	0%	0
WTP Land Purchase	0	0	0	1,600,000	0	0	0	0	0	0	0%	0
New Building for Line Maintenance	0	0	102,500	1,025,000	0	0	0	0	0	0	0%	0
12 MGD Groundwater Treatment Plant	0	0	0	0	0	8,702,000	31,534,000	31,534,000	0	0	0%	0
Re-Activate Arsenic Wells and 3 MGD GWTP	0	0	0	0	0	13,717,000	2,646,500	2,646,500	0	0	100%	19,010,000
2nd Connection to OKC	0	0	0	0	0	0	1,960,000	7,211,000	5,251,000	0	100%	14,422,000
Lake Thunderbird Augmentation (Design, ROW, and 1/3 Construction)	0	0	0	0	0	0	0	0	0	0	100%	0
Subtotal Water Treatment Plant Projects	**$5,913,442**	**$23,883,558**	**$9,819,500**	**$2,625,000**	**$0**	**$22,419,000**	**$36,140,500**	**$41,391,500**	**$5,751,000**	**$0**		**$36,111,250**
Subtotal Growth	**$173,250**	**$458,250**	**$2,047,750**	**$0**	**$0**	**$13,717,000**	**$4,606,500**	**$9,857,500**	**$5,251,000**	**$0**		**$36,111,250**
Subtotal Non-Growth	**$5,740,192**	**$23,425,308**	**$7,771,750**	**$2,625,000**	**$0**	**$8,702,000**	**$31,534,000**	**$31,534,000**	**$500,000**	**$0**		**$111,832,250**
URBAN SERVICE AREA WATER LINES	$306,605	$138,000	$160,000	$162,000	$242,000	$303,000	$200,000	$200,000	$200,000	$200,000	0%	**$0**
HOT SOILS WATER LINE REPAIR PROGRAM	$101,728	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	0%	**$0**
Total Growth CIP	**$173,250**	**$458,250**	**$2,047,750**	**$1,562,000**	**$0**	**$15,302,000**	**$8,141,300**	**$13,111,130**	**$6,665,630**	**$1,757,740**		**$49,219,050**
Total Non Growth CIP	**$21,232,660**	**$25,948,308**	**$10,115,750**	**$6,072,000**	**$5,966,000**	**$14,607,000**	**$42,079,200**	**$40,953,370**	**$8,208,370**	**$8,026,260**		**$183,208,918**
TOTAL CIP WATER PROJECTS	**$21,405,910**	**$26,406,558**	**$12,163,500**	**$7,634,000**	**$5,966,000**	**$29,909,000**	**$50,220,500**	**$54,064,500**	**$14,874,000**	**$9,784,000**		**$232,427,968**

City of Norman, Oklahoma
2015 Water Connection Charge Study
Water Capital Financing Plan - Uninflated CIP (2015 Dollars)

Table: A-10
Schedule: Water CIP
Date: 4/22/2016
Range: W_CIP

Project Name	FY 2016 PROJECTED	FY 2017 PROJECTED	FY 2018 PROJECTED	FY 2019 PROJECTED	FY 2020 PROJECTED	FY 2021 PROJECTED	FY 2022 PROJECTED	FY 2023 PROJECTED	FY 2024 PROJECTED	FY 2025 PROJECTED	% Growth	$ to PIF Growth
WATER BOND PROJECTS Series 2006												
WTP Raw Waterline (Phase I)	0	0	0	0	0	0	0	0	0	0	0%	0
Water Line Improvements: High Pressure Plane	0	0	0	0	0	0	0	0	0	0	0%	0
Replace Control System	13,200	0	0	0	0	0	0	0	0	0	0%	0
Water Line Improvements-Segment A	0	0	0	0	0	0	0	0	0	0	0%	0
FYE 08 12" Water Line	0	0	0	0	0	0	0	0	0	0	0%	0
FYE 08 16" Water Line	0	0	0	0	0	0	0	0	0	0	0%	0
24" Waterline (Seg D,SH 9:24th SW to Jenkins)	1,254,530	0	0	0	0	0	0	0	0	0	0%	0
Water Well Telemetry	99	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Berry Road	$3,385,963	0	0	0	0	0	0	0	0	0	0%	0
TOTAL ALL WATER FUND 31 PROJECTS	**$4,653,792**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Inflated CIP

Table: A-11
Schedule: Water CIP Inflated
Date: 4/22/2016
Range: W_CIP_Inf

Annual Inflation		**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**		
Cumulative Inflation		**3.0%**	**6.1%**	**9.3%**	**12.6%**	**15.9%**	**19.4%**	**23.0%**	**26.7%**	**30.5%**		
	FY 2016	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**% Growth**	**$ Growth**
Project Name	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**		
WATER DISTRIBUTION SYSTEM												
Water Line Improvements: High Pressure Plane (closed)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%	$0
Water Line Improvements-Segment A	0	0	0	0	0	0	0	0	0	0	0%	0
WTP Raw Waterline (Phase I) (1)	400,000	0	0	0	0	0	0	0	0	0	0%	0
FYE 08 12" Water Line (1)	100,000	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Hall Park	0	0	0	0	0	0	0	0	0	0	0%	0
Water Line Relocation: Robinson/12thNE Waterline	0	0	0	0	0	0	0	0	0	0	0%	0
Master Meters Installation	262,000	0	0	0	0	0	0	0	0	0	0%	0
Water Line Improvements: Segment D	6,037,000	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Pendleton Drive Area	0	0	0	0	0	0	0	0	0	0	0%	0
Bulk Water Dispensing Services	0	0	0	0	0	0	0	0	0	0	0%	0
I-35 Water Line Relocations	48,000	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Robinson Under I-35	4,938,000	0	0	0	0	0	0	0	0	0	0%	0
Water Line Relocation: Franklin Road	0	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Cedar Lane at Bishop Creek	226,000	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Berry Road	3,428,000	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Flood Avenue	0	0	337,000	1,402,000	0	0	0	0	0	0	0%	0
Water Line Improvements- Interstate Drive (TIF Payback)	175,000	0	0	0	0	0	0	0	0	0	0%	0
Backflow Prevention Program	33,000	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Gray Street	763,000	55,000	0	0	0	0	0	0	0	0	0%	0
Water Line Improvements: Segment G	0	0	613,000	0	0	0	0	0	0	0	0%	0
Water Line Improvements: Segment B	0	0	0	576,000	3,139,000	0	0	0	0	0	0%	0
Water Line Improvements: Segment H	0	0	0	0	0	362,000	0	0	0	0	0%	0
Water Line Replacement: West of Campus	0	0	753,000	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Flood, Rock Creek to Venture	0	0	0	459,000	2,206,000	0	0	0	0	0	0%	0
Water Line Replacement: Hall Park Phase 2	0	0	0	0	422,000	0	0	0	0	0	0%	0
Water Line Replacement: Gray and Tonhawa	0	488,000	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Main Library	0	512,000	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Crossroads Area	149,000	1,237,000	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Interstate Drive	0	0	104,000	716,000	0	0	0	0	0	0	0%	0
Water Line Replacement: Robinson, WTP to 24th NW	0	0	0	0	0	2,713,000	3,952,000	4,071,000	0	0	45%	4,831,200
Water Line Replacement: 24th NE, Robinson to Alameda to Carter	0	0	0	0	0	1,762,000	3,033,000	3,124,000	0	0	35%	2,771,650
Water Line Replacement: Classen/RR/Flood, Highway 9 to Well #20	0	0	0	0	0	0	4,454,000	3,472,000	3,576,000	3,685,000	31%	4,707,970
Water Line Replacement: Main Street, Flood to Interstate Drive	0	0	0	0	0	0	0	0	1,381,000	2,466,000	28%	1,077,160
Water Line Replacement: Franklin Road, RR to 24th NW to Indian Hills	0	0	0	0	0	0	0	0	899,000	1,396,000	33%	757,350
Water Line Maintenance Plan: 40-Year Duration	0	0	0	0	0	3,379,000	4,418,000	4,551,000	4,687,000	4,828,000	0%	0
Subtotal Water Distribution System Projects	**$16,559,000**	**$2,292,000**	**$1,807,000**	**$3,153,000**	**$5,767,000**	**$8,216,000**	**$15,857,000**	**$15,218,000**	**$10,543,000**	**$12,375,000**		**$14,145,330**
Subtotal Growth	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,837,550**	**$4,220,690**	**$4,001,670**	**$1,791,910**	**$2,293,510**		**$14,145,330**
Subtotal Non-Growth	**$16,559,000**	**$2,292,000**	**$1,807,000**	**$3,153,000**	**$5,767,000**	**$6,378,450**	**$11,636,310**	**$11,216,330**	**$8,751,090**	**$10,081,490**		**$77,641,670**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Inflated CIP

Table: A-11
Schedule: Water CIP Inflated
Date: 4/22/2016
Range: W_CIP_Inf

Annual Inflation		**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**		
Cumulative Inflation		**3.0%**	**6.1%**	**9.3%**	**12.6%**	**15.9%**	**19.4%**	**23.0%**	**26.7%**	**30.5%**		
	FY 2016	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**% Growth**	**$ Growth**
Project Name	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**	**PROJECTED**		
WATER TOWERS												
Water Tower Maint - Boyd Tower	$0	$0	$0	$0	$0	$0	$597,000	$0	$0	$0	0%	$0
Water Tower Maint - Robinson Tower	0	0	0	0	0	0	0	0	633,000	0	0%	0
Water Tower Maint - Cascade Tower	0	0	0	0	563,000	0	0	0	0	0	0%	0
Water Tower - High Pressure Plane	2,988,000	0	0	0	0	0	0	0	0	0	0%	0
Andrews Park Clearwell Rehab	0	0	212,000	0	0	0	0	0	0	0	0%	0
WTP Backwash Tower	0	62,000	191,000	0	0	0	0	0	0	0	0%	0
Water Tower Maint - Hall Park	0	0	0	109,000	0	0	0	0	0	0	0%	0
Water Tower Maint - Lindsey Tower	0	0	0	219,000	0	0	0	0	0	0	0%	0
Subtotal Water Tower Projects	**$2,988,000**	**$62,000**	**$403,000**	**$328,000**	**$563,000**	**$0**	**$597,000**	**$0**	**$633,000**	**$0**		**$0**
Subtotal Growth	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$0**
Subtotal Non-Growth	**$2,988,000**	**$62,000**	**$403,000**	**$328,000**	**$563,000**	**$0**	**$597,000**	**$0**	**$633,000**	**$0**		**$5,574,000**
WATER WELL IMPROVEMENTS												
Well Modifications: Arsenic Treatment	$0	$0	$0	$1,669,000	$0	$0	$0	$0	$0	$0	100%	$1,669,000
Well Arc Flash Safety	140,000	0	0	0	0	0	0	0	0	0	0%	0
Water Well 20 House Replacement	26,000	0	0	0	0	0	0	0	0	0	0%	0
Arsenic Treatment - Well 31	0	0	0	0	0	0	0	0	0	0	0%	0
Water Well Telemetry	24,000	0	0	0	0	0	0	0	0	0	0%	0
Subtotal Water Well Projects	**$190,000**	**$0**	**$0**	**$1,669,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$1,669,000**
Subtotal Growth	**$0**	**$0**	**$0**	**$1,669,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$1,669,000**
Subtotal Non-Growth	**$190,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$190,000**
WATER TREATMENT PLANT												
Upgrade SCADA System	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%	$0
High Service Line Repair (PayGo)	0	0	0	0	0	0	0	0	0	0	0%	0
2060 Strategic Water Supply Plan	0	0	0	0	0	0	0	0	633,000	0	0%	0
Pilot Study for WTP Land Purchase	0	155,000	0	0	0	0	0	0	0	0	0%	0
WTP Improvements Phase II	4,738,000	22,061,000	0	0	0	0	0	0	0	0	0%	0
Well Field Blending at WTP	482,000	496,000	1,619,000	0	0	0	0	0	0	0	0%	0
FYE16 Water Wells and Supply Lines (10 wells)	693,000	1,888,000	8,690,000	0	0	0	0	0	0	0	25%	2,817,750
WTP Software Upgrade	0	0	0	0	0	0	0	0	0	0	0%	0
WTP Land Purchase	0	0	0	1,748,000	0	0	0	0	0	0	0%	0
New Building for Line Maintenance	0	0	109,000	1,120,000	0	0	0	0	0	0	0%	0
12 MGD Groundwater Treatment Plant	0	0	0	0	0	10,088,000	37,653,000	38,783,000	0	0	0%	0
Re-Activate Arsenic Wells and 3 MGD GWTP	0	0	0	0	0	15,902,000	3,160,000	3,255,000	0	0	100%	22,317,000
2nd Connection to OKC	0	0	0	0	0	0	2,288,000	8,671,000	6,504,000	0	100%	17,463,000
Lake Thunderbird Augmentation (Design, ROW, and 1/3 Construction)	0	0	0	0	0	0	0	0	0	0	100%	0
Subtotal Water Treatment Plant Projects	**$5,913,000**	**$24,600,000**	**$10,418,000**	**$2,868,000**	**$0**	**$25,990,000**	**$43,101,000**	**$50,709,000**	**$7,137,000**	**$0**		**$42,597,750**
Subtotal Growth	**$173,250**	**$472,000**	**$2,172,500**	**$0**	**$0**	**$15,902,000**	**$5,448,000**	**$11,926,000**	**$6,504,000**	**$0**		**$42,597,750**
Subtotal Non-Growth	**$5,739,750**	**$24,128,000**	**$8,245,500**	**$2,868,000**	**$0**	**$10,088,000**	**$37,653,000**	**$38,783,000**	**$633,000**	**$0**		**$128,138,250**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Inflated CIP

Table: A-11
Schedule: Water CIP Inflated
Date: 4/22/2016
Range: W_CIP_Inf

Annual Inflation		**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**		
Cumulative Inflation		**3.0%**	**6.1%**	**9.3%**	**12.6%**	**15.9%**	**19.4%**	**23.0%**	**26.7%**	**30.5%**		
Project Name	**FY 2016 PROJECTED**	**FY 2017 PROJECTED**	**FY 2018 PROJECTED**	**FY 2019 PROJECTED**	**FY 2020 PROJECTED**	**FY 2021 PROJECTED**	**FY 2022 PROJECTED**	**FY 2023 PROJECTED**	**FY 2024 PROJECTED**	**FY 2025 PROJECTED**	**% Growth**	**$ Growth**
URBAN SERVICE AREA WATER LINES	$307,000	$142,000	$170,000	$177,000	$272,000	$351,000	$239,000	$246,000	$253,000	$261,000	0%	$0
HOT SOILS WATER LINE REPAIR PROGRAM	$102,000	$103,000	$106,000	$109,000	$113,000	$116,000	$119,000	$123,000	$127,000	$130,000	0%	$0
Total Growth CIP	**$173,250**	**$472,000**	**$2,172,500**	**$1,669,000**	**$0**	**$17,739,550**	**$9,668,690**	**$15,927,670**	**$8,295,910**	**$2,293,510**		**$58,412,080**
Total Non Growth CIP	**$21,231,958**	**$26,727,000**	**$10,731,500**	**$6,635,000**	**$6,715,000**	**$16,933,450**	**$50,244,310**	**$50,368,330**	**$10,397,090**	**$10,472,490**		**$210,456,128**
TOTAL CIP WATER PROJECTS	**$21,405,208**	**$27,199,000**	**$12,904,000**	**$8,304,000**	**$6,715,000**	**$34,673,000**	**$59,913,000**	**$66,296,000**	**$18,693,000**	**$12,766,000**		
WATER BOND PROJECTS Series 2006												
WTP Raw Waterline (Phase I)	0	0	0	0	0	0	0	0	0	0	0%	0
Water Line Improvements: High Pressure Plane	0	0	0	0	0	0	0	0	0	0	0%	0
Replace Control System	13,200	0	0	0	0	0	0	0	0	0	0%	0
Water Line Improvements-Segment A	0	0	0	0	0	0	0	0	0	0	0%	0
FYE 08 12" Water Line	0	0	0	0	0	0	0	0	0	0	0%	0
FYE 08 16" Water Line	0	0	0	0	0	0	0	0	0	0	0%	0
24" Waterline (Seg D,SH 9:24th SW to Jenkins)	1,254,530	0	0	0	0	0	0	0	0	0	0%	0
Water Well Telemetry	99	0	0	0	0	0	0	0	0	0	0%	0
Water Line Replacement: Berry Road	$3,385,963	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL ALL WATER FUND 31 PROJECTS	**$4,653,792**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Growth CIP Debt Financing Forecast

Table: A-12
Schedule: Water Growth Debt
Date: 4/22/2016
Range: W_G_Debt

Debt Financing Input	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Amount of Issue	$0	$0	$0	$0	$0	$37,000,000	$0	$0	$10,000,000	$0
Equal Annual Debt Service	0	0	0	0	0	2,783,134	0	0	752,198	0
Bond Issuance Expense	0	0	0	0	0	555,000	0	0	150,000	0
Debt Service Reserve	0	0	0	0	0	2,783,134	0	0	752,198	0
Bond Issue Terms										
Month of Issue	1	1	1	1	1	1	1	1	1	1
Repayment Delay	0	0	0	0	0	0	0	0	0	0
Interest Rate	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%
Payment Period	20	20	20	20	20	20	20	20	20	20
Issuance Expense	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Debt Service Reserve	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proposed Growth Debt Service										
2016 Revene Bond Issue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2017 Revene Bond Issue		0	0	0	0	0	0	0	0	0
2018 Revene Bond Issue			0	0	0	0	0	0	0	0
2019 Revene Bond Issue				0	0	0	0	0	0	0
2020 Revene Bond Issue					0	0	0	0	0	0
2021 Revene Bond Issue						2,783,134	2,783,134	2,783,134	2,783,134	2,783,134
2022 Revene Bond Issue							0	0	0	0
2023 Revene Bond Issue								0	0	0
2024 Revene Bond Issue									752,198	752,198
2025 Revene Bond Issue										0
Proposed Growth Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,783,134**	**$2,783,134**	**$2,783,134**	**$3,535,332**	**$3,535,332**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Non-Growth CIP Debt Financing Forecast

Table: A-13
Schedule: Water Non-Growth Debt
Date: 4/22/2016
Range: W_NG_Debt

Debt Financing Input	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Amount of Issue	$0	$35,000,000	$0	$0	$0	$90,000,000	$0	$0	$0	$0
Equal Annual Debt Service	0	2,632,694	0	0	0	6,769,785	0	0	0	0
Bond Issuance Expense	0	525,000	0	0	0	1,350,000	0	0	0	0
Debt Service Reserve	0	2,632,694	0	0	0	6,769,785	0	0	0	0
Bond Issue Terms										
Month of Issue	1	1	1	1	1	1	1	1	1	1
Repayment Delay	0	0	0	0	0	0	0	0	0	0
Interest Rate	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%
Payment Period	20	20	20	20	20	20	20	20	20	20
Issuance Expense	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Debt Service Reserve	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proposed Non-Growth Debt Service										
2016 Revene Bond Issue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2017 Revene Bond Issue		2,632,694	2,632,694	2,632,694	2,632,694	2,632,694	2,632,694	2,632,694	2,632,694	2,632,694
2018 Revene Bond Issue			0	0	0	0	0	0	0	0
2019 Revene Bond Issue				0	0	0	0	0	0	0
2020 Revene Bond Issue					0	0	0	0	0	0
2021 Revene Bond Issue						6,769,785	6,769,785	6,769,785	6,769,785	6,769,785
2022 Revene Bond Issue							0	0	0	0
2023 Revene Bond Issue								0	0	0
2024 Revene Bond Issue									0	0
2025 Revene Bond Issue										0
Proposed Non-Growth Debt Service	**$0**	**$2,632,694**	**$2,632,694**	**$2,632,694**	**$2,632,694**	**$9,402,479**	**$9,402,479**	**$9,402,479**	**$9,402,479**	**$9,402,479**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Water Consumption by Meter Size

Table: A-14
Schedule: Water Consumption
Date: 4/22/2016
Range: W_Consum

Residential	July 2013			August 2013			September 2013			October 2013		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	23	6,395	278	21	6,728	320	21	6,087	290	19	6,760	356
5/8" x 3/4"	3,197	259,908	81	3,202	262,232	82	3,179	264,056	83	3,192	258,572	81
3/4"	29,919	2,080,035	70	29,906	2,201,499	74	29,569	2,183,874	74	29,667	2,174,085	73
1"	486	149,534	308	490	168,085	343	486	168,552	347	485	179,677	370
1.5"	217	207,523	956	216	212,629	984	219	222,673	1,017	215	233,737	1,087
2"	251	395,879	1,577	248	450,783	1,818	249	469,365	1,885	247	529,553	2,144
3"	18	82,943	4,608	18	99,118	5,507	18	96,116	5,340	18	106,264	5,904
4"	6	10,827	1,805	6	18,769	3,128	6	17,629	2,938	6	16,467	2,745
6"	3	13,171	4,390	3	12,916	4,305	3	13,256	4,419	3	17,322	5,774

Commercial	July 2013			August 2013			September 2013			October 2013		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	4	1,222	306	4	2,120	530	4	1,601	400	4	1,786	447
5/8" x 3/4"	146	16,343	112	145	20,782	143	144	18,755	130	144	20,936	145
3/4"	1,031	114,017	111	1,028	122,584	119	1,029	137,154	133	1,039	136,115	131
1"	424	146,730	346	420	177,856	423	416	157,555	379	418	155,064	371
1.5"	223	79,952	359	223	91,398	410	225	84,718	377	228	95,755	420
2"	263	163,971	623	264	184,510	699	265	185,795	701	268	208,954	780
3"	42	74,940	1,784	41	76,693	1,871	41	76,413	1,864	41	81,160	1,980
4"	12	108,037	9,003	12	136,477	11,373	12	115,930	9,661	12	105,697	8,808
6"	6	64,175	10,696	6	74,776	12,463	6	70,423	11,737	6	72,953	12,159

Total	July 2013			August 2013			September 2013			October 2013		
Size	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	27	7,617	282	25	8,848	354	25	7,688	308	23	8,546	372
5/8" x 3/4"	3,343	276,251	83	3,347	283,014	85	3,323	282,811	85	3,336	279,508	84
3/4"	30,950	2,194,052	71	30,934	2,324,083	75	30,598	2,321,028	76	30,706	2,310,200	75
1"	910	296,264	326	910	345,941	380	902	326,107	362	903	334,741	371
1.5"	440	287,475	653	439	304,027	693	444	307,391	692	443	329,492	744
2"	514	559,850	1,089	512	635,293	1,241	514	655,160	1,275	515	738,507	1,434
3"	60	157,883	2,631	59	175,811	2,980	59	172,529	2,924	59	187,424	3,177
4"	18	118,864	6,604	18	155,246	8,625	18	133,559	7,420	18	122,164	6,787
6"	9	77,346	8,594	9	87,692	9,744	9	83,679	9,298	9	90,275	10,031

Total 5/8"x3/4" and 3/4"	**2,470,303**	**2,607,097**	**2,603,839**	**2,589,708**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Water Consumption by Meter Size

Table: A-14
Schedule: Water Consumption
Date: 4/22/2016
Range: W_Consum

Residential	November 2013			December 2013			January 2014			February 2014		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	21	5,106	243	21	7,286	347	15	5,302	353	14	5,099	364
5/8" x 3/4"	3,180	173,006	54	3,177	153,931	48	3,174	160,226	50	3,174	151,330	48
3/4"	29,651	1,467,478	49	29,827	1,358,419	46	29,953	1,451,086	48	29,900	1,350,524	45
1"	485	128,151	264	491	116,354	237	493	134,632	273	492	128,123	260
1.5"	216	190,367	881	216	208,812	967	216	197,732	915	216	179,939	833
2"	247	431,983	1,749	238	441,594	1,855	248	526,195	2,122	248	486,288	1,961
3"	18	85,270	4,737	19	81,855	4,308	18	61,846	3,436	18	84,828	4,713
4"	6	14,802	2,467	6	16,112	2,685	6	21,276	3,546	6	16,449	2,742
6"	3	10,629	3,543	3	9,933	3,311	3	13,861	4,620	3	13,198	4,399

Commercial	November 2013			December 2013			January 2014			February 2014		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	4	1,664	416	4	1,555	389	4	1,374	344	4	1,031	258
5/8" x 3/4"	141	14,754	105	147	11,134	76	145	9,001	62	149	10,161	68
3/4"	1,031	114,067	111	1,025	102,654	100	1,029	108,556	105	1,036	96,299	93
1"	419	116,618	278	418	101,742	243	421	93,369	222	424	88,568	209
1.5"	229	74,760	326	226	68,477	303	228	67,111	294	228	64,744	284
2"	267	143,372	537	271	137,060	506	272	141,328	520	267	131,816	494
3"	41	56,946	1,389	42	60,113	1,431	42	46,598	1,109	42	51,331	1,222
4"	12	71,349	5,946	12	70,394	5,866	12	62,398	5,200	12	82,979	6,915
6"	6	48,773	8,129	6	40,531	6,755	6	39,908	6,651	6	39,879	6,647

Total	November 2013			December 2013			January 2014			February 2014		
Size	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	25	6,770	271	25	8,841	354	19	6,676	351	18	6,130	341
5/8" x 3/4"	3,321	187,760	57	3,324	165,065	50	3,319	169,227	51	3,323	161,491	49
3/4"	30,682	1,581,545	52	30,852	1,461,073	47	30,982	1,559,642	50	30,936	1,446,823	47
1"	904	244,769	271	909	218,096	240	914	228,001	249	916	216,691	237
1.5"	445	265,127	596	442	277,289	627	444	264,843	596	444	244,683	551
2"	514	575,355	1,119	509	578,654	1,137	520	667,523	1,284	515	618,104	1,200
3"	59	142,216	2,410	61	141,968	2,327	60	108,444	1,807	60	136,159	2,269
4"	18	86,151	4,786	18	86,506	4,806	18	83,674	4,649	18	99,428	5,524
6"	9	59,402	6,600	9	50,464	5,607	9	53,769	5,974	9	53,077	5,897

Total 5/8"x3/4" and 3/4"	**1,769,305**	**1,626,138**	**1,728,869**	**1,608,314**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Water Consumption by Meter Size

Table: A-14
Schedule: Water Consumption
Date: 4/22/2016
Range: W_Consum

Residential	March 2014			April 2014			May 2014			June 2014		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	16	4,309	269	15	2,223	148	19	1,907	100	8	775	97
5/8" x 3/4"	3,184	149,792	47	3,178	157,081	49	3,199	207,339	65	3,186	274,498	86
3/4"	30,024	1,381,804	46	30,114	1,390,827	46	30,355	1,726,170	57	30,242	2,303,805	76
1"	486	119,590	246	492	117,868	240	492	129,063	262	484	162,815	336
1.5"	216	191,871	888	216	175,785	814	217	173,661	800	220	213,766	972
2"	248	459,377	1,852	258	331,034	1,283	261	486,267	1,863	267	522,174	1,956
3"	18	84,537	4,697	18	0	0	19	75,163	3,956	19	95,015	5,001
4"	6	16,151	2,692	6	15,486	2,581	6	14,493	2,416	6	18,130	3,022
6"	3	11,323	3,774	3	9,946	3,315	3	13,208	4,403	3	13,944	4,648

Commercial	March 2014			April 2014			May 2014			June 2014		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	5	941	188	3	29	10	3	39	13	3	2,967	989
5/8" x 3/4"	147	10,069	68	145	8,913	61	146	12,290	84	147	18,902	129
3/4"	1,036	106,481	103	1,038	106,413	103	1,032	101,089	98	1,033	147,607	143
1"	423	96,738	229	427	99,233	232	425	110,824	261	425	171,788	404
1.5"	230	65,861	286	229	68,192	298	231	72,716	315	230	88,830	386
2"	267	140,789	527	269	133,077	495	271	143,313	529	268	200,986	750
3"	42	55,187	1,314	42	54,038	1,287	42	55,621	1,324	42	78,911	1,879
4"	12	75,771	6,314	12	81,365	6,780	12	89,757	7,480	12	119,361	9,947
6"	6	44,157	7,360	6	46,144	7,691	6	47,487	7,915	6	70,185	11,698

Total	March 2014			April 2014			May 2014			June 2014		
Size	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	21	5,250	250	18	2,252	125	22	1,946	88	11	3,742	340
5/8" x 3/4"	3,331	159,861	48	3,323	165,994	50	3,345	219,629	66	3,333	293,400	88
3/4"	31,060	1,488,285	48	31,152	1,497,240	48	31,387	1,827,259	58	31,275	2,451,412	78
1"	909	216,328	238	919	217,101	236	917	239,887	262	909	334,603	368
1.5"	446	257,732	578	445	243,977	548	448	246,377	550	450	302,596	672
2"	515	600,166	1,165	527	464,111	881	532	629,580	1,183	535	723,160	1,352
3"	60	139,724	2,329	60	54,038	901	61	130,784	2,144	61	173,926	2,851
4"	18	91,922	5,107	18	96,851	5,381	18	104,250	5,792	18	137,491	7,638
6"	9	55,480	6,164	9	56,090	6,232	9	60,695	6,744	9	84,129	9,348

Total 5/8"x3/4" and 3/4"	**1,648,146**	**1,663,234**	**2,046,888**	**2,744,812**

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Water Consumption by Meter Size

Table: A-14
Schedule: Water Consumption
Date: 4/22/2016
Range: W_Consum

	Annual				
Size	**Avg Meter Count**	**Annual Cons (100 Gal)**	**Annual Avg Cons (100 Gal)**	**Annual Avg (gal)**	
Unknown	22	74,306	3,443	344,275	
5/8" x 3/4"	3,331	2,644,011	794	79,384	
3/4"	30,960	22,462,642	726	72,555	
1"	910	3,218,529	3,536	353,620	
1.5"	444	3,331,009	7,499	749,946	
2"	519	7,445,463	14,360	1,435,962	
3"	60	1,720,906	28,722	2,872,166	
4"	18	1,316,106	73,117	7,311,700	
6"	9	812,098	90,233	9,023,311	
					GPD Average
Total 5/8"x3/4" and 3/4"	**34,290**	**25,106,653**	**732**	**73,218**	201

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Example Monthly Bills

Table: A-15
Schedule: Water Consumption
Date: 4/22/2016
Range: W_Bills

Single Family Residential - Example Monthly Water Bill (4,000 gallons per month)

Meter Size	Average Monthly Usage (gal)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Compound Annual Increase in Bills
5/8" & 3/4"	4,000	$21.40	$21.40	$26.11	$26.11	$31.85	$31.85	$35.04	$35.04	$36.09	$36.09	5.36%
Proposed Rate Increases		0%	0%	22%	0%	22%	0%	10%	0%	3%	0%	
Base Fee (Per Unit)		$6.00	$6.00	$7.32	$7.32	$8.93	$8.93	$9.82	$9.82	$10.12	$10.12	
Capital Improvement Charge (Per Unit)		$2.00	$2.00	$2.44	$2.44	$2.98	$2.98	$3.27	$3.27	$3.37	$3.37	
Volume Charges												
Up to 5,000 gal (per kgal)		$3.35	$3.35	$4.09	$4.09	$4.99	$4.99	$5.48	$5.48	$5.65	$5.65	
5,001 to 15,000 gal (per kgal)		$4.10	$4.10	$5.00	$5.00	$6.10	$6.10	$6.71	$6.71	$6.91	$6.91	
15,001 to 20,000 gal (per kgal)		$5.20	$5.20	$6.34	$6.34	$7.74	$7.74	$8.51	$8.51	$8.77	$8.77	
over 20,000 (per kgal)		$6.80	$6.80	$8.30	$8.30	$10.12	$10.12	$11.13	$11.13	$11.47	$11.47	
High Usage Surcharge (July and August)		$0.35	$0.35	$0.43	$0.43	$0.52	$0.52	$0.57	$0.57	$0.59	$0.59	

City of Norman, Oklahoma
2015 Connection Charge Study
Water Capital Financing Plan - Example Monthly Bills

Table: A-15
Schedule: Water Consumption
Date: 4/22/2016
Range: W_Bills

Single Family Residential - Example Monthly Water Bill (6,100 gallons per month)

Meter Size	Average Monthly Usage (gal)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Compound Annual Increase in Bills
5/8" & 3/4"	6,100	$29.26	$29.26	$35.70	$35.70	$43.55	$43.55	$47.91	$47.91	$49.34	$49.34	5.36%
Proposed Rate Increases		0%	0%	22%	0%	22%	0%	10%	0%	3%	0%	
Base Fee (Per Unit)		$6.00	$6.00	$7.32	$7.32	$8.93	$8.93	$9.82	$9.82	$10.12	$10.12	
Capital Improvement Charge (Per Unit)		$2.00	$2.00	$2.44	$2.44	$2.98	$2.98	$3.27	$3.27	$3.37	$3.37	
Volume Charges												
Up to 5,000 gal (per kgal)		$3.35	$3.35	$4.09	$4.09	$4.99	$4.99	$5.48	$5.48	$5.65	$5.65	
5,001 to 15,000 gal (per kgal)		$4.10	$4.10	$5.00	$5.00	$6.10	$6.10	$6.71	$6.71	$6.91	$6.91	
15,001 to 20,000 gal (per kgal)		$5.20	$5.20	$6.34	$6.34	$7.74	$7.74	$8.51	$8.51	$8.77	$8.77	
over 20,000 (per kgal)		$6.80	$6.80	$8.30	$8.30	$10.12	$10.12	$11.13	$11.13	$11.47	$11.47	
High Usage Surcharge (July and August)		$0.35	$0.35	$0.43	$0.43	$0.52	$0.52	$0.57	$0.57	$0.59	$0.59	

APPENDIX B:

WASTEWATER CONNECTION CHARGES AND CAPITAL FINANING PLAN

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Assumptions

Table: B-1
Schedule: WW Inputs
Date: 4/22/2016
Range: WW_Assum

Interest Earnings on Reserves	1.0%
Annual Construction Cost Inflation	3.0%
Inflation of Connections Fees per ENR Index?	No
Operating Reserve (Days Annual O&M)	30
Capital Reserve (Years of Average Capital Expenses)	5
Target Debt Service Coverage Ratio	1.5
Annual Transfer To General Fund (% of Operating Revenues)	5.0%
Operating Expenditure Escalation Rates (1)	
Salaries and Benefits	5.0%
Supplies and Materials	1.0%
Services and Maintenance	1.0%
Internal Services	2.0%
Cost Allocations	1.0%
Employee Turnover Savings	5.0%
Operating Revenue Transfers to CIP	
% to Growth Sub-Fund	0.0%
% to Non-Growth Sub-Fund	100.0%
Debt Financing Assumptions	
Month of Issue	1
Repayment Delay	0
Interest Rate	4.25%
Payment Period	20
Issuance Expense	1.5%
Debt Service Reserve (% of Annual Payment)	100%

Notes:

1) Percent increase of operating expenditures are based on Norman 2016 Budget
2) The Sewer Maintenance Fund (321) is completely non-growth.
3) The New Development Excise Tax Fund (322) is completely growth.
4) Sewer Sales Tax Fund (323) will have no future activity.
5) Both revenue increases and connection fee increases start in FY 2018.

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Master Control

Table: B-2
Schedule: WW Master
Date: 4/22/2016
Range: WW_Master

Proposed Rate Increases	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Annual Increases	0.0%	0.0%	10.0%	0.0%	10.0%	0.0%	10.0%	0.0%	10.0%	0.0%
Months Effective	12	12	12	12	12	12	12	12	12	12
Actual % Increase	0.0%	0.0%	10.0%	0.0%	10.0%	0.0%	10.0%	0.0%	10.0%	0.0%
Cumulative Increases	0.00%	0.00%	10.00%	10.00%	21.00%	21.00%	33.10%	33.10%	46.41%	46.41%
Operating Sub-Fund										
Operating Reserve Ending Balance	(350,806)	(635,609)	683,310	698,827	723,272	743,334	770,178	792,024	821,532	845,336
Operating Reserve Target	740,263	704,467	683,310	698,827	723,272	743,334	770,178	792,024	821,532	845,336
Operating Reserve Variance	(1,091,070)	(1,340,076)	0	0	0	0	0	0	0	0
Non-Growth CIP Sub-Fund										
Non-Growth CIP Debt Issue ($ Millions)							$80			
Non-Growth CIP Sub-Fund Ending Balance	5,298,596	6,755,383	8,138,972	6,212,822	5,016,797	3,776,685	42,030,904	6,563,653	6,176,900	5,726,874
Norman Policy Target Reserve	10,594,064	6,475,276	13,507,700	20,663,214	20,152,814	19,528,050	22,130,672	16,825,523	5,644,500	5,728,000
Growth CIP Sub-Fund										
Growth CIP Debt Issue ($ Millions)							$15			
Growth CIP Sub-Fund Reserve Ending Balance	7,870,637	7,246,959	7,208,618	7,204,498	6,357,543	5,542,226	10,989,251	2,494,050	1,531,352	605,625
Norman Policy Target Reserve	174,436	354,124	1,817,300	3,324,386	3,324,386	3,149,950	3,712,828	2,511,810	2,511,810	2,511,810
Consolidated										
Consolidated Ending Balance	$12,818,426	$13,366,733	$16,030,900	$14,116,147	$12,097,611	$10,062,246	$53,790,334	$9,849,727	$8,529,784	$7,177,835
Debt Service Coverage										
DSCR without Connection Charges (Target 1.5X)	0.87	1.40	1.93	2.22	2.91	3.09	1.46	1.48	1.74	1.76
DSCR with Connection Charges (Target 1.5X)	1.14	1.65	2.33	2.63	3.35	3.55	1.65	1.66	1.93	1.95
Demand Growth										
% Revenue Growth Due to Increase in Demand	0.0%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
Revenue from Rate Increases										
2016	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2017		0	0	0	0	0	0	0	0	0
2018			1,123,601	1,141,541	1,159,749	1,178,284	1,197,145	1,216,304	1,235,789	1,255,630
2019				0	0	0	0	0	0	0
2020					1,275,724	1,296,112	1,316,860	1,337,934	1,359,368	1,381,193
2021						0	0	0	0	0
2022							1,448,546	1,471,727	1,495,304	1,519,313
2023								0	0	0
2024									1,644,835	1,671,244
2025										0
Total	**$0**	**$0**	**$1,123,601**	**$1,141,541**	**$2,435,474**	**$2,474,396**	**$3,962,551**	**$4,025,965**	**$5,735,295**	**$5,827,380**

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Operating Sub-Fund (RFC Format)

Table: B-3
Schedule: WW Operating
Date: 4/22/2016
Range: WW_Op

Operating Sub-Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Operating Revenues											
Enterprise Fund Fees/Chgs (Less Connection Charge Receipts)	$10,887,000	$11,059,871	$11,236,009	$11,415,414	$11,597,493	$11,782,839	$11,971,452	$12,163,036	$12,357,887	$12,556,302	$117,027,304
Revenue from Rate Increases	0	0	1,123,601	1,141,541	2,435,474	2,474,396	3,962,551	4,025,965	5,735,295	5,827,380	26,726,203
Total Operating Revenue	10,887,000	11,059,871	12,359,610	12,556,956	14,032,967	14,257,235	15,934,003	16,189,001	18,093,182	18,383,682	143,753,508
Other Revenues											
Interest Income	19,757	0	0	6,393	6,456	6,591	23,468	4,533	7,353	7,527	82,078
Other Misc. Revenue	573,462	491,757	496,675	501,641	506,658	511,724	515,814	519,936	524,091	528,280	5,170,038
I/F Transfer - General Fund	0	0	0	0	0	0	0	0	0	0	
Total Other Revenues	593,219	491,757	496,675	508,034	513,114	518,315	539,281	524,469	531,444	535,806	5,252,116
Total Revenues	11,480,219	11,551,628	12,856,285	13,064,990	14,546,081	14,775,551	16,473,285	16,713,470	18,624,627	18,919,489	149,005,623
Operating Expenditures											
Salaries and Benefits	3,207,202	3,339,621	3,403,271	3,573,434	3,752,106	3,939,711	4,136,697	4,343,531	4,560,708	4,788,743	39,045,024
Supplies and Materials	459,249	613,922	620,061	626,261	632,525	638,850	645,239	651,691	658,208	664,790	6,210,796
Services and Maintenance	1,575,241	1,460,690	1,475,297	1,490,050	1,504,950	1,519,910	1,535,109	1,550,460	1,565,964	1,581,624	15,259,295
Internal Services	382,977	390,937	398,755	406,730	414,865	423,164	431,627	440,260	449,065	458,046	4,196,425
Cost Allocations	1,777,809	1,795,587	1,813,543	1,831,678	1,849,995	1,868,495	1,887,180	1,906,052	1,925,112	1,944,363	18,599,815
Employee Turnover Savings	(48,108)	(50,357)	(51,049)	(53,601)	(56,282)	(59,096)	(62,051)	(65,154)	(68,411)	(71,832)	(585,941)
Total Operating Expenditures	7,354,370	7,550,400	7,659,878	7,874,552	8,098,159	8,331,034	8,573,800	8,826,840	9,090,646	9,365,735	82,725,415
Other Expenditures											
Capital Equipment	1,107,819	467,619	35,749	0	0	0	0	0	0	0	1,611,187
I/F Transfer-General Fund	544,350	552,994	617,980	627,848	701,648	712,862	796,700	809,450	904,659	919,184	7,187,675
Total Other Expenditures	1,652,169	1,020,613	653,729	627,848	701,648	712,862	796,700	809,450	904,659	919,184	8,798,862
Existing Debt Service (Fund 32 only)											
Debt Service - 96 SRF Note	69,336	0	0	0	0	0	0	0	0	0	69,336
Debt Service - 99 SRF Note	254,093	255,319	254,057	252,796	127,177	0	0	0	0	0	1,143,442
Debt Service - 14 SRF Note	3,380,100	2,357,044	2,359,393	2,360,809	2,364,256	2,322,227	2,301,494	2,280,945	2,260,580	2,240,397	24,227,245
Debt Service - 15 Rev. Bonds	1,315,104	653,055	243,949	248,997	128,832	126,332	0	0	0	0	2,716,269
Total Existing Debt Service	5,018,633	3,265,418	2,857,399	2,862,602	2,620,265	2,448,559	2,301,494	2,280,945	2,260,580	2,240,397	28,156,292
Transfers to CIP Funds											
Transfer to Non-Growth Sub-Fund	0	0	366,359	1,684,471	3,101,564	3,263,034	4,774,446	4,774,389	6,339,233	6,370,368	30,673,865
Total Expenditures	14,025,172	11,836,431	11,537,366	13,049,473	14,521,637	14,755,489	16,446,440	16,691,625	18,595,118	18,895,685	150,354,434
Net Operating Surplus/(Deficit)	(2,544,953)	(284,803)	1,318,919	15,517	24,444	20,062	26,844	21,846	29,508	23,804	(1,348,811)
Operating Reserve											
Beginning Balance	2,194,147	(350,806)	(635,609)	683,310	698,827	723,272	743,334	770,178	792,024	821,532	
Add: Net Operating Surplus/(Deficit)	(2,544,953)	(284,803)	1,318,919	15,517	24,444	20,062	26,844	21,846	29,508	23,804	
Ending Non-Growth Balance	(350,806)	(635,609)	683,310	698,827	723,272	743,334	770,178	792,024	821,532	845,336	
Target Operating Reserve	740,263	704,467	683,310	698,827	723,272	743,334	770,178	792,024	821,532	845,336	
Variance from Target Operating Reserve	(1,091,070)	(1,340,076)	0	0	0	0	0	0	0	0	

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - CIP Sub-Funds (RFC Format)

Table: B-4
Schedule: WW Sub-Funds
Date: 4/22/2016
Range: WW_Sub

Non-Growth Sub-Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Beginning Balance	$4,159,656	$5,298,596	$6,755,383	$8,138,972	$6,212,822	$5,016,797	$3,776,685	$42,030,904	$6,563,653	$6,176,900	
Sources of Funds											
Sewer Replacement Charge	605,000	614,607	624,395	634,364	644,483	654,783	665,264	675,910	686,738	697,765	6,503,308
Capital Improvement Charge	731,500	743,115	754,950	767,004	779,238	791,692	804,365	817,237	830,329	843,661	7,863,091
Sewer Maintenance Rate	2,884,843	2,930,650	2,977,324	3,024,863	3,073,110	3,122,223	3,172,202	3,222,968	3,274,599	3,327,176	31,009,957
Transfer In from Operating Sub-Fund	0	0	366,359	1,684,471	3,101,564	3,263,034	4,774,446	4,774,389	6,339,233	6,370,368	30,673,865
Interest Income	37,455	52,415	70,561	76,148	57,399	45,719	119,233	247,400	60,934	56,591	823,856
Total Revenue	4,258,798	4,340,788	4,793,589	6,186,851	7,655,794	7,877,450	9,535,510	9,737,904	11,191,834	11,295,560	76,874,078
Debt Financing											
Debt Issue	0	0	0	0	0	0	80,000,000	0	0	0	80,000,000
Grant Reimbursement	26,591,643	0	0	0	0	0	0	0	0	0	26,591,643
Transfer to Debt Service Reserve	0	0	0	0	0	0	6,017,587	0	0	0	6,017,587
Bond Issuance Cost	0	0	0	0	0	0	1,200,000	0	0	0	1,200,000
Net Revenue Bond Proceeds/Grant Reimbursement	26,591,643	0	0	0	0	0	72,782,413	0	0	0	99,374,056
Total Sources of Funds	35,010,097	9,639,383	11,548,972	14,325,822	13,868,617	12,894,247	86,094,609	51,768,808	17,755,487	17,472,461	138,734,869
Uses of Funds											
Non-Growth Related Capital Projects	29,711,501	2,884,000	3,410,000	8,113,000	8,851,820	9,117,562	38,046,118	39,187,569	5,561,000	5,728,000	150,610,569
Non-Growth Related Proposed Debt Service	0	0	0	0	0	0	6,017,587	6,017,587	6,017,587	6,017,587	24,070,347
Total Uses of Funds	29,711,501	2,884,000	3,410,000	8,113,000	8,851,820	9,117,562	44,063,705	45,205,155	11,578,587	11,745,587	174,680,916
Ending Balance	$5,298,596	$6,755,383	$8,138,972	$6,212,822	$5,016,797	$3,776,685	$42,030,904	$6,563,653	$6,176,900	$5,726,874	
Target Reserve	10,594,064	6,475,276	13,507,700	20,663,214	20,152,814	19,528,050	22,130,672	16,825,523	5,644,500	5,728,000	
Variance from Target Reserve	(5,295,469)	280,107	(5,368,728)	(14,450,391)	(15,136,017)	(15,751,364)	19,900,233	(10,261,870)	532,400	(1,126)	

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - CIP Sub-Funds (RFC Format)

Table: B-4
Schedule: WW Sub-Funds
Date: 4/22/2016
Range: WW_Sub

Growth Sub-Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Beginning Balance	$9,474,166	$7,870,637	$7,246,959	$7,208,618	$7,204,498	$6,357,543	$5,542,226	$10,989,251	$2,494,050	$1,531,352	
Sources of Funds											
Connection Charge Receipts	275,000	197,253	769,170	795,100	809,917	829,497	855,427	871,038	890,618	917,342	7,210,363
New Growth Excise Tax - Residential	1,300,000	825,690	838,839	852,233	865,826	879,664	893,745	908,048	922,595	937,408	9,224,048
New Growth Excise Tax - Commercial	400,000	254,058	258,104	262,226	266,408	270,666	274,998	279,399	283,875	288,433	2,838,168
Transfer In from Operating Sub-Fund	0	0	0	0	0	0	0	0	0	0	0
Interest Income	85,308	77,859	75,696	67,444	66,561	57,938	174,973	64,684	23,154	14,030	707,646
Total Revenue	2,060,308	1,354,860	1,941,810	1,977,003	2,008,713	2,037,764	2,199,144	2,123,170	2,120,242	2,157,212	19,980,226
Debt Financing											
Debt Issue	0	0	0	0	0	0	15,000,000	0	0	0	15,000,000
Grant Reimbursement	14,813,873	0	0	0	0	0	0	0	0	0	14,813,873
Transfer to Debt Service Reserve	0	0	0	0	0	0	1,128,298	0	0	0	1,128,298
Bond Issuance Cost	0	0	0	0	0	0	225,000	0	0	0	225,000
Net Revenue Bond Proceeds/Grant Reimbursement	14,813,873	0	0	0	0	0	13,646,702	0	0	0	28,460,575
Total Sources of Funds	26,348,347	9,225,497	9,188,769	9,185,621	9,213,211	8,395,307	21,388,073	13,112,421	4,614,292	3,688,565	114,360,101
Uses of Funds											
Growth-Related Capital Projects	0	0	0	0	872,180	898,438	7,315,882	7,535,431	0	0	16,621,932
FY 2016 Unspecified Growth-Related Capital Projects	15,800,291	0	0	0	0	0	0	0	0	0	15,800,291
Debt Service - 09 SRF (2011)	357,519	360,019	360,019	360,019	360,019	360,019	360,019	360,019	360,019	360,019	3,597,690
Debt Service - 14 SRF Note	2,319,900	1,618,519	1,620,132	1,621,104	1,623,469	1,594,623	1,594,623	1,594,623	1,594,623	1,594,623	16,776,239
Growth Related Proposed Debt Service	0	0	0	0	0	0	1,128,298	1,128,298	1,128,298	1,128,298	4,513,190
Total Uses of Funds	18,477,710	1,978,538	1,980,151	1,981,123	2,855,668	2,853,080	10,398,822	10,618,371	3,082,940	3,082,940	57,309,342
Ending Balance	$7,870,637	$7,246,959	$7,208,618	$7,204,498	$6,357,543	$5,542,226	$10,989,251	$2,494,050	$1,531,352	$605,625	
Target Reserve	174,436	354,124	1,817,300	3,324,386	3,324,386	3,149,950	3,712,828	2,511,810	2,511,810	2,511,810	
Variance from Target Reserve	7,696,201	6,892,835	5,391,318	3,880,111	3,033,156	2,392,276	7,276,423	(17,760)	(980,458)	(1,906,185)	

Debt Service Reserve	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Non-Growth Debt Service Reserve	0	0	0	0	0	0	6,017,587	6,017,587	6,017,587	6,017,587	24,070,347
Growth Debt Service Reserve	0	0	0	0	0	0	1,128,298	1,128,298	1,128,298	1,128,298	4,513,190
Total Debt Service Reserve	0	0	0	0	0	0	7,145,884	7,145,884	7,145,884	7,145,884	28,583,537

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Consolidated (RFC Format)

Table: B-5
Schedule: WW Consolidated
Date: 4/22/2016
Range: WW_Cons

Consolidated Water Reclamation Financial Plan	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Operating Revenues											
Enterprise Fund Fees/Chgs (Less Connection Fee Receipts)	10,887,000	11,059,871	11,236,009	11,415,414	11,597,493	11,782,839	11,971,452	12,163,036	12,357,887	12,556,302	$117,027,304
Revenue from Rate Increases	0	0	1,123,601	1,141,541	2,435,474	2,474,396	3,962,551	4,025,965	5,735,295	5,827,380	$26,726,203
Sewer Replacement Charge	605,000	614,607	624,395	634,364	644,483	654,783	665,264	675,910	686,738	697,765	$6,503,308
Capital Improvement Charge	731,500	743,115	754,950	767,004	779,238	791,692	804,365	817,237	830,329	843,661	$7,863,091
Sewer Maintenance Rate	2,884,843	2,930,650	2,977,324	3,024,863	3,073,110	3,122,223	3,172,202	3,222,968	3,274,599	3,327,176	$31,009,957
Total Operating Revenue	15,108,343	15,348,243	16,716,278	16,983,187	18,529,797	18,825,932	20,575,834	20,905,116	22,884,850	23,252,283	189,129,864
Other Revenues											
Interest Income	142,519	130,274	146,257	149,985	130,417	110,248	317,675	316,617	91,440	78,147	1,613,580
Other Misc. Revenue	573,462	491,757	496,675	501,641	506,658	511,724	515,814	519,936	524,091	528,280	5,170,038
I/F Transfer - General Fund	0	0	0	0	0	0	0	0	0	0	0
Connection Fee Receipts	275,000	197,253	769,170	795,100	809,917	829,497	855,427	871,038	890,618	917,342	7,210,363
New Growth Excise Tax - Residential	1,300,000	825,690	838,839	852,233	865,826	879,664	893,745	908,048	922,595	937,408	9,224,048
New Growth Excise Tax - Commercial	400,000	254,058	258,104	262,226	266,408	270,666	274,998	279,399	283,875	288,433	2,838,168
Total Other Revenues	2,690,981	1,899,032	2,509,046	2,561,185	2,579,227	2,601,799	2,857,659	2,895,039	2,712,620	2,749,610	26,056,197
Total Revenues	17,799,324	17,247,275	19,225,324	19,544,372	21,109,024	21,427,731	23,433,492	23,800,155	25,597,469	26,001,893	215,186,061
Operating Expenditures											
Salaries and Benefits	3,207,202	3,339,621	3,403,271	3,573,434	3,752,106	3,939,711	4,136,697	4,343,531	4,560,708	4,788,743	39,045,024
Supplies and Materials	459,249	613,922	620,061	626,261	632,525	638,850	645,239	651,691	658,208	664,790	6,210,796
Services and Maintenance	1,575,241	1,460,690	1,475,297	1,490,050	1,504,950	1,519,910	1,535,109	1,550,460	1,565,964	1,581,624	15,259,295
Internal Services	382,977	390,937	398,755	406,730	414,865	423,164	431,627	440,260	449,065	458,046	4,196,425
Cost Allocations	1,777,809	1,795,587	1,813,543	1,831,678	1,849,995	1,868,495	1,887,180	1,906,052	1,925,112	1,944,363	18,599,815
Employee Turnover Savings	(48,108)	(50,357)	(51,049)	(53,601)	(56,282)	(59,096)	(62,051)	(65,154)	(68,411)	(71,832)	(585,941)
Total Operating Expenditures	7,354,370	7,550,400	7,659,878	7,874,552	8,098,159	8,331,034	8,573,800	8,826,840	9,090,646	9,365,735	82,725,415
Other Expenditures											
Capital Equipment	1,107,819	467,619	35,749	0	0	0	0	0	0	0	1,611,187
I/F Transfer-General Fund	544,350	552,994	617,980	627,848	701,648	712,862	796,700	809,450	904,659	919,184	7,187,675
Total Other Expenditures	1,652,169	1,020,613	653,729	627,848	701,648	712,862	796,700	809,450	904,659	919,184	8,798,862
Existing Debt Service											
Debt Service - 96 SRF Note	69,336	0	0	0	0	0	0	0	0	0	69,336
Debt Service - 99 SRF Note	254,093	255,319	254,057	252,796	127,177	0	0	0	0	0	1,143,442
Debt Service - 09 SRF (2011 Issue Date)	357,519	360,019	360,019	360,019	360,019	360,019	360,019	360,019	360,019	360,019	3,597,690
Debt Service - 14 SRF Note	3,380,100	2,357,044	2,359,393	2,360,809	2,364,256	2,322,227	2,301,494	2,280,945	2,260,580	2,240,397	24,227,245
Debt Service - 14 SRF Note - Fund 322	2,319,900	1,618,519	1,620,132	1,621,104	1,623,469	1,594,623	1,594,623	1,594,623	1,594,623	1,594,623	16,776,239
Debt Service - 15 Rev. Bonds	1,315,104	653,055	243,949	248,997	128,832	126,332	0	0	0	0	2,716,269
Total Existing Debt Service	7,696,052	5,243,956	4,837,550	4,843,725	4,603,753	4,403,201	4,256,136	4,235,587	4,215,222	4,195,039	48,530,221
Proposed Growth CIP Debt Service											
2016 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2017 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2018 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2019 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2020 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2021 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2022 Revene Bond Issue	0	0	0	0	0	0	1,128,298	1,128,298	1,128,298	1,128,298	4,513,190
2023 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2024 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2025 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
Total Growth Debt Service	0	0	0	0	0	0	1,128,298	1,128,298	1,128,298	1,128,298	4,513,190

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Consolidated (RFC Format)

Table: B-5
Schedule: WW Consolidated
Date: 4/22/2016
Range: WW_Cons

Consolidated Water Reclamation Financial Plan	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Proposed Non-Growth CIP Debt Service											
2016 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2017 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2018 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2019 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2020 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2021 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2022 Revene Bond Issue	0	0	0	0	0	0	6,017,587	6,017,587	6,017,587	6,017,587	24,070,347
2023 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2024 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
2025 Revene Bond Issue	0	0	0	0	0	0	0	0	0	0	0
Total Non-Growth Debt Service	0	0	0	0	0	0	6,017,587	6,017,587	6,017,587	6,017,587	24,070,347
Total Debt Service	7,696,052	5,243,956	4,837,550	4,843,725	4,603,753	4,403,201	11,402,020	11,381,471	11,361,107	11,340,923	77,113,758
Capital Projects											
Growth-Related Capital Projects	0	0	0	0	872,180	898,438	7,315,882	7,535,431	0	0	16,621,932
FY 2016 Unspecified Growth-Related Capital Projects	15,800,291	0	0	0	0	0	0	0	0	0	15,800,291
Non-Growth Related Capital Projects	29,711,501	2,884,000	3,410,000	8,113,000	8,851,820	9,117,562	38,046,118	39,187,569	5,561,000	5,728,000	150,610,569
Total Capital Projects	45,511,792	2,884,000	3,410,000	8,113,000	9,724,000	10,016,000	45,362,000	46,723,000	5,561,000	5,728,000	183,032,792
Total Expenditures	62,214,383	16,698,969	16,561,157	21,459,125	23,127,560	23,463,097	66,134,520	67,740,762	26,917,412	27,353,843	351,670,827
Net Operating Surplus/(Deficit)	(44,415,059)	548,307	2,664,166	(1,914,752)	(2,018,536)	(2,035,365)	(42,701,028)	(43,940,607)	(1,319,943)	(1,351,950)	(136,484,766)
Combined Reserve											
Beginning Balance	15,827,969	12,818,426	13,366,733	16,030,900	14,116,147	12,097,611	10,062,246	53,790,334	9,849,727	8,529,784	
Add: Net Operating Surplus/(Deficit)	(44,415,059)	548,307	2,664,166	(1,914,752)	(2,018,536)	(2,035,365)	(42,701,028)	(43,940,607)	(1,319,943)	(1,351,950)	
Debt Financing											
Bond Proceeds/Grant Reimbursement	41,405,516	0	0	0	0	0	95,000,000	0	0	0	136,405,516
Transfer to Debt Service Reserve	0	0	0	0	0	0	7,145,884	0	0	0	7,145,884
Bond Issuance Cost	0	0	0	0	0	0	1,425,000	0	0	0	1,425,000
Net Revenue Bond Proceeds/Grant Reimbursement	41,405,516	0	0	0	0	0	86,429,116	0	0	0	127,834,632
Ending Balance	12,818,426	13,366,733	16,030,900	14,116,147	12,097,611	10,062,246	53,790,334	9,849,727	8,529,784	7,177,835	
Target Operating Reserve	740,263	704,467	683,310	698,827	723,272	743,334	770,178	792,024	821,532	845,336	
Variance from Target Operating Reserve	12,078,163	12,662,267	15,347,590	13,417,320	11,374,339	9,318,912	53,020,156	9,057,703	7,708,252	6,332,499	
Debt Service Reserve for Proposed Debt Issues											
Beginning Balance	0	0	0	0	0	0	0	7,145,884	7,145,884	7,145,884	
Additions to Reserve	0	0	0	0	0	0	7,145,884	0	0	0	
Ending Balance	0	0	0	0	0	0	7,145,884	7,145,884	7,145,884	7,145,884	
Interest											
Beginning Balance	$15,827,969	$12,818,426	$13,366,733	$16,030,900	$14,116,147	$12,097,611	$10,062,246	$53,790,334	$9,849,727	$8,529,784	
Add: Total Revenues	17,656,805	17,117,001	19,079,067	19,394,387	20,978,607	21,317,483	23,115,818	23,483,538	25,506,029	25,923,746	
Add: Bond Proceeds	41,405,516	0	0	0	0	0	86,429,116	0	0	0	
Less: Total Expenditures	62,214,383	16,698,969	16,561,157	21,459,125	23,127,560	23,463,097	66,134,520	67,740,762	26,917,412	27,353,843	
Ending Balance	12,675,907	13,236,459	15,884,643	13,966,162	11,967,194	9,951,998	53,472,659	9,533,110	8,438,344	7,099,687	

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Consolidated (RFC Format)

Table: B-5
Schedule: WW Consolidated
Date: 4/22/2016
Range: WW_Cons

Consolidated Water Reclamation Financial Plan	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Average Balance	14,251,938	13,027,443	14,625,688	14,998,531	13,041,671	11,024,804	31,767,452	31,661,722	9,144,035	7,814,736	
Interest Income	$142,519	$130,274	$146,257	$149,985	$130,417	$110,248	$317,675	$316,617	$91,440	$78,147	
Beginning Reserves											
Operating Fund	$2,194,147	$0	$0	$683,310	$698,827	$723,272	$743,334	$770,178	$792,024	$821,532	
Growth CIP Sub-Fund	9,474,166	7,870,637	7,246,959	7,208,618	7,204,498	6,357,543	5,542,226	10,989,251	2,494,050	1,531,352	
Non-Growth CIP Sub-Fund	4,159,656	5,298,596	6,755,383	8,138,972	6,212,822	5,016,797	3,776,685	42,030,904	6,563,653	6,176,900	
Total	$15,827,969	$13,169,233	$14,002,342	$16,030,900	$14,116,147	$12,097,611	$10,062,246	$53,790,334	$9,849,727	$8,529,784	
Operating Fund	13.9%	0.0%	0.0%	4.3%	5.0%	6.0%	7.4%	1.4%	8.0%	9.6%	
Growth CIP Sub-Fund	59.9%	59.8%	51.8%	45.0%	51.0%	52.6%	55.1%	20.4%	25.3%	18.0%	
Non-Growth CIP Sub-Fund	26.3%	40.2%	48.2%	50.8%	44.0%	41.5%	37.5%	78.1%	66.6%	72.4%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Apportioned Interest											
Operating Fund	$19,757	$0	$0	$6,393	$6,456	$6,591	$23,468	$4,533	$7,353	$7,527	
Growth CIP Sub-Fund	85,308	77,859	75,696	67,444	66,561	57,938	174,973	64,684	23,154	14,030	
Non-Growth CIP Sub-Fund	37,455	52,415	70,561	76,148	57,399	45,719	119,233	247,400	60,934	56,591	
Total	$142,519	$130,274	$146,257	$149,985	$130,417	$110,248	$317,675	$316,617	$91,440	$78,147	

Check on Beginning Cash										
Operating Fund	$2,194,147	($350,806)	($635,609)	$683,310	$698,827	$723,272	$743,334	$770,178	$792,024	$821,532
Growth Fund	9,474,166	7,870,637	7,246,959	7,208,618	7,204,498	6,357,543	5,542,226	10,989,251	2,494,050	1,531,352
Non-Growth Fund	4,159,656	5,298,596	6,755,383	8,138,972	6,212,822	5,016,797	3,776,685	42,030,904	6,563,653	6,176,900
Total	15,827,969	12,818,426	13,366,733	16,030,900	14,116,147	12,097,611	10,062,246	53,790,334	9,849,727	8,529,784
Consolidated	15,827,969	12,818,426	13,366,733	16,030,900	14,116,147	12,097,611	10,062,246	53,790,334	9,849,727	8,529,784
Difference	0	0	0	0	0	0	0	0	0	0
Check on Ending Cash										
Operating Fund	(350,806)	(635,609)	683,310	698,827	723,272	743,334	770,178	792,024	821,532	845,336
Growth Fund	7,870,637	7,246,959	7,208,618	7,204,498	6,357,543	5,542,226	10,989,251	2,494,050	1,531,352	605,625
Non-Growth Fund	5,298,596	6,755,383	8,138,972	6,212,822	5,016,797	3,776,685	42,030,904	6,563,653	6,176,900	5,726,874
Total	12,818,426	13,366,733	16,030,900	14,116,147	12,097,611	10,062,246	53,790,334	9,849,727	8,529,784	7,177,835
Consolidated	12,818,426	13,366,733	16,030,900	14,116,147	12,097,611	10,062,246	53,790,334	9,849,727	8,529,784	7,177,835
Difference	0	0	0	0	0	0	0	0	0	0

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Norman Format

Table: B-6
Schedule: WW Norman
Date: 4/22/2016
Range: WW_Norm

Line	Water Reclamation Fund (32)	FY 2016 Projected	FY 2017 Projected	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 2022 Projected	FY 2023 Projected	FY 2024 Projected	FY 2025 Projected
1	**Beginning Water Reclamation Fund Balance**	$2,194,147	$4,095,044	$2,541,653	$3,027,029	($1,125,028)	($4,549,669)	($8,037,524)	$27,881,524	($10,085,699)	($12,806,653)
	Operating Revenues										
2	Enterprise Fund Fees/Chgs	10,887,000	11,059,871	11,236,009	11,415,414	11,597,493	11,782,839	11,971,452	12,163,036	12,357,887	12,556,302
3	Additional Revenue from Rate Increases	0	0	1,123,601	1,141,541	2,435,474	2,474,396	3,962,551	4,025,965	5,735,295	5,827,380
4	Connection Fee Revenue	275,000	197,253	769,170	795,100	809,917	829,497	855,427	871,038	890,618	917,342
5	Sewer Replacement Charge	605,000	614,607	624,395	634,364	644,483	654,783	665,264	675,910	686,738	697,765
6	Capital Improvement Charge	731,500	743,115	754,950	767,004	779,238	791,692	804,365	817,237	830,329	843,661
7	**Total Operating Revenues**	**12,498,500**	**12,614,846**	**14,508,125**	**14,753,425**	**16,266,605**	**16,533,207**	**18,259,059**	**18,553,187**	**20,500,868**	**20,842,450**
	Operating Expenditures										
8	Salaries and Benefits	$3,132,520	$3,282,498	$3,345,299	$3,512,564	$3,688,192	$3,872,602	4,066,232	4,269,544	4,483,021	4,707,172
9	Supplies and Materials	456,733	611,813	617,931	624,110	630,352	636,655	643,022	649,452	655,947	662,506
10	Services and Maintenance	1,573,216	1,458,665	1,473,252	1,487,984	1,502,864	1,517,893	1,533,072	1,548,402	1,563,886	1,579,525
11	Internal Services	382,977	390,637	398,449	406,418	414,547	422,839	431,295	439,921	448,720	457,695
12	Cost Allocations	1,777,809	1,795,587	1,813,543	1,831,678	1,849,995	1,868,495	1,887,180	1,906,052	1,925,112	1,944,363
13	Employee Turnover Savings	(46,988)	(49,237)	(50,179)	(52,688)	(55,323)	(58,089)	(60,994)	(64,043)	(67,246)	(70,608)
14	**Total Operating Expenditures**	**7,276,267**	**7,489,963**	**7,598,295**	**7,810,066**	**8,030,627**	**8,260,395**	**8,499,808**	**8,749,328**	**9,009,440**	**9,280,653**
15	**Net Operating Revenue**	**5,222,233**	**5,124,883**	**6,909,830**	**6,943,359**	**8,235,978**	**8,272,812**	**9,759,252**	**9,803,859**	**11,491,428**	**11,561,797**
	Other Revenues										
16	Interest Income	19,757	0	0	6,393	6,456	6,591	23,468	4,533	7,353	7,527
17	Bond Proceeds/Grant Reimb.	26,591,643	0	0	0	0	0	72,782,413	0	0	0
18	Misc. Revenue/Cost Allocation	573,462	491,757	496,675	501,641	506,658	511,724	515,814	519,936	524,091	528,280
19	I/F Transfer - Halpark (capacity)	0	0	0	0	0	0	0	0	0	0
20	I/F Transfer - Sanitation	0	0	0	0	0	0	0	0	0	0
21	I/F Transfer - General Fund	0	0	0	0	0	0	0	0	0	0
22	**Total Other Revenues**	**27,184,862**	**491,757**	**496,675**	**508,034**	**513,114**	**518,315**	**73,321,695**	**524,469**	**531,444**	**535,806**
	Other Expenditures										
23	Audit Accruals/Adj/Encumbrances	0	0	0	0	0	0	0	0	0	0
24	Debt Service - 96 SRF Note	69,336	0	0	0	0	0	0	0	0	0
25	Debt Service - 99 SRF Note	254,093	255,319	254,057	252,796	127,177	0	0	0	0	0
26	Debt Service - 14 SRF Note	3,380,100	2,357,044	2,359,393	2,360,809	2,364,256	2,322,227	2,301,494	2,280,945	2,260,580	2,240,397
27	Debt Service - 15 Rev. Bonds	1,315,104	653,055	243,949	248,997	128,832	126,332	0	0	0	0
28	Debt Service - Proposed Debt Service	0	0	0	0	0	0	6,017,587	6,017,587	6,017,587	6,017,587
29	Capital Projects	23,835,396	2,884,000	3,410,000	8,113,000	8,851,820	9,117,562	38,046,118	39,187,569	5,561,000	5,728,000
30	Capital Equipment	1,107,819	467,619	35,749	0	0	0	0	0	0	0
31	I/F Transfer - Sewer Maint Fund 321	0	0	0	0	0	0	0	0	0	0
32	I/F Transfer - Hallpark	0	0	0	0	0	0	0	0	0	0
33	I/F Transfer - General Fund	544,350	552,994	617,980	627,848	701,648	712,862	796,700	809,450	904,659	919,184
34	**Total Other Expenditures**	**30,506,198**	**7,170,031**	**6,921,128**	**11,603,450**	**12,173,733**	**12,278,982**	**47,161,898**	**48,295,551**	**14,743,826**	**14,905,168**
35	**Net Revenues (Expenditures)**	**1,900,897**	**(1,553,391)**	**485,376**	**(4,152,057)**	**(3,424,641)**	**(3,487,855)**	**35,919,048**	**(37,967,222)**	**(2,720,954)**	**(2,807,565)**
36	**Ending Water Fund Balance**	**$4,095,044**	**$2,541,653**	**$3,027,029**	**($1,125,028)**	**($4,549,669)**	**($8,037,524)**	**$27,881,524**	**($10,085,699)**	**($12,806,653)**	**($15,614,218)**
37	**Target Reserves**										
38	Reserve for Encumbrances	0	0	0	0	0	0	0	0	0	0
39	Reserve for Operations	740,263	704,467	683,310	698,827	723,272	743,334	770,178	792,024	821,532	845,336
40	Reserve for Bond Projects - Proposed Issues	0	0	0	0	0	0	7,145,884	7,145,884	7,145,884	7,145,884
41	Reserve for Capital	10,768,500	6,829,400	15,325,000	23,987,600	23,477,200	22,678,000	25,843,500	19,337,333	8,156,310	8,239,810
42	Reserve (Deficit) Surplus	0	0	0	0	0	0	0	0	0	0
43	**Total Target Reserves**	$11,508,764	$7,533,867	$16,008,310	$24,686,427	$24,200,472	$23,421,334	$33,759,562	$27,275,242	$16,123,727	$16,231,031

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Norman Format

Table: B-6
Schedule: WW Norman
Date: 4/22/2016
Range: WW_Norm

Line	Sewer Maintenance Fund (321)	FY 2016 Projected	FY 2017 Projected	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 2022 Projected	FY 2023 Projected	FY 2024 Projected	FY 2025 Projected
1	**Beginning Fund Balance**	$4,159,656	$1,125,675	$4,048,304	$7,034,605	$10,071,130	$13,134,107	$16,231,410	$19,448,853	$22,841,708	$26,096,035
	Operating Revenues										
2	Capital Improvement Charge	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Sewer Maintenance Rate	$2,884,843	$2,930,650	$2,977,324	$3,024,863	$3,073,110	$3,122,223	$3,172,202	$3,222,968	$3,274,599	$3,327,176
4	Total Operating Revenues	$2,884,843	$2,930,650	$2,977,324	$3,024,863	$3,073,110	$3,122,223	$3,172,202	$3,222,968	$3,274,599	$3,327,176
	Operating Expenditures										
5	Salaries and Benefits	$74,682	$57,123	$57,972	$60,870	$63,914	$67,109	$70,464	$73,988	$77,687	$81,571
6	Supplies and Materials	2,516	2,109	2,130	2,151	2,173	2,195	2,217	2,239	2,262	2,284
7	Services and Maintenance	2,025	2,025	2,045	2,066	2,086	2,017	2,037	2,058	2,078	2,099
8	Internal Services	0	300	306	312	318	325	332	338	345	352
9	Cost Allocations	0	0	0	0	0	0	0	0	0	0
10	Employee Turnover Savings	(1,120)	(1,120)	(870)	(913)	(959)	(1,007)	(1,057)	(1,110)	(1,166)	(1,224)
11	Total Operating Expenditures	$78,103	$60,437	$61,583	$64,486	$67,532	$70,639	$73,993	$77,512	$81,206	$85,082
	Other Revenues										
12	Interest Income	$37,455	$52,415	$70,561	$76,148	$57,399	$45,719	$119,233	$247,400	$60,934	$56,591
13	Misc. Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
14	I/F Trans-Capital	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15	I/F Trans-Wastewater Fund 32	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	Total Other Revenues	$37,455	$52,415	$70,561	$76,148	$57,399	$45,719	$119,233	$247,400	$60,934	$56,591
	Other Expenditures										
17	Capital Projects	$5,876,105	$0	$0	$0	$0	$0	$0	$0	$0	$0
18	Capital Equipment	$2,071	$0	$0	$0	$0	$0	$0	$0	$0	$0
19	Total Other Expenditures	$5,878,176	$0	$0	$0	$0	$0	$0	$0	$0	$0
20	**Total Revenues**	$2,922,298	$2,983,066	$3,047,885	$3,101,011	$3,130,509	$3,167,942	$3,291,435	$3,470,367	$3,335,533	$3,383,767
21	**Total Expenditures**	$5,956,279	$60,437	$61,583	$64,486	$67,532	$70,639	$73,993	$77,512	$81,206	$85,082
22	**Net Revenues (Expenditures)**	**(3,033,981)**	**2,922,629**	**2,986,302**	**3,036,525**	**3,062,977**	**3,097,303**	**3,217,443**	**3,392,855**	**3,254,328**	**3,298,684**
23	**Ending Fund Balance**	**1,125,675**	**4,048,304**	**7,034,605**	**10,071,130**	**13,134,107**	**16,231,410**	**19,448,853**	**22,841,708**	**26,096,035**	**29,394,720**
	Target Reserves										
24	Reserve for Encumbrances										
25	Reserve for Operations										
26	Reserve for Bond Projects - Proposed Issues										
27	Reserve for Capital										
28	Reserve (Deficit) Surplus										

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Norman Format

Table: B-6
Schedule: WW Norman
Date: 4/22/2016
Range: WW_Norm

Line	New Development Excise Tax Fund (322)	FY 2016 Projected	FY 2017 Projected	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 2022 Projected	FY 2023 Projected	FY 2024 Projected	FY 2025 Projected
1	**Beginning Fund Balance**	$9,474,166	$7,579,457	$6,758,526	$5,951,014	$5,151,794	$3,494,922	$1,850,109	$7,570,004	($667,938)	($1,392,957)
	Operating Revenues										
2	Excise Tax - Residential	$1,300,000	$825,690	$838,839	$852,233	$865,826	$879,664	$893,745	$908,048	$922,595	$937,408
3	Excise Tax - Commercial	$400,000	$254,058	$258,104	$262,226	$266,408	$270,666	$274,998	$279,399	$283,875	$288,433
4	**Total Operating Revenues**	**$1,700,000**	**$1,079,748**	**$1,096,944**	**$1,114,459**	**$1,132,235**	**$1,150,330**	**$1,168,743**	**$1,187,447**	**$1,206,470**	**$1,225,841**
5	**Total Operating Expenditures**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	**Net Operating Revenue**	$1,700,000	$1,079,748	$1,096,944	$1,114,459	$1,132,235	$1,150,330	$1,168,743	$1,187,447	$1,206,470	$1,225,841
	Other Revenues										
7	Interest Income	$85,308	$77,859	$75,696	$67,444	$66,561	$57,938	$174,973	$64,684	$23,154	$14,030
8	Bond Proceeds/Grant Reimb.	$14,813,873	$0	$0	$0	$0	$0	$13,646,702	$0	$0	$0
9	SRF Loan Proceeds	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	I/F Transfer-General Fund	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Transfer From Sewer Sales Tax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	**Total Other Revenues**	**$14,899,181**	**$77,859**	**$75,696**	**$67,444**	**$66,561**	**$57,938**	**$13,821,676**	**$64,684**	**$23,154**	**$14,030**
13	**Other Expenditures**										
14	Existing Debt Service	$2,677,419	$1,978,538	$1,980,151	$1,981,123	$1,983,488	$1,954,642	$1,954,642	$1,954,642	$1,954,642	$1,954,642
15	Services & Maintenance	$16,180	$0	$0	$0	$0	$0	$0	$0	$0	$0
	FY 2016 Unspecified Growth-Related Capital Projects	$15,800,291	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	Capital Projects	$0	$0	$0	$0	$872,180	$898,438	$7,315,882	$7,535,431	$0	$0
17	**Total Other Expenditures**	**$18,493,890**	**$1,978,538**	**$1,980,151**	**$1,981,123**	**$2,855,668**	**$2,853,080**	**$9,270,524**	**$9,490,073**	**$1,954,642**	**$1,954,642**
18	**Total Expenditures**	**$18,493,890**	**$1,978,538**	**$1,980,151**	**$1,981,123**	**$2,855,668**	**$2,853,080**	**$9,270,524**	**$9,490,073**	**$1,954,642**	**$1,954,642**
19	**Net Revenues (Expenditures)**	**(1,894,709)**	**(820,931)**	**(807,511)**	**(799,220)**	**(1,656,872)**	**(1,644,813)**	**5,719,895**	**(8,237,942)**	**(725,018)**	**(714,771)**
20	**Ending Fund Balance**	**7,579,457**	**6,758,526**	**5,951,014**	**5,151,794**	**3,494,922**	**1,850,109**	**7,570,004**	**(667,938)**	**(1,392,957)**	**(2,107,728)**
	Target Reserves										
21	Reserve for Encumbrances										
22	Reserve for Operations										
23	Reserve for Bond Projects - Proposed Issues										
24	Reserve for Capital										
25	Reserve (Deficit) Surplus										

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Connection Fee Calculation

Table: B-7
Schedule: WW Connection
Date: 4/22/2016
Range: WW_Conn

Calculated Connection Charge Based on 5/8"x3/4" and 3/4" Meters		
Description	**Capacity Additions**	**Calculation**
Uninflated Growth-Related CIP 2015 - 2025		$13,803,895
Plus: NPV of Borrowing Cost - Future Debt		4,172,824
Total Cost for Connection Fee Calculation		$17,976,719
Capacity in Water Reclamation Facility Available for Growth (MGD)	3.1	
Estimated 5/8" & 3/4" Wastewater Discharges (gpd) (1)	161	
Estimated Peaking Factor (2)	1.00	
Maximum Gallons per Day (Estimated 5/8" & 3/4" Peak Day Wastewater Discharges)	161	
Incremental Capacity (3.1 MGD Capacity Available for Growth/161 gpd)	19,255	
Calculated Connection Fee		**$934**

(1) Winter SFR Average Use (December - January - February)
(2) From City of Norman

Connection Fee Assessment Schedule Based on AWWA Flow Equivalencies					
Meter Size	**AWWA Flow Equiv.**	**Existing Connection Charges**	**Calculated Fee**	**Dollar Difference**	**% Difference**
3/4	1.00	$275	$934	$659	340%
1"	2.67	$550	$2,494	$1,944	453%
1.5"	3.33	$1,100	$3,110	$2,010	283%
2"	10.67	$1,925	$9,966	$8,041	518%
3"	21.33	$4,625	$19,922	$15,297	431%
4"	33.33	$7,988	$31,130	$23,143	390%
6"	66.67	$18,381	$62,270	$43,889	339%

Determination of Incremental Water Reclamation Infrastructure Capacity

Water Reclamation Facility (MGD)	
Current Avg. Day Used	13.9
Current Total Capacity	17
Current Capacity Avail to Growth	3.1

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Connection Fee Revenue Forecast

Table: B-8
Schedule: WW Connection Forecast
Date: 4/22/2016
Range: WW_Conn_For

Step #1: Calculate Historical Growth in Water Customers

Water Meters In Service (as of 5/15)					Historical # of Water Meters Added					
Meter Size	2015 Actual Meters	2015 % of Total	AWWA Flow Equivalencies	# 5/8" Equiv. Meters	FY 2012	FY 2013	FY 2014	3-Yr. Avg.	% Avg Inc.	Use
5/8" & 3/4"	34,319	94.32%	1.00	34,319	305	834	411	517	1.51%	1.51%
1"	942	2.59%	2.67	2,512	20	9	21	17	1.77%	1.77%
1.5"	479	1.32%	3.33	1,597	3	13	34	17	3.48%	3.48%
2"	542	1.49%	10.67	5,782	11	36	26	24	4.49%	4.49%
3"	60	0.16%	21.33	1,280	-	1	1	1	1.11%	1.11%
4"	22	0.06%	33.33	734	-	1	-	0	1.52%	1.52%
6"	10	0.03%	66.67	667	-	-	-	-	0.00%	0.00%
8"	11	0.03%	106.67	1,173	-	-	-	-	0%	0.00%
Total	36,385	100%		48,064	339	894	493	575		

Step #2: Forecast In-Service Water Meters

Meter Size	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
3/4"	34,557	35,078	35,607	36,144	36,689	37,242	37,803	38,373	38,951	39,538
1"	950	967	985	1,003	1,021	1,040	1,059	1,078	1,098	1,118
1.5"	487	504	522	541	560	580	601	622	644	667
2"	554	579	605	633	662	692	724	757	791	827
3"	61	62	63	64	65	66	67	68	69	70
4"	23	24	25	26	27	28	29	30	31	32
6"	10	10	10	10	10	10	10	10	10	10
8"	11	11	11	11	11	11	11	11	11	11
Total	36,653	37,235	37,828	38,432	39,045	39,669	40,304	40,949	41,605	42,273
Incremental Growth		582	593	604	613	624	635	645	656	668
% Growth		1.59%	1.59%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.61%

Assumed % of New Water Users Connecting to WW system	85%

Step #3: Forecast Incremental New Wastewater Connections

Meter Size	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
5/8" & 3/4"	202	443	450	456	463	470	477	485	491	499
1"	7	14	15	15	15	16	16	16	17	17
1.5"	7	14	15	16	16	17	18	18	19	20
2"	10	21	22	24	25	26	27	28	29	31
3"	1	1	1	1	1	1	1	1	1	1
4"	1	1	1	1	1	1	1	1	1	1
6"	0	0	0	0	0	0	0	0	0	0
8"	0	0	0	0	0	0	0	0	0	0
Total	228	495	504	513	521	530	540	548	558	568
Cumulative	228	723	1,227	1,740	2,261	2,791	3,331	3,879	4,437	5,005

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Connection Fee Revenue Forecast

Table: B-8
Schedule: WW Connection Forecast
Date: 4/22/2016
Range: WW_Conn_For

Step #4: Forecast of Connection Charge Revenue Based on Existing (Effective on August 1, 2015)

Meter Size	Existing	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
5/8" & 3/4"	$275	$55,632.50	$121,784								
1"	550	3,740	7,948								
1.5"	1,100	7,480	15,895								
2"	1,925	19,635	40,906								
3"	4,625	3,931	3,931								
4"	7,988	6,789	6,789								
6"	18,381	0	0								
Total		$97,208	$197,253								

Step #6: Forecast of Connection Charge Revenue (Calculated Charges Based on AWWA Flow Rate Equivalencies)

Meter Size	Calculated	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
5/8" & 3/4"	$934			$419,973	$426,324	$432,676	$439,027	$445,378	$452,523	$458,874	$466,019
1"	2,494			38,155	38,155	38,155	40,275	40,275	40,275	42,394	42,394
1.5"	3,110			47,586	50,230	50,230	52,874	55,517	55,517	58,161	60,805
2"	9,966			220,244	237,186	245,656	254,127	271,069	279,540	288,011	304,953
3"	19,922			16,934	16,934	16,934	16,934	16,934	16,934	16,934	16,934
4"	31,130			26,461	26,461	26,461	26,461	26,461	26,461	26,461	26,461
6"	62,270			0	0	0	0	0	0	0	0
Total				$769,353	$795,289	$810,111	$829,697	$855,634	$871,250	$890,835	$917,566

Annual Inflation	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**
Cumulative Inflation	**3.0%**	**6.1%**	**9.3%**	**12.6%**	**15.9%**	**19.4%**	**23.0%**

City of Norman, Oklahoma
2015 Sewer Connection Fee Study
Wastewater Capital Financing Plan - Debt Service Coverage

Table: B-9
Schedule: WW DSCR
Date: 4/22/2016
Range: WW_Debt

Debt Service Coverage Calculation	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
DSCR without Connection Charges											
Add: Operating Sub-Fund Revenue	$11,480,219	$11,551,628	$12,856,285	$13,064,990	$14,546,081	$14,775,551	$16,473,285	$16,713,470	$18,624,627	$18,919,489	$149,005,623
Add: Non-Growth Sub-Fund Revenue	$4,258,798	$4,340,788	$4,793,589	$6,186,851	$7,655,794	$7,877,450	$9,535,510	$9,737,904	$11,191,834	$11,295,560	$76,874,078
Less: Operating Expenses	$7,354,370	$7,550,400	$7,659,878	$7,874,552	$8,098,159	$8,331,034	$8,573,800	$8,826,840	$9,090,646	$9,365,735	$82,725,415
Less: Other Expenditures	$1,652,169	$1,020,613	$653,729	$627,848	$701,648	$712,862	$796,700	$809,450	$904,659	$919,184	$8,798,862
Net Revenues Available for Debt Service	$6,732,477	$7,321,403	$9,336,266	$10,749,441	$13,402,068	$13,609,105	$16,638,295	$16,815,084	$19,821,155	$19,930,130	$134,355,424
Existing Debt Service	$7,696,052	$5,243,956	$4,837,550	$4,843,725	$4,603,753	$4,403,201	$4,256,136	$4,235,587	$4,215,222	$4,195,039	$48,530,221
Proposed Growth Debt Service	$0	$0	$0	$0	$0	$0	$1,128,298	$1,128,298	$1,128,298	$1,128,298	$4,513,190
Proposed Non-Growth Debt Service	$0	$0	$0	$0	$0	$0	$6,017,587	$6,017,587	$6,017,587	$6,017,587	$24,070,347
Total Debt Service	$7,696,052	$5,243,956	$4,837,550	$4,843,725	$4,603,753	$4,403,201	$11,402,020	$11,381,471	$11,361,107	$11,340,923	$77,113,758
Calculated Debt Service Coverage	0.87	1.40	1.93	2.22	2.91	3.09	1.46	1.48	1.74	1.76	
DSCR with Connection Charges											
Add: Operating Fund Revenue	$11,480,219	$11,551,628	$12,856,285	$13,064,990	$14,546,081	$14,775,551	$16,473,285	$16,713,470	$18,624,627	$18,919,489	$149,005,623
Add: Non-Growth Sub-Fund Revenue	$4,258,798	$4,340,788	$4,793,589	$6,186,851	$7,655,794	$7,877,450	$9,535,510	$9,737,904	$11,191,834	$11,295,560	$76,874,078
Add: Growth Sub-Fund Revenue	$2,060,308	$1,354,860	$1,941,810	$1,977,003	$2,008,713	$2,037,764	$2,199,144	$2,123,170	$2,120,242	$2,157,212	$19,980,226
Less: Operating Expenses	$7,354,370	$7,550,400	$7,659,878	$7,874,552	$8,098,159	$8,331,034	$8,573,800	$8,826,840	$9,090,646	$9,365,735	$82,725,415
Less: Other Expenditures	$1,652,169	$1,020,613	$653,729	$627,848	$701,648	$712,862	$796,700	$809,450	$904,659	$919,184	$8,798,862
Net Revenues Available for Debt Service	$8,792,785	$8,676,263	$11,278,076	$12,726,443	$15,410,781	$15,646,870	$18,837,439	$18,938,254	$21,941,397	$22,087,342	$154,335,650
Existing Debt Service	$7,696,052	$5,243,956	$4,837,550	$4,843,725	$4,603,753	$4,403,201	$4,256,136	$4,235,587	$4,215,222	$4,195,039	$48,530,221
Proposed Growth Debt Service	$0	$0	$0	$0	$0	$0	$1,128,298	$1,128,298	$1,128,298	$1,128,298	$4,513,190
Proposed Non-Growth Debt Service	$0	$0	$0	$0	$0	$0	$6,017,587	$6,017,587	$6,017,587	$6,017,587	$24,070,347
Total Debt Service	$7,696,052	$5,243,956	$4,837,550	$4,843,725	$4,603,753	$4,403,201	$11,402,020	$11,381,471	$11,361,107	$11,340,923	$77,113,758
Calculated Debt Service Coverage	1.14	1.65	2.33	2.63	3.35	3.55	1.65	1.66	1.93	1.95	

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - CIP Before Inflation

Table: B-10
Schedule: WW CIP
Date: 4/22/2016
Range: WW_CIP

Project Name	FY 2016 PROJECTED	FY 2017 PROJECTED	FY 2018 PROJECTED	FY 2019 PROJECTED	FY 2020 PROJECTED	FY 2021 PROJECTED	FY 2022 PROJECTED	FY 2023 PROJECTED	FY 2024 PROJECTED	FY 2025 PROJECTED	Total	% Growth	$ to PIF Growth
Wastewater System													
South WRF Phase 3 BNR Improvements	$0	$0	$0	$0	$4,250,000	$4,250,000	$33,600,000	$33,600,000	$0	$0	$75,700,000	18%	$13,803,895
North Water Reclamation Facility	0	0	0	0	0	0	0	0	0	0	0	100%	$0
Water Reclamation Fund 032 CIP	1,314,000	0	414,000	4,624,000	1,590,000	1,590,000	1,590,000	1,590,000	1,590,000	1,590,000	$15,892,000	0%	$0
Sewer Maintenance Fund 321 CIP	2,785,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	$27,985,000	0%	$0
New Development Excise Fund 322 CIP	0	0	0	0	0	0	0	0	0	0	$0	100%	$0
Previous Projects - Fund 32	19,736,396	0	0	0	0	0	0	0	0	0	19,736,396	0%	$0
Previous Projects - Fund 321	5,876,105	0	0	0	0	0	0	0	0	0	5,876,105	0%	$0
Total Growth	**$0**	**$0**	**$0**	**$0**	**$774,988**	**$774,988**	**$6,126,960**	**$6,126,960**	**$0**	**$0**	**$13,803,895**		
Total Non-Growth	**$29,711,501**	**$2,800,000**	**$3,214,000**	**$7,424,000**	**$7,865,013**	**$7,865,013**	**$31,863,040**	**$31,863,040**	**$4,390,000**	**$4,390,000**	**$131,385,606**		

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - CIP After Inflation

Table: B-11
Schedule: WW CIP Inflated
Date: 4/22/2016
Range: WW_CIP_Inf

Annual Inflation		**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**			
Cumulative Inflation		**3.0%**	**6.1%**	**9.3%**	**12.6%**	**15.9%**	**19.4%**	**23.0%**	**26.7%**	**30.5%**			
Project Name	**FY 2016 PROJECTED**	**FY 2017 PROJECTED**	**FY 2018 PROJECTED**	**FY 2019 PROJECTED**	**FY 2020 PROJECTED**	**FY 2021 PROJECTED**	**FY 2022 PROJECTED**	**FY 2023 PROJECTED**	**FY 2024 PROJECTED**	**FY 2025 PROJECTED**	**Total**	**% Growth**	**$ Growth**
Wastewater System													
South WRF Phase 3 BNR Improvements	$0	$0	$0	$0	$4,783,000	$4,927,000	$40,120,000	$41,324,000	$0	$0	$91,154,000	18%	$16,621,932
North Water Reclamation Facility	0	0	0	0	0	0	0	0	0	0	0	100%	$0
Water Reclamation Fund 032 CIP	1,314,000	0	439,000	5,053,000	1,790,000	1,843,000	1,899,000	1,955,000	2,014,000	2,075,000	18,382,000	0%	$0
Sewer Maintenance Fund 321 CIP	2,785,000	2,884,000	2,971,000	3,060,000	3,151,000	3,246,000	3,343,000	3,444,000	3,547,000	3,653,000	32,084,000	0%	$0
New Development Excise Fund 322 CIP	0	0	0	0	0	0	0	0	0	0	0	100%	$0
Previous Projects - Fund 32	19,736,396	0	0	0	0	0	0	0	0	0	19,736,396	0%	$0
Previous Projects - Fund 321	5,876,105	0	0	0	0	0	0	0	0	0	5,876,105	0%	$0
Total Growth	**$0**	**$0**	**$0**	**$0**	**$872,180**	**$898,438**	**$7,315,882**	**$7,535,431**	**$0**	**$0**	**$16,621,932**		
Total Non-Growth	**$29,711,501**	**$2,884,000**	**$3,410,000**	**$8,113,000**	**$8,851,820**	**$9,117,562**	**$38,046,118**	**$39,187,569**	**$5,561,000**	**$5,728,000**	**$150,610,569**		

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Growth CIP Debt Financing Forecast

Table: B-12
Schedule: WW Growth Debt
Date: 4/22/2016
Range: WW_G_Debt

Debt Financing Input	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Amount of Issue	0	$0	$0	$0	$0	$0	$15,000,000	$0	$0	$0
Equal Annual Debt Service	0	0	0	0	0	0	1,128,298	0	0	0
Bond Issuance Expense	0	0	0	0	0	0	225,000	0	0	0
Debt Service Reserve	0	0	0	0	0	0	1,128,298	0	0	0
Bond Issue Terms										
Month of Issue	1	1	1	1	1	1	1	1	1	1
Repayment Delay	0	0	0	0	0	0	0	0	0	0
Interest Rate	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%
Payment Period	20	20	20	20	20	20	20	20	20	20
Issuance Expense	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Debt Service Reserve	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proposed Growth Debt Service										
2016 Revene Bond Issue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2017 Revene Bond Issue		0	0	0	0	0	0	0	0	0
2018 Revene Bond Issue			0	0	0	0	0	0	0	0
2019 Revene Bond Issue				0	0	0	0	0	0	0
2020 Revene Bond Issue					0	0	0	0	0	0
2021 Revene Bond Issue						0	0	0	0	0
2022 Revene Bond Issue							1,128,298	1,128,298	1,128,298	1,128,298
2023 Revene Bond Issue								0	0	0
2024 Revene Bond Issue									0	0
2025 Revene Bond Issue										0
Proposed Growth Debt Service	$0	$0	$0	$0	$0	$0	$1,128,298	$1,128,298	$1,128,298	$1,128,298

City of Norman, Oklahoma
2015 Connection Fee Study
Wastewater Capital Financing Plan - Non-Growth CIP Debt Financing Forecast

Table: B-13
Schedule: WW Non-Growth Debt
Date: 4/22/2016
Range: WW_NG_Debt

Debt Financing Input	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Amount of Issue	$0	$0	$0	$0	$0	$0	$80,000,000	$0	$0	$0
Equal Annual Debt Service	0	0	0	0	0	0	6,017,587	0	0	0
Bond Issuance Expense	0	0	0	0	0	0	1,200,000	0	0	0
Debt Service Reserve	0	0	0	0	0	0	6,017,587	0	0	0
Bond Issue Terms										
Month of Issue	1	1	1	1	1	1	1	1	1	1
Repayment Delay	0	0	0	0	0	0	0	0	0	0
Interest Rate	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%
Payment Period	20	20	20	20	20	20	20	20	20	20
Issuance Expense	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Debt Service Reserve	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proposed Non-Growth Debt Service										
2016 Revene Bond Issue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2017 Revene Bond Issue		0	0	0	0	0	0	0	0	0
2018 Revene Bond Issue			0	0	0	0	0	0	0	0
2019 Revene Bond Issue				0	0	0	0	0	0	0
2020 Revene Bond Issue					0	0	0	0	0	0
2021 Revene Bond Issue						0	0	0	0	0
2022 Revene Bond Issue							6,017,587	6,017,587	6,017,587	6,017,587
2023 Revene Bond Issue								0	0	0
2024 Revene Bond Issue									0	0
2025 Revene Bond Issue										0
Proposed Non-Growth Debt Service	$0	$0	$0	$0	$0	$0	$6,017,587	$6,017,587	$6,017,587	$6,017,587

City of Norman, Oklahoma
2015 Sewer Connection Fee Study
Wastewater Capital Financing Plan - Consumption by Meter Size

Table: B-14
Schedule: WW Consumption
Date: 4/22/2016
Range: WW_Consum

Residential	July 2013			August 2013			September 2013			October 2013		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	23	6,395	278	21	6,728	320	21	6,087	290	19	6,760	356
5/8" x 3/4"	3,197	259,908	81	3,202	262,232	82	3,179	264,056	83	3,192	258,572	81
3/4"	29,919	2,080,035	70	29,906	2,201,499	74	29,569	2,183,874	74	29,667	2,174,085	73
1"	486	149,534	308	490	168,085	343	486	168,552	347	485	179,677	370
1.5"	217	207,523	956	216	212,629	984	219	222,673	1,017	215	233,737	1,087
2"	251	395,879	1,577	248	450,783	1,818	249	469,365	1,885	247	529,553	2,144
3"	18	82,943	4,608	18	99,118	5,507	18	96,116	5,340	18	106,264	5,904
4"	6	10,827	1,805	6	18,769	3,128	6	17,629	2,938	6	16,467	2,745
6"	3	13,171	4,390	3	12,916	4,305	3	13,256	4,419	3	17,322	5,774

Commercial	July 2013			August 2013			September 2013			October 2013		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	4	1,222	306	4	2,120	530	4	1,601	400	4	1,786	447
5/8" x 3/4"	146	16,343	112	145	20,782	143	144	18,755	130	144	20,936	145
3/4"	1,031	114,017	111	1,028	122,584	119	1,029	137,154	133	1,039	136,115	131
1"	424	146,730	346	420	177,856	423	416	157,555	379	418	155,064	371
1.5"	223	79,952	359	223	91,398	410	225	84,718	377	228	95,755	420
2"	263	163,971	623	264	184,510	699	265	185,795	701	268	208,954	780
3"	42	74,940	1,784	41	76,693	1,871	41	76,413	1,864	41	81,160	1,980
4"	12	108,037	9,003	12	136,477	11,373	12	115,930	9,661	12	105,697	8,808
6"	6	64,175	10,696	6	74,776	12,463	6	70,423	11,737	6	72,953	12,159

Total	July 2013			August 2013			September 2013			October 2013		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	27	7,617	282	25	8,848	354	25	7,688	308	23	8,546	372
5/8" x 3/4"	3,343	276,251	83	3,347	283,014	85	3,323	282,811	85	3,336	279,508	84
3/4"	30,950	2,194,052	71	30,934	2,324,083	75	30,598	2,321,028	76	30,706	2,310,200	75
1"	910	296,264	326	910	345,941	380	902	326,107	362	903	334,741	371
1.5"	440	287,475	653	439	304,027	693	444	307,391	692	443	329,492	744
2"	514	559,850	1,089	512	635,293	1,241	514	655,160	1,275	515	738,507	1,434
3"	60	157,883	2,631	59	175,811	2,980	59	172,529	2,924	59	187,424	3,177
4"	18	118,864	6,604	18	155,246	8,625	18	133,559	7,420	18	122,164	6,787
6"	9	77,346	8,594	9	87,692	9,744	9	83,679	9,298	9	90,275	10,031

City of Norman, Oklahoma
2015 Sewer Connection Fee Study
Wastewater Capital Financing Plan - Consumption by Meter Size

Table: B-14
Schedule: WW Consumption
Date: 4/22/2016
Range: WW_Consum

Residential	November 2013			December 2013			January 2014			February 2014		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	21	5,106	243	21	7,286	347	15	5,302	353	14	5,099	364
5/8" x 3/4"	3,180	173,006	54	3,177	153,931	48	3,174	160,226	50	3,174	151,330	48
3/4"	29,651	1,467,478	49	29,827	1,358,419	46	29,953	1,451,086	48	29,900	1,350,524	45
1"	485	128,151	264	491	116,354	237	493	134,632	273	492	128,123	260
1.5"	216	190,367	881	216	208,812	967	216	197,732	915	216	179,939	833
2"	247	431,983	1,749	238	441,594	1,855	248	526,195	2,122	248	486,288	1,961
3"	18	85,270	4,737	19	81,855	4,308	18	61,846	3,436	18	84,828	4,713
4"	6	14,802	2,467	6	16,112	2,685	6	21,276	3,546	6	16,449	2,742
6"	3	10,629	3,543	3	9,933	3,311	3	13,861	4,620	3	13,198	4,399

Commercial	November 2013			December 2013			January 2014			February 2014		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	4	1,664	416	4	1,555	389	4	1,374	344	4	1,031	258
5/8" x 3/4"	141	14,754	105	147	11,134	76	145	9,001	62	149	10,161	68
3/4"	1,031	114,067	111	1,025	102,654	100	1,029	108,556	105	1,036	96,299	93
1"	419	116,618	278	418	101,742	243	421	93,369	222	424	88,568	209
1.5"	229	74,760	326	226	68,477	303	228	67,111	294	228	64,744	284
2"	267	143,372	537	271	137,060	506	272	141,328	520	267	131,816	494
3"	41	56,946	1,389	42	60,113	1,431	42	46,598	1,109	42	51,331	1,222
4"	12	71,349	5,946	12	70,394	5,866	12	62,398	5,200	12	82,979	6,915
6"	6	48,773	8,129	6	40,531	6,755	6	39,908	6,651	6	39,879	6,647

Total	November 2013			December 2013			January 2014			February 2014		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	25	6,770	271	25	8,841	354	19	6,676	351	18	6,130	341
5/8" x 3/4"	3,321	187,760	57	3,324	165,065	50	3,319	169,227	51	3,323	161,491	49
3/4"	30,682	1,581,545	52	30,852	1,461,073	47	30,982	1,559,642	50	30,936	1,446,823	47
1"	904	244,769	271	909	218,096	240	914	228,001	249	916	216,691	237
1.5"	445	265,127	596	442	277,289	627	444	264,843	596	444	244,683	551
2"	514	575,355	1,119	509	578,654	1,137	520	667,523	1,284	515	618,104	1,200
3"	59	142,216	2,410	61	141,968	2,327	60	108,444	1,807	60	136,159	2,269
4"	18	86,151	4,786	18	86,506	4,806	18	83,674	4,649	18	99,428	5,524
6"	9	59,402	6,600	9	50,464	5,607	9	53,769	5,974	9	53,077	5,897

Total Winter 5/8" x 3/4" and 3/4"	**1,626,138**	**1,728,869**	**1,608,314**	

City of Norman, Oklahoma
2015 Sewer Connection Fee Study
Wastewater Capital Financing Plan - Consumption by Meter Size

Table: B-14
Schedule: WW Consumption
Date: 4/22/2016
Range: WW_Consum

Residential	March 2014			April 2014			May 2014			June 2014		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	16	4,309	269	15	2,223	148	19	1,907	100	8	775	97
5/8" x 3/4"	3,184	149,792	47	3,178	157,081	49	3,199	207,339	65	3,186	274,498	86
3/4"	30,024	1,381,804	46	30,114	1,390,827	46	30,355	1,726,170	57	30,242	2,303,805	76
1"	486	119,590	246	492	117,868	240	492	129,063	262	484	162,815	336
1.5"	216	191,871	888	216	175,785	814	217	173,661	800	220	213,766	972
2"	248	459,377	1,852	258	331,034	1,283	261	486,267	1,863	267	522,174	1,956
3"	18	84,537	4,697	18	0	0	19	75,163	3,956	19	95,015	5,001
4"	6	16,151	2,692	6	15,486	2,581	6	14,493	2,416	6	18,130	3,022
6"	3	11,323	3,774	3	9,946	3,315	3	13,208	4,403	3	13,944	4,648

Commercial	March 2014			April 2014			May 2014			June 2014		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	5	941	188	3	29	10	3	39	13	3	2,967	989
5/8" x 3/4"	147	10,069	68	145	8,913	61	146	12,290	84	147	18,902	129
3/4"	1,036	106,481	103	1,038	106,413	103	1,032	101,089	98	1,033	147,607	143
1"	423	96,738	229	427	99,233	232	425	110,824	261	425	171,788	404
1.5"	230	65,861	286	229	68,192	298	231	72,716	315	230	88,830	386
2"	267	140,789	527	269	133,077	495	271	143,313	529	268	200,986	750
3"	42	55,187	1,314	42	54,038	1,287	42	55,621	1,324	42	78,911	1,879
4"	12	75,771	6,314	12	81,365	6,780	12	89,757	7,480	12	119,361	9,947
6"	6	44,157	7,360	6	46,144	7,691	6	47,487	7,915	6	70,185	11,698

Total	March 2014			April 2014			May 2014			June 2014		
SIZE	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG	COUNT	CONS/100G	AVG
Unknown	21	5,250	250	18	2,252	125	22	1,946	88	11	3,742	340
5/8" x 3/4"	3,331	159,861	48	3,323	165,994	50	3,345	219,629	66	3,333	293,400	88
3/4"	31,060	1,488,285	48	31,152	1,497,240	48	31,387	1,827,259	58	31,275	2,451,412	78
1"	909	216,328	238	919	217,101	236	917	239,887	262	909	334,603	368
1.5"	446	257,732	578	445	243,977	548	448	246,377	550	450	302,596	672
2"	515	600,166	1,165	527	464,111	881	532	629,580	1,183	535	723,160	1,352
3"	60	139,724	2,329	60	54,038	901	61	130,784	2,144	61	173,926	2,851
4"	18	91,922	5,107	18	96,851	5,381	18	104,250	5,792	18	137,491	7,638
6"	9	55,480	6,164	9	56,090	6,232	9	60,695	6,744	9	84,129	9,348

City of Norman, Oklahoma
2015 Sewer Connection Fee Study
Wastewater Capital Financing Plan - Consumption by Meter Size

Table: B-14
Schedule: WW Consumption
Date: 4/22/2016
Range: WW_Consum

	Average Winter Consumption				
SIZE	**WINTER AVG METER COUNT**	**WINTER CONS/100 GAL**	**WINTER AVG PER METER (100 GAL)**	**WINTER AVG (100 GAL)**	
Unknown	21	21,647	1,047	104,744	
5/8" x 3/4"	3,322	495,783	149	14,924	
3/4"	30,923	4,467,538	144	14,447	
1"	913	662,788	726	72,595	
1.5"	443	786,815	1,775	177,477	
2"	515	1,864,281	3,622	362,231	
3"	60	386,571	6,407	640,725	
4"	18	269,608	14,978	1,497,822	
6"	9	157,310	17,479	1,747,889	
					GPD Average
Total 5/8" x 3/4" and 3/4"	**34,245**	**4,963,321**	**145**	**14,493**	161

City of Norman, Oklahoma
2015 Sewer Connection Fee Study
Wastewater Capital Financing Plan - Consumption by Meter Size

Table: B-15
Schedule: WW Sample Bills
Date: 4/22/2016
Range: WW_Samp

Single Family Residential - Example Monthly Wastewater Bill (4,000 and 5,000 gallons)

FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
0.0%	0.0%	10.0%	0.0%	10.0%	0.0%	10.0%	0.0%	10.0%	0.0%

Meter Size	Sewer Usage (gal)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	CAGR
5/8" & 3/4"	4,000	$20.80	$20.80	$22.88	$22.88	$25.17	$25.17	$27.68	$27.68	$30.45	$30.45	3.89%
5/8" & 3/4"	5,000	$23.50	$23.50	$25.85	$25.85	$28.44	$28.44	$31.28	$31.28	$34.41	$34.41	3.89%
	Residential Rates (per 1,000 gal)											
	Base Rate	$5.00	$5.00	$5.50	$5.50	$6.05	$6.05	$6.66	$6.66	$7.32	$7.32	
	Maintenance Fee	$5.00	$5.00	$5.50	$5.50	$6.05	$6.05	$6.66	$6.66	$7.32	$7.32	
	Volume	$2.70	$2.70	$2.97	$2.97	$3.27	$3.27	$3.59	$3.59	$3.95	$3.95	

APPENDIX C:

CONNECTION CHARGE SURVEY

Single Family Residential

Norman, OK
Development Fee Survey
4/22/2016

Table:	C-1
Schedule:	Survey - SFR
Date:	4/22/2016
Range:	Survey_SFR

Assumptions:	
Tap Size	0.75
Number of Toilets	2
Square Footage	1,500

	Water				Sewer				
City	Meter & Install Cost	Connection Fee	Excise Tax	Total Water Fees	Install Cost	Connection Fee	Excise Tax	Total Sewer Fees	Combined Water and Sewer
Norman, OK	$250	$1,000	$0	$1,250	$0	$275	$1,450	$1,725	$2,975
Broken Arrow, OK	$700	$0	$0	$700	$45	$0	$0	$45	$745
Denton, TX	$2,445	$4,650	$0	$7,095	$2,300	$2,200	$0	$4,500	$11,595
Edmond, OK	$542	$1,106	$0	$1,648	$25	$1,027	$0	$1,052	$2,700
Lawrence, KS	$435	$1,570	$0	$2,005	$0	$2,230	$0	$2,230	$4,235
Lawton, OK	$0	$1,000	$0	$1,000	$0	$1,000	$0	$1,000	$2,000
Midwest City, OK	$917	$0	$0	$917	$75	$0	$0	$75	$992
Moore, OK	$600	$0	$0	$600	$0	$700	$0	$700	$1,300
Oklahoma City, OK	$425	$1,000	$0	$1,425	$0	$200	$0	$200	$1,625
Stillwater, OK	$227	$150	$0	$377	$0	$600	$0	$600	$977
Norman, OK (Proposed)	$250	$3,275	$0	$3,525	$0	$934	$1,450	$2,384	$5,908

Rank	**4**
Proposed Rank	**2**

Multi-Family Residential

Norman, OK
Development Fee Survey
4/22/2016

Table:	C-2
Schedule:	Survey - MFR
Date:	4/22/2016
Range:	Survey_MFR

Assumptions:	
Tap Size	1
Number of Units	4
Number of Toilets per Unit	2
Sewer Diameter	4
Square Footage	6,000

	Water				Sewer				
City	Meter & Install Cost	Connection Fee	Excise Tax	Total Water Fees	Install Cost	Connection Fee	Excise Tax	Total Sewer Fees	Combined Water and Sewer
Norman, OK	$795	$4,000	$0	$4,795	$0	$1,100	$10,450	$11,550	$16,345
Broken Arrow, OK	$815	$0	$0	$815	$45	$0	$0	$45	$860
Denton, TX	$2,475	$7,750	$0	$10,225	$2,300	$5,500	$0	$7,800	$18,025
Edmond, OK	$2,628	$8,708	$0	$11,336	$100	$2,616	$0	$2,716	$14,052
Lawrence, KS	$2,100	$15,680	$0	$17,780	$0	$2,230	$0	$2,230	$20,010
Lawton, OK	$0	$4,000	$0	$4,000	$0	$4,000	$0	$4,000	$8,000
Midwest City, OK	$4,044	$0	$0	$4,044	$300	$0	$0	$300	$4,344
Moore, OK	$2,400	$0	$0	$2,400	$0	$1,232	$0	$1,232	$3,632
Oklahoma City, OK	$465	$1,670	$0	$2,135	$0	$800	$0	$800	$2,935
Stillwater, OK	$1,880	$1,500	$0	$3,380	$0	$4,700	$0	$4,700	$8,080
Norman, OK (Proposed)	$795	$8,732	$0	$9,527	$0	$2,490	$10,450	$12,940	$22,468

Rank	**4**
Proposed Rank	**1**

Commercial

Norman, OK
Development Fee Survey
4/22/2016

Table: C-3
Schedule: Survey - Commercial
Date: 4/22/2016
Range: Survey_Comm

Assumptions:	
Tap Size	2
Number of Employees	30
Number of Toilets	5
GPD over 30/employee	0
Sewer Diameter	6
Square Footage	10,000

	Water				Sewer				
City	Meter & Install Cost	Connection Fee	Excise Tax	Total Water Fees	Install Cost	Connection Fee	Excise Tax	Total Sewer Fees	Combined Water and Sewer
Norman, OK	$1,670	$6,667	$0	$8,337	$0	$1,925	$3,450	$5,375	$13,712
Broken Arrow, OK	$815	$0	$0	$815	$45	$0	$0	$45	$860
Denton, TX	$2,400	$24,800	$0	$27,200	$2,600	$17,600	$0	$20,200	$47,400
Edmond, OK	$1,566	$14,385	$0	$15,951	$25	$12,469	$0	$12,494	$28,445
Lawrence, KS	$525	$12,540	$0	$13,065	$0	$37,260	$0	$37,260	$50,325
Lawton, OK	$0	$4,000	$0	$4,000	$0	$4,000	$0	$4,000	$8,000
Midwest City, OK	$1,992	$75	$0	$2,067	$300	$0	$0	$300	$2,367
Moore, OK	$1,200	$0	$0	$1,200	$0	$100	$0	$100	$1,300
Oklahoma City, OK	$465	$5,330	$0	$5,795	$0	$225	$0	$225	$6,020
Stillwater, OK	$1,013	$2,500	$0	$3,513	$500	$6,675	$0	$7,175	$10,688
Norman, OK (Proposed)	$1,670	$34,929	$0	$36,599	$0	$9,961	$3,450	$13,411	$50,011

Rank 5
Proposed Rank 2