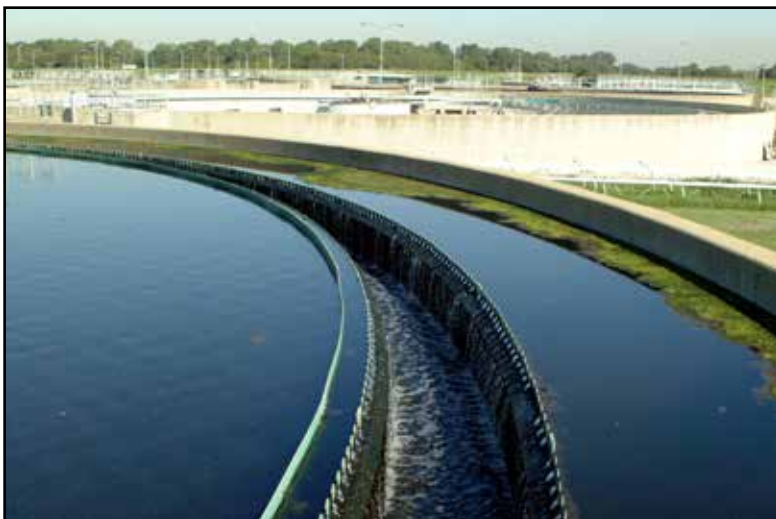


5-Year Capital Improvement Plan

Water & Wastewater

Fiscal Years 2016-2020



OVERVIEW

The Fort Worth Water Department (Utility) is a regional provider of water and sewer services to more than 1.2 million people in Fort Worth and surrounding communities, including 30 wholesale water customers, 23 wholesale wastewater customers and three wholesale reclaimed water customers. Fort Worth's system has a total treatment capacity of 497 million gallons per day (MGD) for drinking water and 166 MGD for wastewater, with five water treatment plants and one reclamation facility. The Fort Worth Utility includes more than 3,386 miles of pipe in the water distribution system, 3,288 miles in the collection system, and a wide-ranging assembly of pump stations, lift stations, and storage facilities to serve its customers. With more than \$3.2 billion in fixed assets, Fort Worth's utility is a very capital-intensive enterprise, which requires continuous investment in extensive above- and below-ground infrastructure.

The Utility is responsible for providing safe and reliable water and wastewater service with environmental integrity. Continued investment in the utility system is a prerequisite for the health and safety of the community it serves as well as economic growth and prosperity in the future. The FY2016-2020 Capital Improvement Plan (CIP) totals \$836,395,924 and funds capital improvements required to ensure system reliability by replacing aging infrastructure and facilities, comply with regulatory requirements, support the City's bond programs for street rehabilitation, meet corporate priorities, and serve anticipated growth in the system.

CATEGORIES

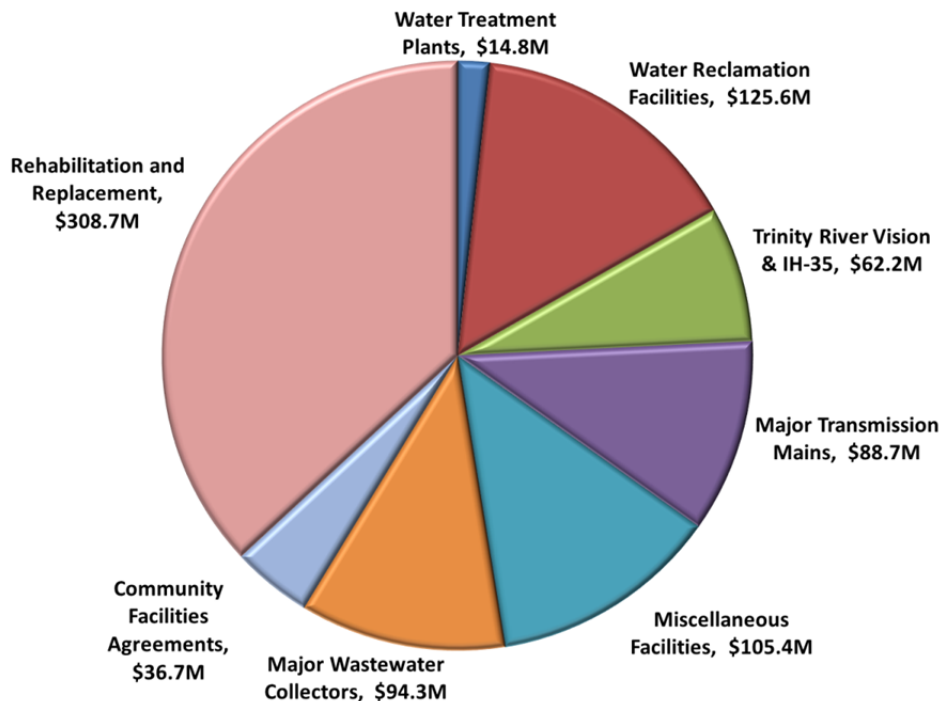
Fort Worth's FY2016-2020 CIP funds infrastructure improvements in its two major utility systems: Water and Wastewater. The FY2016-2020 program includes projects organized into ten categories, consisting of the following:

1. **Water Treatment Plants:** Projects located at the Utility's five water treatment plants (Eagle Mountain, North and South Holly, Rolling Hills and Westside)
2. **Water Reclamation Facilities:** Projects located at the water reclamation facilities (Village Creek and future Mary's Creek)
3. **Trinity River Vision (TRV) and IH-35:** Projects related to the TRV initiative and IH-35 expansion
4. **Major Transmission Mains:** Projects related to transmission mains of 16-inch diameter or larger

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

5. **Miscellaneous Facilities:** Projects related to water storage tanks and pump stations, sewer lift stations and force mains, wholesale customer water and sewer meter stations, and Lake Worth
6. **Major Wastewater Collectors:** Projects related to wastewater collection mains of 24-inch diameter or larger
7. **Community Facilities Agreements:** Projects related to development or redevelopment that include Utility participation to oversize water and/or sewer mains to accommodate anticipated future growth
8. **Rehabilitation and Replacement:** Projects related to water mains smaller than 16 inches in diameter or sewer mains smaller than 24 inches in diameter
9. **Street Maintenance:** Projects replacing water and/or sewer mains under streets to be replaced as part of the City's street bond programs, or other street maintenance and replacement programs
10. **Sanitary Sewer Overflow Initiative:** Projects to reduce and/or eliminate sanitary sewer overflows as required to comply with federal and state regulations

The total \$836.4 million FY2016-2020 CIP investment by category is shown below. The Rehabilitation and Replacement segment reflects the total of the Rehabilitation and Replacement, Street Maintenance and Sanitary Sewer Overflow Initiative categories combined.



CAPITAL IMPROVEMENT STRATEGY

The Utility’s Capital Improvement Strategy is driven by its mission to provide safe and reliable water and wastewater service with environmental integrity, which serves as the basis for the CIP. The CIP is developed from many sources within the Utility and the City, as well as external sources. These sources include:



- **Master Plans (Systems, Operational and Technology):** Master Plans are developed to provide a road map for future facilities to be installed generally within a 20 year timeframe. Plans are updated every ten years. System Master Plans include the Water and Wastewater Master Plans, which project growth-related facility needs in the water and wastewater systems, including anticipated treatment plant expansions. System Master Plans also include the Lake Worth Comprehensive Capital Improvement Implementation Plan, which establishes specific capital improvements in and around Lake Worth. Examples of operational and technology-focused master plans include the Bio-Solids Master Plan, which recommends future bio-solids disposal processes, and the Water Information Technology (IT) Master Plan, which identifies future IT requirements and needs.
- **Operational Enhancement:** The Utility’s staff continuously review and monitor operations and customer service activities, and develop initiatives for enhanced customer service or operational cost reductions. The Advanced Metering Infrastructure project and the continuation of the Energy Savings Performance Project at the Village Creek Water Reclamation Facility are examples of this type of enhancement.
- **Corporate Priorities:** The Utility provides water and sewer improvements or relocation projects in support of City Council-approved priority programs for the development of the city. Examples of these types of programs include the Trinity River Vision initiative and the Cultural District improvements.
- **Development Agreements/Community Facilities Agreements:** The Policy for the Installation of Community Facilities approved by the City Council provides for the Utility’s

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

participation in upsizing water and sewer facilities from the size required to provide service to a proposed development, to the size required by the Water and/or Wastewater Master Plan to provide service for future growth in the area. The Utility's staff remain in regular contact with the development community to monitor upcoming needs and priorities.

- **Legislative and Regulatory Mandates:** The Federal Government through the U.S. Environmental Protection Agency (USEPA) and the Texas Legislature through the Texas Commission on Environmental Quality (TCEQ) develop process, operational and maintenance requirements which must be met within regulatory timelines. While normally related to treatment plant processes, the requirements also include the Sanitary Sewer Overflow Initiative to reduce sewer overflows.
- **Condition Assessment and Maintenance History:** Utility staff routinely review the operation and maintenance records of water and sewer mains and facilities for rehabilitation or replacement needs due to high maintenance costs or pending failure. These types of projects are identified through facilities assessment studies, programs such as the Interceptor Condition Assessment Program and the Water Condition Assessment Program, and staff review of maintenance records to identify infrastructure that can no longer be maintained effectively.
- **Street Maintenance:** In support of the City's street bond programs and other street maintenance and replacement projects, the Utility replaces water and sewer lines located under the streets based on maintenance history, pipeline materials, and age.

CIP Priority Criteria

The development of the five-year CIP is based on established priorities using available debt and cash funding available for each year within the five-year program. Factors used in developing CIP priorities include: impacts to public health and safety or those requiring emergency response; regulatory or legal requirements; City Charter or contractual obligations; maintaining infrastructure integrity; balancing project benefits and risks with project costs; eliminating or limiting negative impacts to the general public; providing a beneficial effect on the lives of a significant segment of the population; and addressing corporate priorities.



CAPITAL REVENUE SOURCES AND STRATEGY

The Utility has identified funding for the \$836.4 million, five-year CIP from a variety of revenue sources, including cash from annual rate revenues and funds remaining from legacy water and sewer capital projects, the Water & Sewer Revenue Bond program, multiple Texas Water Development Board programs, gas well revenues and impact fees.

Cash and Legacy Water/Sewer Capital Projects

Cash is budgeted each year and recovered through the rates charged to the Utility's ratepayers. Cash budgeted for capital projects in 2016 totals \$46.8 million and is targeted primarily to fund rehabilitation and replacement projects. Over the next five years the Utility plans to increase its cash investment in the CIP each year to a total of \$71.1 million in 2020. In addition, the Utility will use \$21.3 million in funds remaining from previously completed water and sewer capital projects over the five-year period.

Water and Sewer Revenue Bond Program

Enacted in 1991, the Water and Sewer Revenue Bond program enables the Utility to invest in its infrastructure and facilities through the issuance of long-term debt. Previously incurred debt will decrease significantly over the next five years, allowing the capacity for the Utility to issue additional debt over the five-year period with no increase in rates resulting from current borrowing plans.

Texas Water Development Board – Drinking Water/Clean Water State Revolving Loan Funds

The Texas Water Development Board offers low-cost financial assistance for the planning, design, and construction of water and sewer infrastructure to utilities under its Drinking Water and Clean Water State Revolving Fund programs to fund large facility projects. Fort Worth has used the SRF programs' below-market interest rate loans to fund eligible projects in the past and will continue to take advantage of these cost-effective programs as needs arise. The CIP includes \$37.1 million in 2016 for two projects.

Texas Water Development Board – State Water Implementation Revenue Fund for Texas

Passed by the Texas Legislature and approved by Texas voters through a constitutional amendment, the State Water Implementation Revenue Fund for Texas (SWIRFT) program assists communities in developing and optimizing water supplies and conservation initiatives at cost-effective rates. Fort Worth is using SWIRFT funds to develop and implement the Advanced Metering Infrastructure project over the next five years, using \$12.3 million of SWIRFT funds in 2016-2017 and \$63.0 million in 2018-2020.

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

Gas Well Revenues

In 2005, the City Council adopted the Gas Well Revenue policy to establish city-wide spending parameters for gas well revenues. The Utility has allowed gas well drilling at several of its facilities that have resulted in revenue available to fund capital projects. The CIP uses existing gas well revenues of \$2.7 million and assumes projected gas well revenues of \$7.2 million in 2016, which will be used to fund eligible projects in the Lake Worth Comprehensive Capital Improvement Implementation Plan (Lake Worth CIP).

Impact Fees

The Utility has collected water and wastewater impact fees since the early 1990s to fund growth-related infrastructure. In compliance with Chapter 395 of the Local Government Code, the Utility regularly develops land use assumptions and a capital improvements plan of impact fee-allowable capital projects which will serve projected growth over a ten-year planning horizon. Updates are prepared every three to five years and impact fees will be used to fund these plan updates.

Summary of Projected Capital Investment by Revenue Source

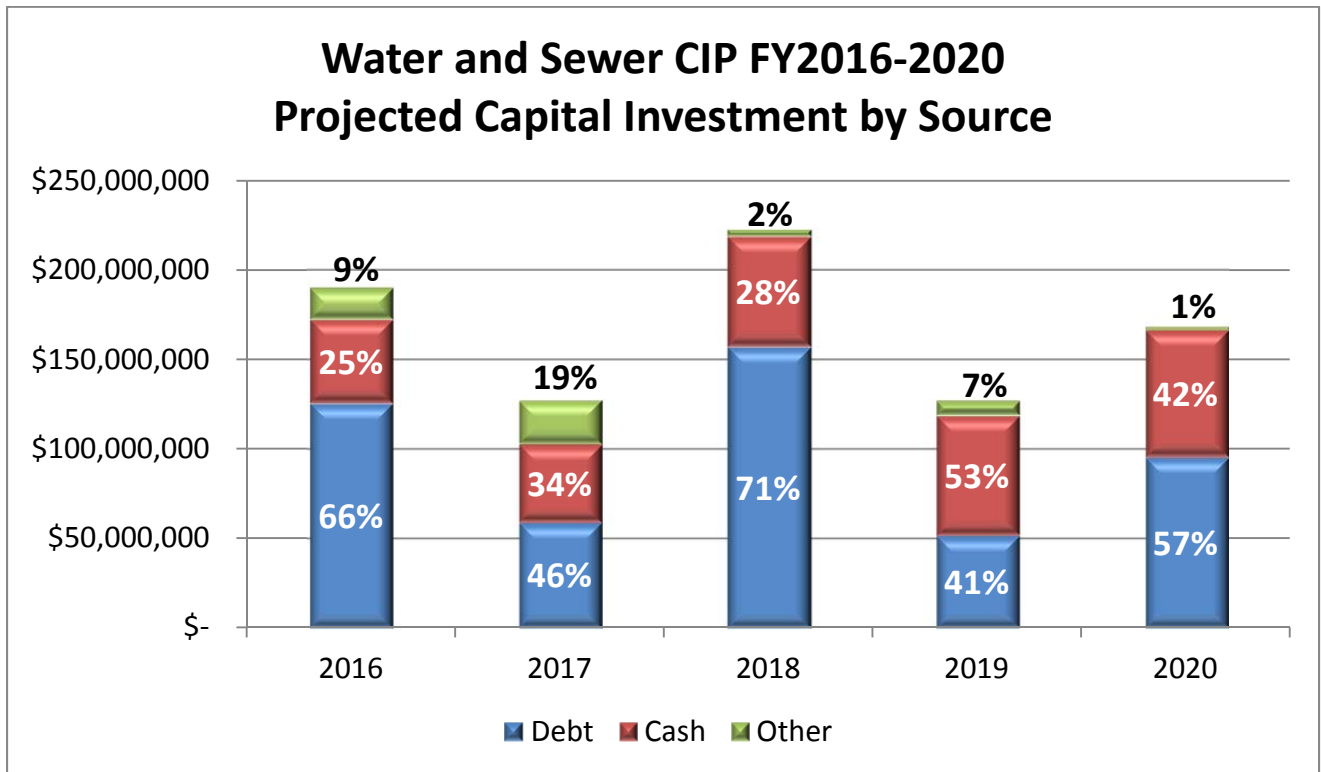
The following table provides an overview of identified revenue sources to fund the FY2016-2020 Water and Wastewater CIP. The table also reflects the anticipated appropriation schedule of planned projects.

Table 1

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Projected Funding Sources						
Revenue Bonds	\$ 67,097,885	\$ 55,922,689	\$ 70,596,692	\$ 51,748,070	\$ 69,331,554	\$ 314,696,890
Gas Well Revenues	\$ 9,849,400	\$ 14,850,000	\$ -	\$ 6,000,000	\$ -	\$ 30,699,400
Cash	\$ 46,783,900	\$ 43,799,000	\$ 61,599,247	\$ 67,100,000	\$ 71,100,000	\$ 290,382,147
Sewer Impact Fees	\$ 150,000	\$ 250,000	\$ -	\$ 2,500,000	\$ 950,000	\$ 3,850,000
Water Impact Fees	\$ 150,000	\$ -	\$ -	\$ -	\$ 650,000	\$ 800,000
TWDB State Revolving Loan Fund	\$ 37,134,467	\$ -	\$ -	\$ -	\$ -	\$ 37,134,467
TWDB SWIRFT	\$ 12,301,421	\$ -	\$ 63,000,000	\$ -	\$ -	\$ 75,301,421
Trinity River Vision	\$ 9,150,400	\$ 3,192,000	\$ 23,588,000	\$ -	\$ 26,323,000	\$ 62,253,400
Legacy Water/Sewer Capital Fund	\$ 7,678,199	\$ 9,600,000	\$ 4,000,000	\$ -	\$ -	\$ 21,278,199
Total Sources	\$ 190,295,672	\$ 127,613,689	\$ 222,783,939	\$ 127,348,070	\$ 168,354,554	\$ 836,395,924

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

The following chart summarizes the Utility’s projected investment in the CIP by revenue source. Further details of the planned projects are provided in subsequent sections for each category.



OPERATIONS AND MAINTENANCE IMPACT

Most of the improvements in the FY2016-2020 Water and Wastewater CIP are directed toward improving existing facilities and infrastructure. These improvements are intended to result in fewer maintenance issues and increased efficiencies and should not increase the operational costs of the Utility. No additional staff or maintenance costs are anticipated to result from the FY2016 CIP improvements.



PROGRAM SUMMARY BY CATEGORY

1. WATER TREATMENT PLANTS

All projects to be performed at the Utility’s five water treatment plants (Eagle Mountain, North and South Holly, Rolling Hills and Westside) are outlined in the chart below. These projects may include plant expansion projects to accommodate growth; regulatory required process additions or modifications; and rehabilitation or replacement of existing older and/or obsolete equipment. The total estimated spend over the next five years is \$14.8 million.

Program Summary: Water Treatment Plants

Table 2

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Projects						
Eagle Mountain Water Treatment Plant Expansion	\$ -	\$ -	\$ -	\$ -	\$ 5,000,000	\$ 5,000,000
North Holly Water Treatment Plant Sludge Collection System	\$ -	\$ 500,000	\$ 2,500,000	\$ -	\$ -	\$ 3,000,000
Rolling Hills Water Treatment Plant - Rehab & Replace	\$ 6,000,000	\$ -	\$ -	\$ -	\$ -	\$ 6,000,000
Westside Water Treatment Plant Expansion	\$ -	\$ -	\$ -	\$ -	\$ 500,000	\$ 500,000
Zebra Mussel Raw Water Chlorination Station	\$ -	\$ -	\$ -	\$ -	\$ 250,000	\$ 250,000
Total	\$ 6,000,000	\$ 500,000	\$ 2,500,000	\$ -	\$ 5,750,000	\$ 14,750,000
Funding Sources						
Revenue Bonds	\$ 6,000,000	\$ 500,000	\$ 2,500,000	\$ -	\$ 5,250,000	\$ 14,250,000
Water Impact Fees	\$ -	\$ -	\$ -	\$ -	\$ 500,000	\$ 500,000
Total Sources	\$ 6,000,000	\$ 500,000	\$ 2,500,000	\$ -	\$ 5,750,000	\$ 14,750,000

FY2016 Project Descriptions:

- Rolling Hills Water Treatment Plant Rehabilitation and Replacement:** This project consists of the replacement of the main switchgear in the old High Service Pump Station (HSPS) at the Rolling Hills Water Treatment Plant (RHWTP), along with the rehabilitation/replacement of associated electrical equipment and electrical panels. The RHWTP plant staff have indicated that the old HSPS switchgear has reached the end of its useful life, making it increasingly difficult to maintain, and is becoming a safety issue.

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

2. WATER RECLAMATION FACILITIES

All projects at the Village Creek Water Reclamation Facility and projects for the future Mary's Creek Water Reclamation Facility are outlined in the chart below. These projects may include plant expansion projects for growth, regulatory required process additions or modifications, process upgrades and modifications for plant efficiency improvement, and rehabilitation or replacement of existing older and/or obsolete equipment. The total estimated spend over the next five years is \$125.6 million.

Program Summary: Water Reclamation Facilities

Table 3

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Projects						
Village Creek - Bar Screen Bldg #3 Modification	\$ -	\$ -	\$ 500,000	\$ 500,000	\$ -	\$ 1,000,000
Village Creek - Bio - Solids Master Plan Implementation	\$ 2,510,000	\$ -	\$ 11,500,000	\$ -	\$ 25,500,000	\$ 39,510,000
Village Creek - Chlorine Conversion & Enclosure Project	\$ -	\$ 750,000	\$ 1,500,000	\$ 1,500,000	\$ -	\$ 3,750,000
Village Creek - Dewatering Facility	\$ 650,000	\$ -	\$ 5,000,000	\$ -	\$ -	\$ 5,650,000
Village Creek - Energy Savings Performance Contract	\$ -	\$ 12,050,000	\$ -	\$ -	\$ -	\$ 12,050,000
Village Creek - MCC Replacement	\$ 612,800	\$ 2,250,000	\$ 1,000,000	\$ -	\$ -	\$ 3,862,800
Village Creek - Primary Clarifiers 1-12 Replacement	\$ 250,000	\$ 1,650,000	\$ -	\$ 7,100,000	\$ 6,000,000	\$ 15,000,000
Village Creek - Facilities Plan	\$ -	\$ -	\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
Village Creek - Peak Flow Diversion Structure	\$ 30,184,467	\$ -	\$ -	\$ -	\$ -	\$ 30,184,467
Village Creek Water Reclamation Facility Minor Improvements	\$ 780,000	\$ 500,000	\$ 700,000	\$ -	\$ -	\$ 1,980,000
Village Creek - Thickener Improvements	\$ 1,000,000	\$ -	\$ -	\$ 8,800,000	\$ -	\$ 9,800,000
Mary's Creek Water Reclamation Facility	\$ -	\$ 300,000	\$ -	\$ 1,500,000	\$ -	\$ 1,800,000
Total	\$ 35,987,267	\$ 17,500,000	\$ 20,200,000	\$ 20,400,000	\$ 31,500,000	\$ 125,587,267
Funding Sources						
Revenue Bonds	\$ 6,152,800	\$ 5,150,000	\$ 20,200,000	\$ 11,900,000	\$ 31,500,000	\$ 74,902,800
TWDB State Revolving Loan Fund	\$ 28,184,467	\$ -	\$ -	\$ -	\$ -	\$ 28,184,467
Cash	\$ -	\$ 300,000	\$ -	\$ -	\$ -	\$ 300,000
Legacy Water/Sewer Capital Fund	\$ 1,650,000	\$ -	\$ -	\$ -	\$ -	\$ 1,650,000
Sewer Impact Fees	\$ -	\$ -	\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
Gas Well Revenues	\$ -	\$ 12,050,000	\$ -	\$ 6,000,000	\$ -	\$ 18,050,000
Total Sources	\$ 35,987,267	\$ 17,500,000	\$ 20,200,000	\$ 20,400,000	\$ 31,500,000	\$ 125,587,267

FY2016 Project Descriptions:

- **Village Creek – Bio-Solids Master Plan Implementation:** This funding provides for two projects: The first project is the installation of additional liquid bio-solids storage tanks along with the necessary pumps and odor control equipment at the sludge only landfill (SOL). The additional bio-solids storage tanks were identified in the Bio-Solids Master Plan to allow on-site storage during wet weather events and to allow maintenance of dewatering equipment. The second project is the installation of bio-solids dryer equipment. The bio-solids dryer process was identified in the Bio-Solids Master Plan as a long-term alternative to land application and an alternative revenue source as dried bio-solids are a marketable commodity.
- **Village Creek – Dewatering Facility:** This project consists of the installation of additional dewatering equipment at the Bio-Solids Dewatering Facility. This project was identified by the Bio-Solids Master Plan to provide backup for maintenance and operational flexibility.
- **Village Creek – MCC Replacement:** This project consists of the replacement of existing obsolete, corroded, undersized, or underutilized switchgear, transformers, electrical panels, and other electrical equipment. Electrical equipment was identified in the Arc-Flash Study for replacement due to safety and operational issues.
- **Village Creek Primary Clarifiers 1-12 Replacement:** This project will replace the 12 small primary clarifiers and provide grit removal. The small primary clarifiers were identified for replacement in the Facilities Assessment Study due to high maintenance costs and difficulty in keeping them operational. The requirement for grit removal has been identified in previous facilities studies to minimize the operation and maintenance costs associated with pumping grit within the plant.



Bio-solids dewatering equipment

- **Village Creek Peak Flow Diversion**

Structure: This project consists of the installation of peak flow storage basins at the SOL along with an 84-inch gravity main from the VCWRF site to the SOL, modifications to the high rate clarifier, concrete control and diversion structures, and connection to existing primary effluent pump stations. The Wastewater Master Plan identified the need for storage of wastewater when the flow into the plant exceeds the plant capacity in peak wet weather events. Construction of the peak flow basins could prevent the plant from having to expand further until 2025.



Site of future Peak Flow Diversion Structure

- **Village Creek Minor Improvements:** This funding provides for several small projects at the Village Creek Water Reclamation Facility. These include equipment modifications, and rehabilitation and facility installation projects requested by plant staff to resolve various issues and needs.
- **Village Creek – Thickener Improvements:** The project consists of replacement of the existing dissolved air flotation sludge thickeners (DAFTs) and modification or rehabilitation of the existing sludge thickener clarifiers. The Facilities Assessment Study identified the need to replace the inefficient DAFTs due to high maintenance costs and to replace or modify other sludge thickening processes to obtain a higher percentage of solids for the digester process.



Village Creek Water Reclamation Facility

3. TRINITY RIVER VISION AND IH-35

Outlined in the chart below is funding for water and sewer work for the regional Trinity River Vision (TRV) and IH-35 Expansion projects. The water and sewer portion of the TRV program relocates water and sewer lines that are in conflict with the U.S. Army Corps of Engineers (USACE) Trinity River Vision-Central City flood control project (costs reimbursable) and extending or increasing the size of water and sewer mains to address City operational or future development requirements (costs not reimbursable). The TRV program includes a master plan adopted by the City Council and is in partnership with the Tarrant Regional Water District (TRWD), Trinity River Vision Authority, USACE, Tarrant County, the Texas Department of Transportation (TxDOT) and Streams and Valley, Inc. The City will be reimbursed for a portion of the costs as defined in the Interlocal Cooperative Agreement with the TRWD adopted by the City Council. The relocation of water and sewer lines in conflict with the expansion/widening of IH-35 is being performed in partnership with TxDOT. TxDOT is widening IH-35 from Spur 280 north to Eagle Parkway, requiring the relocation of water and sewer mains in conflict with the project. The relocations, with the exception of City betterments, are partially reimbursable. The total estimated spend over the next five years is \$62.2 million.

Program Summary: Trinity River Vision and IH-35

Table 4

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Projects						
IH-35 Expansion - Water and Sewer	\$ 2,295,000	\$ -	\$ -	\$ -	\$ -	\$ 2,295,000
Trinity River Vision Program - Water and Sewer	\$ 6,855,400	\$ 3,192,000	\$ 23,588,000	\$ -	\$ 26,323,000	\$ 59,958,400
Total	\$ 9,150,400	\$ 3,192,000	\$ 23,588,000	\$ -	\$ 26,323,000	\$ 62,253,400
Funding Sources						
Trinity River Vision	\$ 9,150,400	\$ 3,192,000	\$ 23,588,000	\$ -	\$ 26,323,000	\$ 62,253,400
Total Sources	\$ 9,150,400	\$ 3,192,000	\$ 23,588,000	\$ -	\$ 26,323,000	\$ 62,253,400



TRV Program - Water and Sewer Relocations

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

4. MAJOR TRANSMISSION MAINS

Projects related to transmission mains of 16-inch diameter or larger are outlined in the table below. Projects are driven by growth and regional initiatives. The total estimated spend over the next five years is \$88.7 million.

Program Summary: Major Transmission Mains

Table 5

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Projects						
24" Holly Water Main - Churchill Road	\$ -	\$ 307,200	\$ -	\$ 2,559,600	\$ -	\$ 2,866,800
24" Northside IV Water Line from Eagle Mountain Water Treatment Plant	\$ -	\$ 1,450,000	\$ 5,425,000	\$ -	\$ 5,425,000	\$ 12,300,000
24" Northside IV Water Line - Along Hwy 287	\$ -	\$ 280,000	\$ -	\$ -	\$ 2,800,000	\$ 3,080,000
54" NSIII Water Line - EMWTP to Hicks Field	\$ -	\$ -	\$ -	\$ 733,000	\$ -	\$ 733,000
Cultural District - Water Line Replace	\$ 695,000	\$ 1,848,000	\$ 6,646,000	\$ 168,000	\$ 7,876,000	\$ 17,233,000
Northside II 48" Water Main	\$ 14,644,800	\$ 12,000,000	\$ -	\$ -	\$ -	\$ 26,644,800
Relocation of Water Main for East Rosedale Street	\$ 4,850,000	\$ -	\$ -	\$ -	\$ -	\$ 4,850,000
Major Transmission Mains Other Improvements	\$ 50,000	\$ 1,492,000	\$ 265,188	\$ 2,651,880	\$ -	\$ 4,459,068
Water Line Replace - Southside Medical District	\$ 1,291,000	\$ 1,265,000	\$ 1,150,000	\$ 1,000,000	\$ -	\$ 4,706,000
36" NSII Water Main - Northeast Extension	\$ 988,800	\$ 3,535,002	\$ -	\$ -	\$ -	\$ 4,523,802
SH 114 Water Main Relocation	\$ 2,542,900	\$ 600,000	\$ 4,000,000	\$ -	\$ -	\$ 7,142,900
Water Master Plan Amendment	\$ 146,499	\$ -	\$ -	\$ -	\$ -	\$ 146,499
Total	\$ 25,208,999	\$ 22,777,202	\$ 17,486,188	\$ 7,112,480	\$ 16,101,000	\$ 88,685,869
Funding Sources						
Revenue Bonds	\$ 21,530,800	\$ 20,912,202	\$ 12,336,188	\$ 6,112,480	\$ 16,101,000	\$ 76,992,670
Cash	\$ -	\$ 1,265,000	\$ 1,150,000	\$ 1,000,000	\$ -	\$ 3,415,000
Legacy Water/Sewer Capital Fund	\$ 3,678,199	\$ 600,000	\$ 4,000,000	\$ -	\$ -	\$ 8,278,199
Total Sources	\$ 25,208,999	\$ 22,777,202	\$ 17,486,188	\$ 7,112,480	\$ 16,101,000	\$ 88,685,869

FY2016 Project Descriptions:

- Cultural District – Water Line Replacements:** This multi-phase project replaces and relocates the existing undersized water line in the Cultural District in conflict with new facilities or in advance of new road construction. The Cultural District Improvements are a City Council priority.

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

- **Northside II 48-inch Water Main:** This project consists of a 48-inch water main from the Caylor Tank site to existing water mains southwest of the city of Saginaw. This project was identified in the Water Master Plan to provide service to far northeast Fort Worth and its water wholesale customers.
- **Relocation of Water Main for East Rosedale Street:** This project consists of the relocation of water and sewer mains in East Rosedale Street from Miller Avenue to IH-820 for the proposed reconstruction of East Rosedale Street. The East Rosedale Street project is a TxDOT project authorized by the City Council.
- **Major Transmission Mains Other Improvements:** This funding provides for smaller major transmission main projects. Some have been identified in the Water Master Plan and some have been identified by Utility staff as requiring relocation for street projects or rehabilitation/replacement.
- **Water Line Replacement – Southside Medical District:** This project includes the replacement of deteriorated water and sewer lines in advance of street reconstruction projects in the Southside Medical District. Fort Worth South, Inc., has funded the Near Southside Medical District street repair and reconstruction program to provide streetscape and public right-of-way improvements.
- **36-Inch Northside II Water Main – Northeast Extension:** The project provides for the Northside II Water Transmission Main along Alliance Gateway Freeway (SH 170) from the existing Northside II 30-inch water transmission main crossing Independence Parkway to Denton Highway (US 377). This project is identified in the update to the Water Master Plan due to recent growth in the Alliance Gateway Freeway corridor from the City of Fort Worth and nearby wholesale water customers, which has accelerated the need for this water main.
- **SH 114 Water Main Relocation:** This project consists of the relocation of water mains and appurtenances on SH 114 at the intersection of FM 156 and SH 114 to accommodate TxDOT's road widening project.
- **Water Master Plan Amendment:** This project consists of an amendment to the existing contract to update the Westside and Southside Pressure Plane Water Master Plan to include the Eastside and Holly Pressure Planes.

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

5. MISCELLANEOUS FACILITIES

Miscellaneous facility projects are outlined in the table below and include water storage tanks and pump stations, sewer lift stations and force mains, wholesale customer water and wastewater meter stations, and all Lake Worth capital projects. New facility projects or expansion projects are identified in the Water and Wastewater Master Plans to support growth within the city. Rehabilitation or replacement projects for existing facilities have been identified by City staff during periodic inspections or evaluations. Lake Worth projects are part of the City Council-approved Lake Worth CIP program funded primarily with gas well revenue. The total estimated spend over the next five years is \$105.4 million.

Program Summary: Miscellaneous Facilities

Table 6

Projects	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Advanced Metering Infrastructure (AMI)	\$ 12,301,421	\$ -	\$ 63,000,000	\$ -	\$ -	\$ 75,301,421
Bonds Ranch Lift Stations	\$ -	\$ -	\$ -	\$ -	\$ 600,000	\$ 600,000
Caylor Ground Storage Tank	\$ 175,000	\$ 1,000,000	\$ -	\$ -	\$ -	\$ 1,175,000
Denton Creek Lift Stations and Force Mains	\$ -	\$ 300,000	\$ 1,000,000	\$ -	\$ -	\$ 1,300,000
Edgecliff Sewer Meter Station	\$ 810,000	\$ -	\$ -	\$ -	\$ -	\$ 810,000
Jenkin Hts Lift Station and Force Main	\$ 200,000	\$ 2,200,000	\$ -	\$ -	\$ -	\$ 2,400,000
Tarleton Regional Lift Station	\$ -	\$ 250,000	\$ 2,500,000	\$ -	\$ -	\$ 2,750,000
Lake Worth Comanche Crk. Drainage	\$ -	\$ 600,000	\$ -	\$ -	\$ -	\$ 600,000
Lake Worth Hike & Bike Trail	\$ 6,268,400	\$ -	\$ -	\$ -	\$ -	\$ 6,268,400
Love Circle Water and Sewer	\$ 3,106,000	\$ -	\$ -	\$ -	\$ -	\$ 3,106,000
Northside Pump Station Expansion to 75 MGD	\$ -	\$ 200,000	\$ 1,000,000	\$ -	\$ -	\$ 1,200,000
Sun Country Elevated Storage Tank Rehabilitation	\$ 1,600,000	\$ -	\$ -	\$ -	\$ -	\$ 1,600,000
Walsh Ranch Lift Station & Force Mains	\$ -	\$ -	\$ -	\$ -	\$ 200,000	\$ 200,000
Westside Storage Tanks	\$ 950,000	\$ 300,000	\$ 1,500,000	\$ -	\$ 1,000,000	\$ 3,750,000
Lake Worth Dredging	\$ 275,000	\$ -	\$ -	\$ -	\$ -	\$ 275,000
Calmont Tank Rehab	\$ -	\$ -	\$ 150,000	\$ 1,000,000	\$ -	\$ 1,150,000
Eagle Mountain Water Treatment Plant Vulnerability Assessment	\$ 300,000	\$ 900,000	\$ -	\$ -	\$ -	\$ 1,200,000
Walsh Ranch Pump Station	\$ 1,729,685	\$ -	\$ -	\$ -	\$ -	\$ 1,729,685
Total	\$ 27,715,506	\$ 5,750,000	\$ 69,150,000	\$ 1,000,000	\$ 1,800,000	\$ 105,415,506

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Funding Sources						
Revenue Bonds	\$ 5,264,685	\$ 2,700,000	\$ 6,150,000	\$ 1,000,000	\$ 1,000,000	\$ 16,114,685
Gas Well Revenues	\$ 9,849,400	\$ 2,800,000	\$ -	\$ -	\$ -	\$ 12,649,400
Sewer Impact Fees	\$ -	\$ 250,000	\$ -	\$ -	\$ 800,000	\$ 1,050,000
TWDB SWIRFT	\$ 12,301,421	\$ -	\$ 63,000,000	\$ -	\$ -	\$ 75,301,421
Legacy Water/Sewer Capital Fund	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ 300,000
Total Sources	\$ 27,715,506	\$ 5,750,000	\$ 69,150,000	\$ 1,000,000	\$ 1,800,000	\$ 105,415,506

FY2016 Project Descriptions:

- Advanced Metering Infrastructure (AMI):** This multi-phase project is a water conservation initiative approved by the City Council using the State Water Implementation Revenue Fund for Texas (SWIRFT) program. The AMI system will result in improved operational efficiencies including reduced apparent water loss (improved meter accuracy, early identification of water theft), real water loss (leaks, flushing), and reduced operating costs. The project includes the replacement of all existing water meters with AMI-capable devices and infrastructure to transmit data readings. The AMI project also includes data network interface and system integration, meter data management system licensing and hardware, customer web-portal design and implementation, distribution system leak detection sensors/monitors, consulting services, staff training and extensive public education and outreach.
- Caylor Ground Storage Tank:** This project consists of the rehabilitation and re-painting of the existing Caylor Ground Storage Tank (located in north Fort Worth, west of Keller). This tank was identified as requiring rehabilitation and re-painting after an annual inspection.
- Edgecliff Sewer Meter Station:** This project replaces the existing Edgecliff sewer meter station. The existing meter station is undersized and does not measure high flows, thereby causing the Utility to lose revenue.
- Jenkins Heights Lift Station and Force Main:** This project will install a sewer main from the existing Jenkins Heights lift station to the Meadow Lakes lift station, allowing the Jenkins Heights lift station to be abandoned. The Jenkins Heights force main will be relocated out of residents' back yards to John's Way and Shadydell Road. The Jenkins Heights lift station and force main project was identified in the Lake Worth CIP adopted by the City Council and funded with gas well revenues from Lake Worth.
- Lake Worth Hike and Bike Trail:** This project consists of the installation of a hike and bike trail from the existing trail along the Trinity River to the Lake Worth Dam and along

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

the east side of the lake to IH-820. This is Phase 1 of a multi-phase project. The Lake Worth Hike and Bike Trail project was identified in the Lake Worth CIP adopted by the City Council and funded with gas well revenues from Lake Worth. This project will be managed by the Park and Recreation Department.

- **Love Circle Water and Sewer:** This project provides for the installation of a water and sewer system to provide service to the residents along Love Circle (located on the west side of Lake Worth, north of SH 199). The Love Circle Water and Sewer project was identified in the Lake Worth CIP adopted by the City Council and funded with gas well revenues from Lake Worth.
- **Sun Country Elevated Storage Tank Rehabilitation:** This project consists of the rehabilitation and re-painting of the Sun Country Elevated Storage Tank located in southwest Fort Worth. This tank was identified as requiring rehabilitation and re-painting after an annual inspection.
- **Westside Storage Tanks:** This funding consists of several water storage tank projects serving the west and southwest service area, and were identified in the Water Master Plan to provide service where development is occurring.
- **Lake Worth Dredging:** This project is the last of the Lake Worth dredging around dock areas that will be performed as part of the previously completed large dredging project. The Lake Worth dredging projects were identified in the Lake Worth CIP adopted by the City Council and funded with gas well revenues from Lake Worth.
- **Eagle Mountain Water Treatment Plant Vulnerability Assessment Implementation:** This project includes security improvements and the upgrade of the plant notification system.
- **Walsh Ranch Pump Station:** This project was identified by the Water Master Plan to provide water service to portions of the Morningstar and Walsh Ranch developments in west Fort Worth. The pump station will connect a water main being installed as part of a Community Facilities Agreement.



Lake Worth Dredging project

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

6. MAJOR WASTEWATER COLLECTORS

Projects related to transmission mains of 24-inch diameter or larger are outlined in the table below. Projects are driven by growth and rehabilitation and replacement needs. The total estimated spend over the next five years is \$94.3 million.

Program Summary: Major Wastewater Collectors

Table 7

Projects	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Eagle Mountain to Big Fossil Diversion	\$ -	\$ -	\$ -	\$ 5,000,000	\$ -	\$ 5,000,000
Little Fossil Creek Interceptor Improvements	\$ -	\$ -	\$ 2,000,000	\$ -	\$ -	\$ 2,000,000
Main 199 West Fork Basin Parallel Relief Sewer Line	\$ -	\$ -	\$ 600,000	\$ 3,440,640	\$ -	\$ 4,040,640
Main 257 Village Creek Basin Parallel Relief Sewer	\$ 1,316,300	\$ 3,430,487	\$ 4,740,504	\$ 3,294,950	\$ 2,780,554	\$ 15,562,795
Main 272 Replacement Clear Fork Sewer	\$ -	\$ -	\$ -	\$ -	\$ 1,400,000	\$ 1,400,000
Main 275 Sycamore Creek Basin Parallel Relief Sewer	\$ -	\$ 3,240,000	\$ -	\$ -	\$ -	\$ 3,240,000
Main 280/338 West Fork Rehabilitation	\$ 750,000	\$ 1,500,000	\$ -	\$ -	\$ -	\$ 2,250,000
Main 295 Village Creek Basin Replacement Sewer	\$ -	\$ -	\$ -	\$ -	\$ 900,000	\$ 900,000
Main 34, 100 and D100 Downtown Central District Sewer Replacements	\$ -	\$ 2,500,000	\$ -	\$ -	\$ -	\$ 2,500,000
Main 347/386 Upper Big Fossil Parallel Relief Sewer	\$ -	\$ -	\$ 6,000,000	\$ -	\$ -	\$ 6,000,000
Main 365 Marine Creek Basin Parallel Relief Sewer	\$ -	\$ 3,540,000	\$ -	\$ 2,000,000	\$ 3,000,000	\$ 8,540,000
Main 402 Big Fossil Parallel Relief Sewer Part 1	\$ 9,950,000	\$ -	\$ -	\$ -	\$ -	\$ 9,950,000
Main 402 Big Fossil Parallel Relief Sewer Part 2	\$ 1,350,000	\$ -	\$ -	\$ 9,500,000	\$ -	\$ 10,850,000
Main 503 Village Creek Sewer Main Rehabilitation	\$ 490,000	\$ 950,000	\$ 4,800,000	\$ -	\$ -	\$ 6,240,000
Major Wastewater Collectors Other Improvements	\$ 250,000	\$ -	\$ 1,770,000	\$ -	\$ 900,000	\$ 2,920,000
Upper Clear Fork Interceptor Improvements	\$ -	\$ 3,000,000	\$ 3,000,000	\$ -	\$ -	\$ 6,000,000
Walsh Ranch Sewer Extension	\$ -	\$ 2,000,000	\$ -	\$ -	\$ -	\$ 2,000,000
Sewer Extension - Sandy Lane/Trice Court	\$ -	\$ 24,000	\$ 239,247	\$ -	\$ -	\$ 263,247
Main 389 Sycamore Creek Relief Interceptor	\$ 1,050,000	\$ -	\$ -	\$ 3,000,000	\$ -	\$ 4,050,000
Chisholm Trail Parkway Main 311 Abandonment and Lift Station	\$ 600,000	\$ -	\$ -	\$ -	\$ -	\$ 600,000
Total	\$ 15,756,300	\$ 20,184,487	\$ 23,149,751	\$ 26,235,590	\$ 8,980,554	\$ 94,306,682

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Funding Sources						
Revenue Bonds	\$ 4,756,300	\$ 20,160,487	\$ 22,910,504	\$ 26,235,590	\$ 8,980,554	\$ 83,043,435
TWDB State Revolving Loan Fund	\$ 8,950,000	\$ -	\$ -	\$ -	\$ -	\$ 8,950,000
Cash	\$ -	\$ 24,000	\$ 239,247	\$ -	\$ -	\$ 263,247
Legacy Water/Sewer Capital Fund	\$ 2,050,000	\$ -	\$ -	\$ -	\$ -	\$ 2,050,000
Total Sources	\$ 15,756,300	\$ 20,184,487	\$ 23,149,751	\$ 26,235,590	\$ 8,980,554	\$ 94,306,682

FY2016 Project Descriptions:

- Main 257 Village Creek Basin Parallel Relief Sewer:** This is a multi-phase project to install a 54-inch parallel relief main from the south end of Lake Arlington to east of the city of Everman. The Wastewater Master Plan identified the need for this project.
- Main 280/338 West Fork Rehabilitation:** This is a multi-phase project to rehabilitate the Main 280 (90-inch) and Main 338 (96-inch) parallel lines from Greenway Park to the Village Creek Water Reclamation Facility. Evaluation of the mains identified severe corrosion at junction boxes/concrete access structures and immediately adjacent pipelines. To minimize costs, only structures and pipelines with identified corrosion problems will be rehabilitated at this time.
- Main 402 Big Fossil Parallel Relief Sewer:** This is a multi-phase project to construct a 66-inch sewer main from the Main 280/Main 338 sewer collectors along the north side of the Trinity River to SH 121 (Part 1), a 30-inch sewer main from the new 66-inch parallel main to the Haltom City meter station (Part 2), and a 54-inch sewer main from the end of the new 66-inch sewer at SH 121 to SH 26 and the construction of two new customer city meter stations. The Wastewater Master Plan identified the need for this project, and a contract for cost participation with the Cities of Haltom City, North Richland Hills and Richland Hills for construction has been approved by the City Council.
- Main 503 Village Creek Sewer Main Rehabilitation:** This is a multi-phase project to rehabilitate the Main 503 sewer main along the west side of Lake Arlington and north of the Lake Arlington Dam. This was identified by the Utility's Field Operations staff as having high maintenance due to corrosion and sewer overflow problems into Lake Arlington.
- Major Wastewater Collectors Other Improvements:** This funding provides for smaller major wastewater collector projects. Some have been identified in the Wastewater Master Plan and some have been identified by Utility staff as requiring rehabilitation or replacement.

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

- **Main 389 Sycamore Creek Relief Interceptor:** This project will construct a parallel sewer relief main from Gateway Park to Sycamore Creek crossing IH-30. This project has been identified in the Sewer Master Plan.
- **Chisholm Trail Parkway Main 311 Abandonment and Lift Station:** This project consists of a lift station to serve the Lockheed Martin Recreation Area. Service was disrupted with the construction of the Chisholm Trail Parkway.

7. COMMUNITY FACILITIES AGREEMENTS

Community Facilities Agreements (CFAs) fund partnership opportunities with new development providers to invest in oversizing the water and sewer infrastructure from the size required to provide service to a proposed development, to the size required by the Water and/or Wastewater Master Plan to provide service for future growth in the area. These CFAs also fund partnership opportunities with redevelopment providers to rehabilitate and replace existing deteriorated infrastructure that will enhance the service level of the area surrounding the proposed revitalization area. All CFAs with any City participation require separate City Council approval. Annexation projects will provide service to previously annexed areas that have met required criteria and petitioned the City for utility services. The total estimated spend over the next five years is \$36.7 million.

Program Summary: Community Facilities Agreements

Table 8

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Projects						
Annexation Program - Water and Sewer	\$ -	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,000,000
Community Facilities Agreements Program	\$ 9,400,000	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000	\$ 33,400,000
Deerfield Addition Water Improvements	\$ 1,302,200	\$ -	\$ -	\$ -	\$ -	\$ 1,302,200
Total	\$ 10,702,200	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 36,702,200
Funding Sources						
Revenue Bonds	\$ 10,702,200	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 36,702,200
Total Sources	\$ 10,702,200	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 36,702,200

FY2016 Project Descriptions:

- **Deerfield Addition Water Improvements:** This project will install water and sewer lines to serve the Deerfield Addition residents currently served by the City of Keller. The

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

Deerfield Addition was annexed by the City Council on August 19, 2014. State law requires the City to provide full municipal services within 2½ years.

8. REHABILITATION AND REPLACEMENT

Projects that address water mains smaller than 16 inches in diameter or sewer mains smaller than 24 inches in diameter are outlined in the table below. This funding also addresses impact fee studies and a facility for the Utility’s Field Operations Division’s vehicles and equipment. The total estimated spend over the next five years is \$64.4 million.

Program Summary: Rehabilitation and Replacement

Table 9

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Projects						
Equipment Services Garage	\$ 6,700,000	\$ -	\$ -	\$ -	\$ -	\$ 6,700,000
Water/Wastewater Impact Fee Study	\$ 300,000	\$ -	\$ -	\$ -	\$ 300,000	\$ 600,000
As-Built Record Drawing Engineering Support	\$ 100,000	\$ 110,000	\$ 110,000	\$ -	\$ -	\$ 320,000
Miscellaneous Water and Sewer Line Contracts	\$ 12,375,000	\$ 11,100,000	\$ 11,100,000	\$ 11,100,000	\$ 11,100,000	\$ 56,775,000
Total	\$ 19,475,000	\$ 11,210,000	\$ 11,210,000	\$ 11,100,000	\$ 11,400,000	\$ 64,395,000
Funding Sources						
Revenue Bonds	\$ 6,700,000	\$ -	\$ -	\$ -	\$ -	\$ 6,700,000
Sewer Impact Fees	\$ 150,000	\$ -	\$ -	\$ -	\$ 150,000	\$ 300,000
Water Impact Fees	\$ 150,000	\$ -	\$ -	\$ -	\$ 150,000	\$ 300,000
Cash	\$ 12,475,000	\$ 11,210,000	\$ 11,210,000	\$ 11,100,000	\$ 11,100,000	\$ 57,095,000
Total Sources	\$ 19,475,000	\$ 11,210,000	\$ 11,210,000	\$ 11,100,000	\$ 11,400,000	\$ 64,395,000

FY2016 Project Descriptions:

- Equipment Services Garage:** The project consists of the construction of a new equipment services garage at the Water Field Operations yard. The new garage is required to maintain the Utility’s heavy construction equipment used by the Water Field Operations Division. Design for the project was funded through the 2014 Bond Program.
- Water/Wastewater Impact Fee Study:** This project will update the Land Use Assumptions and Capital Improvements Plan for water and wastewater impact fees to comply with State law and City Code.

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

- As-Built Record Drawing Engineer Support:** This project will provide engineering support to prepare record drawings of completed water and sewer projects. The current in-house capability to prepare record drawings was eliminated for budget purposes. While new engineering design agreements will include the requirement for record drawings, all developer project agreements and many older project contracts did not include record drawing requirements. Until all engineering design contracts have a record drawing component, an engineering support contract for as-built/record drawings is required for record drawing preparation.
- Miscellaneous Water and Sewer Line Contracts:** This is a series of projects that provide small water and sewer extensions, replacements or relocations, along with sewer rehabilitation using trenchless technology. These projects are task order projects used by Utility staff to extend/relocate/replace/rehabilitate water or sewer lines on a task order basis and have been used for emergency work when needed. Other City departments may use this contract for small projects upon payment to the Utility.

9. STREET MAINTENANCE

Outlined in the table below is funding for the replacement of water and sewer lines under streets that are scheduled for reconstruction that are old and/or have a high maintenance record. These projects are included in the City-wide street bond programs or other street maintenance programs. The total estimated spend over the next five years is \$194.3 million.

Program Summary: Street Maintenance

Table 10

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Projects						
Water and Sewer Program - Streets	\$ 30,300,000	\$ 30,000,000	\$ 39,000,000	\$ 45,000,000	\$ 50,000,000	\$ 194,300,000
Total	\$ 30,300,000	\$ 30,000,000	\$ 39,000,000	\$ 45,000,000	\$ 50,000,000	\$ 194,300,000
Funding Sources						
Revenue Bonds	\$ 5,991,100	\$ -	\$ -	\$ -	\$ -	\$ 5,991,100
Legacy Water/Sewer Capital Fund	\$ -	\$ 9,000,000	\$ -	\$ -	\$ -	\$ 9,000,000
Cash	\$ 24,308,900	\$ 21,000,000	\$ 39,000,000	\$ 45,000,000	\$ 50,000,000	\$ 179,308,900
Total Sources	\$ 30,300,000	\$ 30,000,000	\$ 39,000,000	\$ 45,000,000	\$ 50,000,000	\$ 194,300,000

10. SANITARY SEWER OVERFLOW INITIATIVE

Projects to reduce and/or eliminate sanitary sewer overflows as required to comply with federal and state regulations are outlined in the table below. This funding allows for the replacement, rerouting or rehabilitation of sewer mains that have been identified as needing replacement through one of three methods: by the ongoing sewer Interceptor Condition Assessment Program; by their history of repeated breaks; or upon recommendation by the Field Operations Division staff based on age and pipe materials. The total estimated spend over the next five years is \$50.0 million.

Program Summary: Sanitary Sewer Overflow Initiative

Table 11

	FY2016	FY2017	FY2018	FY2019	FY2020	Total 5-Year CIP
Projects						
Sanitary Sewer Overflow Initiative	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 50,000,000
Total	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 50,000,000
Funding Sources						
Cash	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 50,000,000
Total Sources	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 50,000,000

PAST ACCOMPLISHMENTS

Over the last five years, the Utility has appropriated \$105.6 million on average per year for capital projects in support of system operations. Past projects were driven by the need to accommodate growth, rehabilitate and replace existing aging infrastructure, implement operational efficiencies, and facilitate partnerships with outside entities.

The significant projects for which funds were appropriated in FY2011-2015 include:

- Village Creek Water Reclamation Facility Deep Media Filter Rehabilitation:** This project consisted of the rehabilitation of the existing clarifiers, valves and pumps as well as improvement of electrical and instrumentation processes at the plant.



Deep Media Filter project

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

- South Holly Water Treatment Plant Electrical Improvements:** This project consisted of the replacement of the high service pump station that had been in operation for more than 50 years after a condition assessment identified safety concerns and high corrective maintenance costs.
- Eastside II 54-inch Transmission Main Phase 3:** This project was identified in the Water Master Plan and consisted of the construction of this major transmission main to provide supplemental capacity to satisfy demand from wholesale customers and the northern portion of the Eastside Pressure Plane.
- Northside IV Elevated Storage Tank and Pipeline:** This project was identified in the Water Master Plan and consisted of the construction of a one million gallon composite elevated storage tank required to serve the rapidly growing area of northwest Fort Worth, as well as an associated 30-inch water transmission main.
- Chisholm Trail Parkway Water and Sewer Main Relocations:** This project consisted of the installation of a sewer main and replacement and upgrade of existing water mains to eliminate conflicts and accommodate construction of the new Chisholm Trail Parkway.



Northside IV Elevated Storage Tank

FY2011 through FY2015 capital appropriations by year consisted of the following:

CIP BY CATEGORY	FY2011	FY2012	FY2013	FY2014	FY2015	5-YEAR TOTAL
Water Treatment Plants	\$14,950,305	\$5,137,600	\$1,309,585	\$1,664,289	\$5,511,360	\$28,573,139
Water Reclamation Facilities	\$15,210,668	\$21,601,793	\$3,643,360	\$4,699,738	\$3,633,762	\$48,789,321
Trinity River Vision and IH-35	\$1,365,597	\$2,025,630	\$16,609,866	\$6,443,073	\$3,361,149	\$29,805,315
Major Transmission Mains	\$5,366,106	\$17,186,766	\$14,227,134	\$21,773,640	\$13,844,173	\$72,397,819
Miscellaneous Facilities	\$13,583,058	\$16,397,194	\$13,807,405	\$10,953,932	\$12,956,319	\$67,697,908
Major Wastewater Collectors	\$14,740,133	\$5,209,485	\$6,885,755	\$22,690,265	\$11,009,078	\$60,534,716
Community Facilities Agreements	\$2,855,118	\$1,771,192	\$991,068	\$1,051,084	\$5,276,500	\$11,944,962
Rehabilitation and Replacement	\$5,976,784	\$7,486,277	\$7,853,978	\$5,564,985	\$7,351,033	\$34,233,057
Street Maintenance	\$23,077,412	\$22,256,704	\$27,566,131	\$19,642,397	\$30,747,870	\$123,290,514
Sanitary Sewer Overflow Initiative	\$9,687,513	\$16,944,351	\$10,212,181	\$13,335,023	\$428,510	\$50,607,578
TOTAL CIP	\$106,812,694	\$116,016,992	\$103,106,463	\$107,818,426	\$94,119,754	\$527,874,329

LOOKING TO THE FUTURE

The Water and Wastewater Master Plan processes identify needs 20 years into the future and include a recommended list of CIP projects for that planning horizon. Because water distribution system, wastewater collection system, and treatment plant expansion projects are directly related to growth, which can be unpredictable, the Master Plans focus on needs during the first ten years. To maintain more accurate plans, the Master Plans are updated every ten years, or more frequently if the Master Plan growth assumptions have changed significantly.

Significant projects currently included in the Utility's Water and Wastewater Master Plans beyond the current 5-year CIP horizon are:

- **Eagle Mountain Water Treatment Plant Expansion:** This project will expand the plant from 105 MGD capacity to 140 MGD.
- **Rolling Hills Water Treatment Plant Expansion:** This project will expand the plant from 200 MGD capacity to 250 MGD.
- **Westside Water Treatment Plant Phased Expansion:** This series of projects will expand the plant from 12 MGD capacity to 35 MGD.
- **Village Creek Water Reclamation Facility Expansion:** This project will expand the plant from its current 166 MGD rated capacity to 191 MGD rated capacity and will include new processes for nutrient removal and enhanced disinfection.
- **Mary's Creek Water Reclamation Facility.** This project will construct the new water reclamation facility on the west side of Fort Worth.

Water and Wastewater – 5-Year Capital Improvement Plan (FY2016-2020)

EXHIBITS

1. FY2016-2020 Water and Wastewater 5-year Capital Improvement Plan
2. FY2016 Vehicle and Equipment Plan

EXHIBIT 1

**FY2016-2020 Water and Wastewater 5-Year Capital
Improvement Plan**

WATER AND WASTEWATER 5-YEAR CAPITAL IMPROVEMENT PLAN

FY2016 - 2020

Funding Source	Category	Project	2016	2017	2018	2019	2020	5 Year Total
Revenue Bonds	Community Facilities Agreements	Annexation Program - Water and Sewer		\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,000,000
Revenue Bonds	Community Facilities Agreements	Community Facilities Agreements Program	\$ 9,400,000	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000	\$ 33,400,000
Revenue Bonds	Community Facilities Agreements	Deerfield Addition Water Improvements	\$ 1,302,200					\$ 1,302,200
Total Community Facility Agreements			\$ 10,702,200	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 36,702,200
Revenue Bonds	Major Transmission Mains	24" Holly Water Main - Churchill Road		\$ 307,200		\$ 2,559,600		\$ 2,866,800
Revenue Bonds	Major Transmission Mains	24" Northside IV Water Line from Eagle Mountain Water Treatment Plant		\$ 1,450,000	\$ 5,425,000		\$ 5,425,000	\$ 12,300,000
Revenue Bonds	Major Transmission Mains	24" Northside IV Water Line - Along Hwy 287		\$ 280,000			\$ 2,800,000	\$ 3,080,000
Revenue Bonds	Major Transmission Mains	54" NSIII Water Line - EMWTP to Hicks Field				\$ 733,000		\$ 733,000
Revenue Bonds	Major Transmission Mains	Cultural District - Water Line Replace	\$ 695,000	\$ 1,848,000	\$ 6,646,000	\$ 168,000	\$ 7,876,000	\$ 17,233,000
Revenue Bonds	Major Transmission Mains	Northside II 48" Water Main	\$ 14,644,800	\$ 12,000,000				\$ 26,644,800
Revenue Bonds	Major Transmission Mains	Relocation of Water Main for East Rosedale St	\$ 4,850,000					\$ 4,850,000
Revenue Bonds	Major Transmission Mains	Major Transmission Mains Other Improvements	\$ 50,000	\$ 1,492,000	\$ 265,188	\$ 2,651,880		\$ 4,459,068
Revenue Bonds	Major Transmission Mains	Water Line Replace - Southside Medical District	\$ 1,291,000					\$ 1,291,000
Cash	Major Transmission Mains	Water Line Replace - Southside Medical District		\$ 1,265,000	\$ 1,150,000	\$ 1,000,000		\$ 3,415,000
Revenue Bonds	Major Transmission Mains	36" NSII Water Main - Northeast Extension		\$ 3,535,002				\$ 3,535,002
Legacy Water/Sewer Capital Fund	Major Transmission Mains	36" NSII Water Main - Northeast Extension	\$ 988,800					\$ 988,800
Legacy Water/Sewer Capital Fund	Major Transmission Mains	SH 114 Water Main Relocation	\$ 2,542,900	\$ 600,000	\$ 4,000,000			\$ 7,142,900
Legacy Water/Sewer Capital Fund	Major Transmission Mains	Water Master Plan Amendment	\$ 146,499					\$ 146,499
Total Major Transmission Mains			\$ 25,208,999	\$ 22,777,202	\$ 17,486,188	\$ 7,112,480	\$ 16,101,000	\$ 88,685,869
Revenue Bonds	Major Wastewater Collectors	Eagle Mountain to Big Fossil Diversion				\$ 5,000,000		\$ 5,000,000
Revenue Bonds	Major Wastewater Collectors	Little Fossil Creek Interceptor Improvements			\$ 2,000,000			\$ 2,000,000
Revenue Bonds	Major Wastewater Collectors	Main 199 West Fork Basin Parallel Relief Sewer Line			\$ 600,000	\$ 3,440,640		\$ 4,040,640
Revenue Bonds	Major Wastewater Collectors	Main 257 Village Creek Basin Parallel Relief Sewer	\$ 1,316,300	\$ 3,430,487	\$ 4,740,504	\$ 3,294,950	\$ 2,780,554	\$ 15,562,795
Revenue Bonds	Major Wastewater Collectors	Main 272 Replacement Clear Fork Sewer					\$ 1,400,000	\$ 1,400,000
Revenue Bonds	Major Wastewater Collectors	Main 275 Sycamore Creek Basin Parallel Relief Sewer		\$ 3,240,000				\$ 3,240,000
Revenue Bonds	Major Wastewater Collectors	Main 280/338 West Fork Rehabilitation	\$ 750,000	\$ 1,500,000				\$ 2,250,000
Revenue Bonds	Major Wastewater Collectors	Main 295 Village Creek Basin Replacement Sewer					\$ 900,000	\$ 900,000
Revenue Bonds	Major Wastewater Collectors	Main 34, 100 and D100 Downtown Central District Sewer Replacements		\$ 2,500,000				\$ 2,500,000
Revenue Bonds	Major Wastewater Collectors	Main 347/386 Upper Big Fossil Parallel Relief Sewer			\$ 6,000,000			\$ 6,000,000
Revenue Bonds	Major Wastewater Collectors	Main 365 Marine Creek Basin Parallel Relief Sewer		\$ 3,540,000		\$ 2,000,000	\$ 3,000,000	\$ 8,540,000
TWDB State Revolving Loan Fund	Major Wastewater Collectors	Main 402 Big Fossil Parallel Relief Sewer Part 1	\$ 8,950,000					\$ 8,950,000
Revenue Bonds	Major Wastewater Collectors	Main 402 Big Fossil Parallel Relief Sewer Part 2	\$ 1,350,000			\$ 9,500,000		\$ 10,850,000
Revenue Bonds	Major Wastewater Collectors	Main 503 Village Creek Sewer Main Rehabilitation	\$ 490,000	\$ 950,000	\$ 4,800,000			\$ 6,240,000
Revenue Bonds	Major Wastewater Collectors	Major Wastewater Collectors Other Improvements	\$ 250,000		\$ 1,770,000		\$ 900,000	\$ 2,920,000
Revenue Bonds	Major Wastewater Collectors	Upper Clear Fork Interceptor Improvements		\$ 3,000,000	\$ 3,000,000			\$ 6,000,000
Revenue Bonds	Major Wastewater Collectors	Walsh Ranch Sewer Extension		\$ 2,000,000				\$ 2,000,000
Cash	Major Wastewater Collectors	Sewer Extension - Sandy Lane/Trice Court		\$ 24,000	\$ 239,247			\$ 263,247
Legacy Water/Sewer Capital Fund	Major Wastewater Collectors	Main 389 Sycamore Creek Relief Interceptor	\$ 1,050,000					\$ 1,050,000
Revenue Bonds	Major Wastewater Collectors	Main 389 Sycamore Creek Relief Interceptor				\$ 3,000,000		\$ 3,000,000
Legacy Water/Sewer Capital Fund	Major Wastewater Collectors	Main 402 Big Fossil Parallel Relief Sewer Part 1	\$ 1,000,000					\$ 1,000,000
Revenue Bonds	Major Wastewater Collectors	Chisholm Trail Parkway Main 311 Abandonment and Lift Station	\$ 600,000					\$ 600,000
Total Major Wastewater Collectors			\$ 15,756,300	\$ 20,184,487	\$ 23,149,751	\$ 26,235,590	\$ 8,980,554	\$ 94,306,682
TWDB SWIRFT	Miscellaneous Facilities	Advanced Metering Infrastructure (AMI)	\$ 12,301,421		\$ 63,000,000			\$ 75,301,421
Sewer Impact Fees	Miscellaneous Facilities	Bonds Ranch Lift Stations				\$ 600,000		\$ 600,000
Revenue Bonds	Miscellaneous Facilities	Caylor Ground Storage Tank	\$ 175,000	\$ 1,000,000				\$ 1,175,000
Revenue Bonds	Miscellaneous Facilities	Denton Creek Lift Stations and Force Mains		\$ 300,000	\$ 1,000,000			\$ 1,300,000
Revenue Bonds	Miscellaneous Facilities	Edgecliff Sanitary Sewer Meter Station	\$ 810,000	\$ -	\$ -	\$ -	\$ -	\$ 810,000
Gas Well Revenues	Miscellaneous Facilities	Jenkin Hts Lift Station and Force Mains	\$ 200,000	\$ 2,200,000				\$ 2,400,000
Revenue Bonds	Miscellaneous Facilities	Tarleton Regional Lift Station		\$ 2,500,000				\$ 2,500,000
Sewer Impact Fees	Miscellaneous Facilities	Tarleton Regional Lift Station		\$ 250,000				\$ 250,000
Gas Well Revenues	Miscellaneous Facilities	Lake Worth Comanche Crk. Drainage		\$ 600,000				\$ 600,000
Gas Well Revenues	Miscellaneous Facilities	Lake Worth Hike & Bike Trail	\$ 6,268,400					\$ 6,268,400
Gas Well Revenues	Miscellaneous Facilities	Love Circle Water and Sewer	\$ 3,106,000					\$ 3,106,000
Revenue Bonds	Miscellaneous Facilities	Northside Pump Station Expansion to 75 MGD		\$ 200,000	\$ 1,000,000			\$ 1,200,000
Revenue Bonds	Miscellaneous Facilities	Sun Country Elevated Storage Tank Rehab	\$ 1,600,000					\$ 1,600,000
Sewer Impact Fees	Miscellaneous Facilities	Walsh Ranch Lift Station & Force Mains				\$ 200,000		\$ 200,000
Revenue Bonds	Miscellaneous Facilities	Westside Storage Tanks	\$ 950,000	\$ 300,000	\$ 1,500,000	\$ 1,000,000		\$ 3,750,000
Gas Well Revenues	Miscellaneous Facilities	Lake Worth Dredging	\$ 275,000					\$ 275,000
Revenue Bonds	Miscellaneous Facilities	Calmont Tank Rehab		\$ 150,000	\$ 1,000,000			\$ 1,150,000
Legacy Water/Sewer Capital Fund	Miscellaneous Facilities	Eagle Mountain Water Treatment Plant Vulnerability Assessment	\$ 300,000					\$ 300,000
Revenue Bonds	Miscellaneous Facilities	Eagle Mountain Water Treatment Plant Vulnerability Assessment		\$ 900,000				\$ 900,000
Revenue Bonds	Miscellaneous Facilities	Walsh Ranch Pump Station	\$ 1,729,685					\$ 1,729,685
Total Miscellaneous Facilities			\$ 27,715,506	\$ 5,750,000	\$ 69,150,000	\$ 1,000,000	\$ 1,800,000	\$ 105,415,506

WATER AND WASTEWATER 5-YEAR CAPITAL IMPROVEMENT PLAN FY2016 - 2020

Funding Source	Category	Project	2016	2017	2018	2019	2020	5 Year Total
Revenue Bonds	Rehab and Replacement	Equipment Services Garage	\$ 6,700,000					\$ 6,700,000
Sewer Impact Fees	Rehab and Replacement	Water/Wastewater Impact Fee Study	\$ 150,000				\$ 150,000	\$ 300,000
Water Impact Fees	Rehab and Replacement	Water/Wastewater Impact Fee Study	\$ 150,000				\$ 150,000	\$ 300,000
Cash	Rehab and Replacement	Miscellaneous Water and Sewer Line Contracts	\$ 12,375,000	\$ 11,100,000	\$ 11,100,000	\$ 11,100,000	\$ 11,100,000	\$ 56,775,000
Cash	Rehab and Replacement	As-Built Record Drawing Engineering Support	\$ 100,000	\$ 110,000	\$ 110,000			\$ 320,000
Total Rehab and Replacement			\$ 19,475,000	\$ 11,210,000	\$ 11,210,000	\$ 11,100,000	\$ 11,400,000	\$ 64,395,000
Cash	Sanitary Sewer Overflow Initiative	Sanitary Sewer Overflow Initiative	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 50,000,000
Total Sanitary Sewer Overflow Initiative			\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 50,000,000
Revenue Bonds	Street Maintenance	Water and Sewer Program - Streets	\$ 5,991,100					\$ 5,991,100
Legacy Water/Sewer Capital Fund	Street Maintenance	Water and Sewer Program - Streets		\$ 9,000,000				\$ 9,000,000
Cash	Street Maintenance	Water and Sewer Program - Streets	\$ 24,308,900	\$ 21,000,000	\$ 39,000,000	\$ 45,000,000	\$ 50,000,000	\$ 179,308,900
Total Street Maintenance			\$ 30,300,000	\$ 30,000,000	\$ 39,000,000	\$ 45,000,000	\$ 50,000,000	\$ 194,300,000
Trinity River Vision	Trinity River Vision & IH-35	IH-35 Expansion - Water and Sewer	\$ 2,295,000					\$ 2,295,000
Trinity River Vision	Trinity River Vision & IH-35	Trinity River Vision Program - Water and Sewer	\$ 6,855,400	\$ 3,192,000	\$ 23,588,000		\$ 26,323,000	\$ 59,958,400
Total Trinity River Vision & IH35			\$ 9,150,400	\$ 3,192,000	\$ 23,588,000	\$ -	\$ 26,323,000	\$ 62,253,400
Sewer Impact Fees	Water Reclamation Facilities	Mary's Creek				\$ 1,500,000		\$ 1,500,000
Cash	Water Reclamation Facilities	Mary's Creek		\$ 300,000				\$ 300,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - Bar Screen Bldg #3 Modification			\$ 500,000	\$ 500,000		\$ 1,000,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - Bio-Solids Master Plan Implementation	\$ 2,510,000		\$ 11,500,000		\$ 25,500,000	\$ 39,510,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - Chlorine Conversion & Enclosure Project		\$ 750,000	\$ 1,500,000	\$ 1,500,000		\$ 3,750,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - Dewatering Facility			\$ 5,000,000			\$ 5,000,000
Legacy Water/Sewer Capital Fund	Water Reclamation Facilities	Village Creek - Dewatering Facility	\$ 650,000					\$ 650,000
Gas Well Revenues	Water Reclamation Facilities	Village Creek - Energy Savings Performance Contract		\$ 12,050,000				\$ 12,050,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - MCC Replacement	\$ 612,800	\$ 2,250,000	\$ 1,000,000			\$ 3,862,800
Revenue Bonds	Water Reclamation Facilities	Village Creek - Primary Clarifiers 1-12 Replacement	\$ 250,000	\$ 1,650,000		\$ 1,100,000	\$ 6,000,000	\$ 9,000,000
Gas Well Revenues	Water Reclamation Facilities	Village Creek - Primary Clarifiers 1-12 Replacement				\$ 6,000,000		\$ 6,000,000
Sewer Impact Fees	Water Reclamation Facilities	Village Creek - Facilities Plan				\$ 1,000,000		\$ 1,000,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - Peak Flow Diversion Structure	\$ 2,000,000					\$ 2,000,000
TWDB State Revolving Loan Fund	Water Reclamation Facilities	Village Creek - Peak Flow Diversion Structure	\$ 28,184,467					\$ 28,184,467
Revenue Bonds	Water Reclamation Facilities	Village Creek Minor Improvements	\$ 780,000	\$ 500,000	\$ 700,000			\$ 1,980,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - Thickener Improvements				\$ 8,800,000		\$ 8,800,000
Legacy Water/Sewer Capital Fund	Water Reclamation Facilities	Village Creek - Thickener Improvements	\$ 1,000,000					\$ 1,000,000
Total Wastewater Treatment Plants			\$ 35,987,267	\$ 17,500,000	\$ 20,200,000	\$ 20,400,000	\$ 31,500,000	\$ 125,587,267
Revenue Bonds	Water Treatment Plants	Eagle Mountain Water Treatment Plant Expansion					\$ 5,000,000	\$ 5,000,000
Revenue Bonds	Water Treatment Plants	North Holly Water Treatment Plant Sludge Collection System		\$ 500,000	\$ 2,500,000			\$ 3,000,000
Revenue Bonds	Water Treatment Plants	Rolling Hills Water Treatment Plant - Rehab & Replace	\$ 6,000,000					\$ 6,000,000
Water Impact Fees	Water Treatment Plants	Westside Water Treatment Plant Expansion					\$ 500,000	\$ 500,000
Revenue Bonds	Water Treatment Plants	Zebra Mussel Raw Water Chlorination Station					\$ 250,000	\$ 250,000
Total Water Treatment Plants			\$ 6,000,000	\$ 500,000	\$ 2,500,000	\$ -	\$ 5,750,000	\$ 14,750,000
Total FY2016 - 2020 CIP			\$ 190,295,672	\$ 127,613,689	\$ 222,783,939	\$ 127,348,070	\$ 168,354,554	\$ 836,395,924

FY16-20 Capital Projects by Funding Source	2016	2017	2018	2019	2020	5 Year Total
Revenue Bonds	\$ 67,097,885	\$ 55,922,689	\$ 70,596,692	\$ 51,748,070	\$ 69,331,554	\$ 314,696,890
Gas Well Revenues	\$ 9,849,400	\$ 14,850,000	\$ -	\$ 6,000,000	\$ -	\$ 30,699,400
Cash	\$ 46,783,900	\$ 43,799,000	\$ 61,599,247	\$ 67,100,000	\$ 71,100,000	\$ 290,382,147
Sewer Impact Fees	\$ 150,000	\$ 250,000	\$ -	\$ 2,500,000	\$ 950,000	\$ 3,850,000
Water Impact Fees	\$ 150,000	\$ -	\$ -	\$ -	\$ 650,000	\$ 800,000
TWDB State Revolving Loan Fund	\$ 37,134,467	\$ -	\$ -	\$ -	\$ -	\$ 37,134,467
TWDB SWIRFT	\$ 12,301,421	\$ -	\$ 63,000,000	\$ -	\$ -	\$ 75,301,421
Trinity River Vision	\$ 9,150,400	\$ 3,192,000	\$ 23,588,000	\$ -	\$ 26,323,000	\$ 62,253,400
Legacy Water/Sewer Capital Fund	\$ 7,678,199	\$ 9,600,000	\$ 4,000,000	\$ -	\$ -	\$ 21,278,199
Total FY2016 - 2020 CIP by Funding Source						
	\$ 190,295,672	\$ 127,613,689	\$ 222,783,939	\$ 127,348,070	\$ 168,354,554	\$ 836,395,924

EXHIBIT 2

FY2016 Vehicle and Equipment Plan

FY2016 Vehicle and Equipment Plan	
Water	
Funding Established on December 1, 2015, M&C G-18615	
Short Description	Amount Budgeted
Safety & Security	
1 ATV and 1 Trailer	\$20,500
Total	\$20,500
Laboratory	
Gas Chromatograph/Mass Spectrometer (GC/MS) for geosmin analysis in raw and finished water	\$120,000
Total	\$120,000
Meter Services	
1 Pick-up	\$25,000
Total	\$25,000
North and South Holly Water Treatment Plants	
Sodium Hypochlorite Tank for South Holly	\$30,000
Genie Portable Aerial Lift	\$11,576
Ozone Concentration Monitors (3)	\$20,805
Total	\$62,381
Rolling Hills Water Treatment Plant	
Ammonia Tank Repair/Repainting	\$16,000
Filter Gallery Architectural Upgrades	\$100,000
Total	\$116,000
Distribution System	
12" Dashpot for Russom Ranch Pump Station	\$9,500
Multilin 469 for WS & Holly Quadrant (2)	\$11,772
Valve Operator for Armstrong Tank	\$6,000
4 Rotork Actuators for the Distribution System	\$51,343
1 Mobile Generator and 1 6" Mounted Trailer	\$110,000
Total	\$188,615
Westside Water Treatment Plant	
Pipe, Fittings, Conduit, Wire, and Concrete for Membrane Installation	\$117,220
200 HP Pump and Motor - 12" x 10" Pump	\$40,000
Variable Frequency Drive for Pump Motor	\$40,000
Membrane Feed Pump Strainer and Control Panel	\$35,000
18" Butterfly Valves - Strainer - Manual Actuator - 2 ea.	\$10,000
18" Butterfly Valve - Pump Discharge - Pneumatic Actuator	\$10,000

FY2016 Vehicle and Equipment Plan

Water

Funding Established on December 1, 2015, M&C G-18615

Short Description	Amount Budgeted
24" Butterfly Valve - Pump Suction - Manual Actuator	\$6,000
12" Butterfly Valves - Feed, Filtrate and Return Flow - 4 ea.	\$24,000
18" Check Valve	\$10,000
Total	\$292,220
Eagle Mountain Water Treatment Plant	
Replacement of Chains and Flyghts in Basin 4	\$45,000
NS III to NS II Low Transfer Valve, Meter, Vault at Boat Club Road	\$50,000
54" Manual Valve Operator for EM Plant Valve Vault #5	\$7,500
72" Manual Valve Operator for EM Plant Raw Water II Discharge Line	\$10,250
Total	\$112,750
Backflow	
Move of Backflow/Pretreatment office and lab space to Village Creek WRF for operational efficiencies	\$50,000
Total	\$50,000
Street Repairs	
1 Service Truck	\$90,000
Total	\$90,000
Total Water Vehicles and Equipment	\$1,077,466

FY2016 Vehicle and Equipment Plan	
Wastewater	
Funding Established on December 1, 2015, M&C G-18615	
Short Description	Amount Budgeted
Wholesale - Sewer	
Contract Support for Development of New Uniform Wholesale Wastewater contract with Customer Cities. All Uniform Wholesale Wastewater contracts expire in 2017.	\$125,000
Total	\$125,000
Laboratory	
Hydrogen and Zero Air Generators used to run mandated analytical procedures for required laboratory testing.	\$35,000
Spectrometer for UV-254 analysis in raw and finished water analysis.	\$10,000
Incubator for Heterotrophic Plate Count (HPC) microbiological analysis	\$8,000
Total	\$53,000
Village Creek Maintenance	
Replace (2) RS5 pumps - 2 @ \$71,000 ea.	\$142,000
Replace DI2	\$33,000
Air compressor for boiler bldg. hot water loop	\$25,000
2 PF Pumps	\$40,000
1 115 Moyno Pump	\$20,000
Burner replacement in dual fuel boiler	\$75,000
Chopper pumps (Digester cleaning)	\$12,500
1 SkyTrac loader	\$125,000
Grit double screen	\$25,000
Fine Screen Chain	\$50,000
4 Turntables	\$280,000
Total	\$827,500
Village Creek Technical Services	
Ammonia analyzer and sampler	\$60,000
Total	\$60,000
Village Creek Instrumentation & Electrical	
Shermco - electric blower Multilin replacement	\$25,000
Shermco - replacement 500 KVA transformer for SO2	\$25,000
Shermco - RS Motor - 2 @ \$12,000	\$24,000
Rotork - valve actuators & gearboxes for contact Basins 31, 32 inlet gates - 2 @ \$17,827 ea.	\$35,654
Rotork - valve actuators & gearboxes for contact Basins 31, 32 effluent gates - 2 @ \$15,000 ea.	\$30,000
Rotork - valve actuator & gearbox for R- Box	\$15,000
Rotork - valve actuator for ABs 9 & 11 PE Flow - 2 @ \$8,000 ea.	\$16,000
Endress + Hauser - replacement thermal mass flow meters for ABs 9-11 air flow - 3 @ \$7,494 ea.	\$22,482
Fluke 754 documenting process calibrator to replace existing obsolete units - 2 @ \$8,094 ea.	\$16,188
Trane-Tech Services air handling units - 2 @ \$6,000 ea	\$12,000
Allen Bradley - Panel View Plus - 2 @ \$5,000 ea	\$10,000
Total	\$231,324

FY2016 Vehicle and Equipment Plan	
Wastewater	
Funding Established on December 1, 2015, M&C G-18615	
Short Description	Amount Budgeted
Customer City Meters	
Mission communications RT's to replace Telog recorders at sewer customer city meters	\$75,000
Total	\$75,000
Pretreatment	
Move of Backflow/Pretreatment office and lab space to Village Creek WRF for operational efficiencies	\$150,000
Total	\$150,000
Sewer Main Repairs	
1 Mini Excavator	\$49,000
Total	\$49,000
Sewer Stops	
2 Sewer Trucks	\$530,000
Total	\$530,000
Sewer Taps & Services	
1 Mini Excavator	\$40,000
Total	\$40,000
Sewer TV Investigations	
1 Sewer Inspection CCTV Truck	\$200,000
Total	\$200,000
Sewer PM & Cleaning	
1 Sewer Truck	\$220,000
Total	\$220,000
Sanitary Sewer Asset Management Program	
2 Service trucks with air compressors	\$250,000
4 Trailers, 40,000 GVWR, Air Lift Ramps	\$98,000
1 Backhoe, 17-ft digging depth	\$170,000
2 Dump trucks, 12-yd tandem axle	\$270,000
2 Excavators, 400 MM rubber track estimated, 12-inch and 24-inch digging buckets	\$160,000
1 Mulcher attachment	\$21,000
1 Skid Steer with 80-inch bucket, grapple bucket, brush cutter attachments	\$80,000
1 Equipment trailer for skid steer, 14,000 GVWR	\$9,500
1 Pick-up truck, 1/2-ton, 4WD	\$29,500
Total	\$1,088,000
Total Wastewater Vehicles and Equipment	
	\$3,648,824