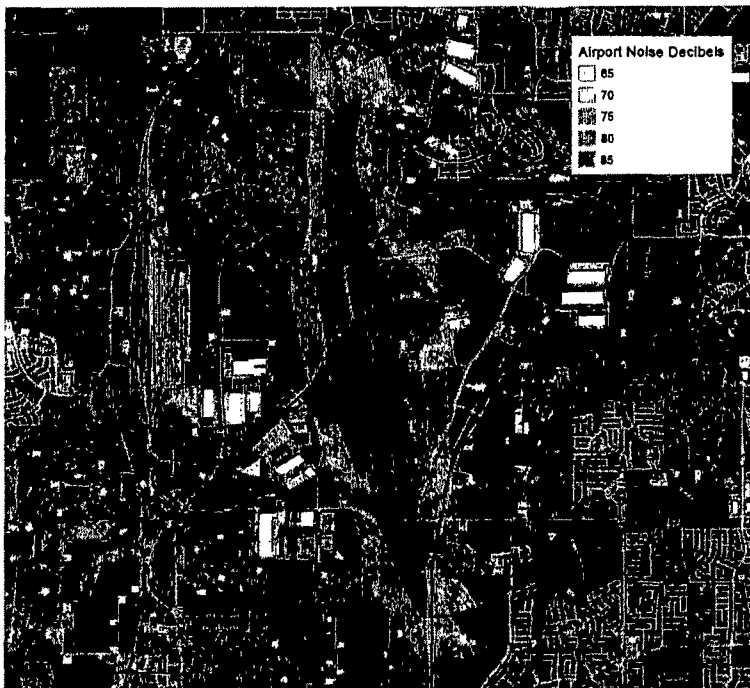


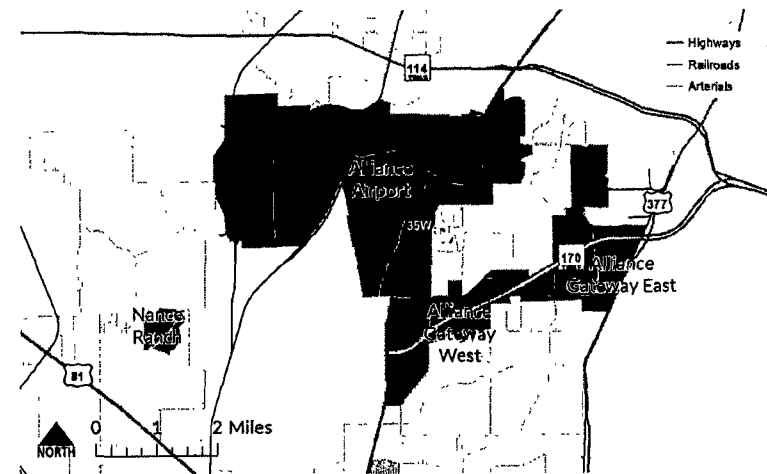
POLICIES (CONT.)

- Encourage new development adjacent and connected to previously developed or platted areas in order to utilize existing utility and road infrastructure and services, thereby optimizing public and private investments and discouraging sprawl development.
- Preserve the character of rural and suburban residential neighborhoods.
- Support zoning changes that accommodate multifamily residential development within urban villages, transit-oriented developments (TOD) and designated growth centers.
- Do not locate residential uses or schools in areas adjacent to airfields having a noise level of 65 or more decibels DNL (average Day or Night Level)



Fort Worth Alliance Airport Noise Contour

- Shelters for persons experiencing homelessness may generally be appropriate in general commercial and light industrial areas and in regional mixed-use growth centers. Shelters are not appropriate in industrial growth centers and heavy industrial areas.
- Locate large commercial and institutional uses adjacent to arterial streets, preferably at the intersections of other arterials and highways.
- Locate large industrial uses along freight rail lines, highways, or airports within industrial growth centers and other appropriate locations



Alliance Industrial Growth Center

- Separate incompatible land uses with buffers or transitional uses. Some land uses have attributes such as height, proportion, scale, operational characteristics, traffic generated, or appearance that may not be compatible with the attributes of other uses.

STRATEGIES

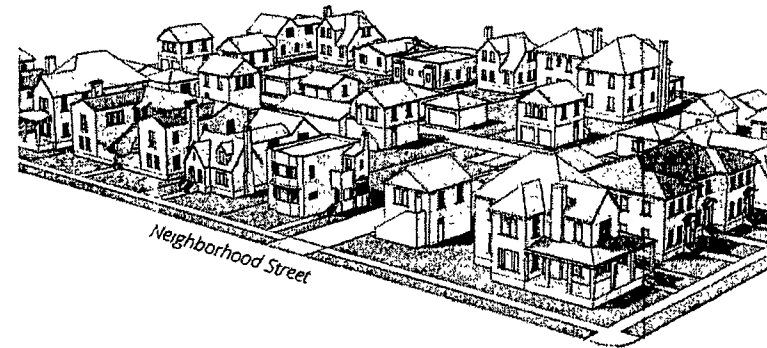
- Promote traditional neighborhood and other pedestrian-oriented developments, which encourage human interaction, walking, bicycling, mixed uses, slower traffic, public places, and attractive streetscapes.
- Plan for, facilitate, and aggressively pursue appropriate transit-oriented development (TOD) at existing and future transit station locations. A TOD encourages compact urban development adjacent to transit stations. Mixed uses in a single building, minimal setbacks, and taller structures help achieve the higher densities necessary to support transit. Retail businesses and services for commuters should be located adjacent to transit stops, between the rail platform and parking facilities.
- Maximize area of permeable surfaces in developments to reduce stormwater run-off.



Permeable surface parking lot at Christ Chapel Baptist Church

- Promote the use of Low-Impact Development techniques to reduce erosion and sedimentation of rivers, lakes, and streams.
- Encourage the use of floodplains as a boundary between incompatible land uses.

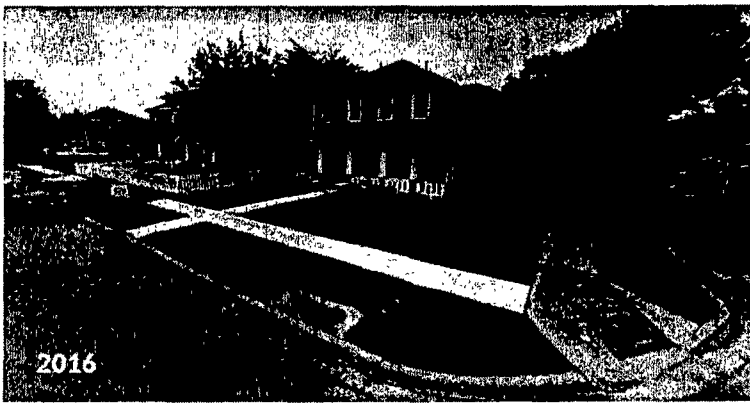
- Leave floodplains in their natural state (with hike/bike trails encouraged) to improve water quality and minimize flooding.
- Encourage new development in character with the existing neighborhood scale, architecture, and platting pattern, while working to improve pedestrian, bicycle, and transit access between adjacent neighborhoods and nearby destinations.
- Promote measures to ensure that all types of residential developments are compatible in scale to abutting residential developments. A dramatic difference in lot size and units per acre should be discouraged for new development immediately adjacent to existing development or platted and zoned property, unless mitigation is provided to minimize the effects of the new use.
- Encourage locating multiple-unit residential structures on corner lots.
- Support diverse housing options, including duplexes, fourplexes, townhomes, and small courtyard apartments to promote walkable communities, access to neighborhood services, and multimodal transportation options, while ensuring compatibility with the form, sale, and design of existing neighborhoods.



Diverse Housing Options

STRATEGIES (CONT.)

- Encourage infill development of compatible, single-family homes in existing neighborhoods to preserve and protect residential neighborhoods.



Lipscomb Street, 2013/2016 Google Streetview

- Locate elementary schools, parks, and neighborhood commercial uses within walking distance of most homes to maximize walkable, bikeable, and transit connectivity with all surrounding residential areas.

- Work with independent school districts in growing areas to identify future school sites that can be served by existing or currently planned infrastructure. Depict the identified sites on the City's future land use maps.
- Locate elementary, middle, and high schools on blocks surrounded by streets.



Stripling Junior High School

Attachment F
Relevant Portions of the City's "Capital Improvement Plan"

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 500 million gallons per day (MGD) for drinking water and 166 MGD for wastewater, with five water treatment plants and one water reclamation facility. The Fort Worth utility includes more than 3,420 miles of pipe in the water distribution system, 3,312 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’s mission is to enable our community to thrive with clean water done right every time. 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 2018-2022 Capital Improvement Plan totals \$1,013,134,946 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 2018-2022 CIP funds infrastructure improvements in its two major utility systems: Water and Wastewater. The Fiscal Year 2018-2022 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 & 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 IH35 expansion
4. **Major Transmission Mains:** Projects related to transmission mains of 16-inch diameter or larger
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

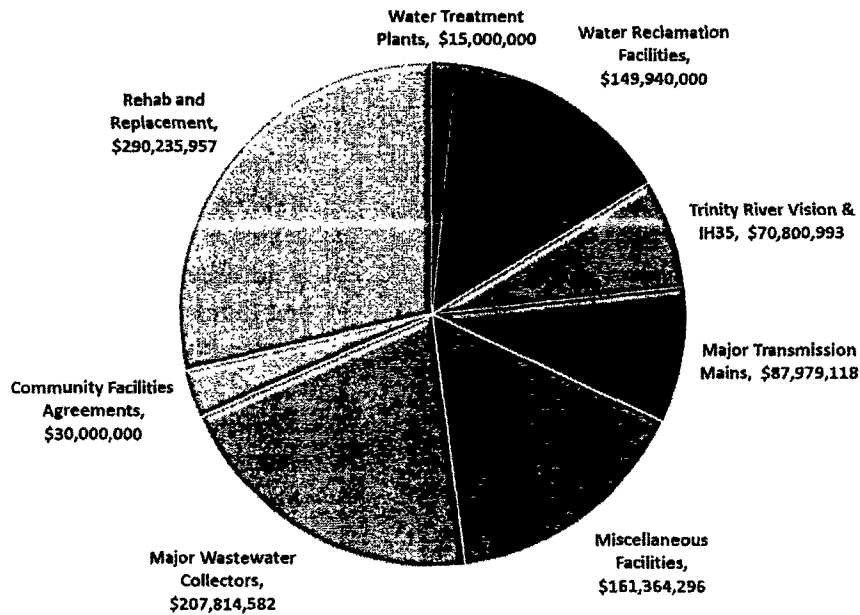
**City of Fort Worth
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Water

other street maintenance and replacement programs

overflows as required to comply with federal and state regulations

**10. Sanitary Sewer Overflow Initiative (SSOI)
Program: Projects to eliminate sanitary sewer**



The total \$1 billion FY2018-2022 CIP investment by category is shown above. 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 enable our community to thrive with clean water done right every time, which serves as the basis for the CIP. The CIP is developed from many sources from within the Utility and the City as well as exterior 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, with updates performed 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

City of Fort Worth
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Water

around Lake Worth. Operational master plans include the Bio-Solids Master Plan which recommends future bio-solids disposal processes. Technology master plans include the Information Technology (IT) Master Plan that identifies future IT requirements and needs.

- **Operational Enhancement:** Utility staff continuously review and monitor operations and customer service activities and develop initiatives for enhanced customer service or operational cost reductions. The MyH2O Advanced Metering Infrastructure project is an example 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, the Cultural District improvements and the Near Southside Medical District Redevelopment projects.
- **Development Agreements/Community Facilities Agreements:** The Policy for the Installation of Community Facilities approved by the City Council provides for the Utility's 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. Utility 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 extend to the water distribution and wastewater collection systems. Examples include the Utility's participation in the TCEQ SSOI program to minimize sanitary sewer overflows, as well as an ongoing initiative to replace all public side lead services from the water system.
- **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 Water Efficiency Condition Assessment Program, and staff review of maintenance records to identify infrastructure that can no longer be effectively maintained.
- **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 to be replaced based on maintenance history, pipeline materials, and age.

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Water

CIP Priority Criteria

The development of the five-year CIP is based on established priorities using available debt, cash and impact fee funding 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, legal or safety 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 \$1 billion, 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 2018 totals \$58 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 \$69.3 million in 2022. In addition, the Utility will use \$11.2 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 capacity for the Utility to issue additional debt over the five-year period.

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 Loan Fund (SRF) programs. 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. In FY2017, the Water Department applied for a low interest \$17 million Clean Water State Revolving Loan that includes \$946,157 of loan forgiveness due to the sustainable nature of the projects. This funding is

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being utilized for the Main 503 Village Creek, the Main 210 Colonial area and the West Fork Main 280/338 Trunk Sewer Main Rehabilitation Projects in FY2018- 2019.

Texas Water Development Board – State Water Implementation Fund for Texas

Passed by the Texas Legislature and approved by Texas voters through a constitutional amendment, the State Water Implementation Fund for Texas (SWIFT) program assists communities in developing and optimizing water supplies and conservation initiatives at cost-effective rates. Fort Worth is using SWIFT funds to develop and implement the MyH2O Advanced Metering Infrastructure project over the next five years, using \$63 million of SWIFT funds in FY2018-2020.

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 gas well revenues of \$23.9 million which will be used to fund eligible projects at Lake Worth and the Village Creek Water Reclamation Facility.

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 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 period. Updates are prepared at least every five years and impact fees are used to fund these plan updates. The most recent Impact

Fee Study was completed in 2016, with the City Council adopting new maximum assessable impact fees as well as a three-year phased collection plan that will increase impact fee collections to 40 percent of the new maximum assessment and reduce the ratepayer subsidy of growth-related capital improvements. The new impact fees took effect on April 1, 2017. The next Impact Fee Study will occur in FY2019.

Summary of Projected Capital Investment by Source

The following table provides an overview of identified revenue sources to fund the FY2018-2022 Water and Wastewater CIP. The table also includes an appropriation schedule to reflect the timing of planned projects.

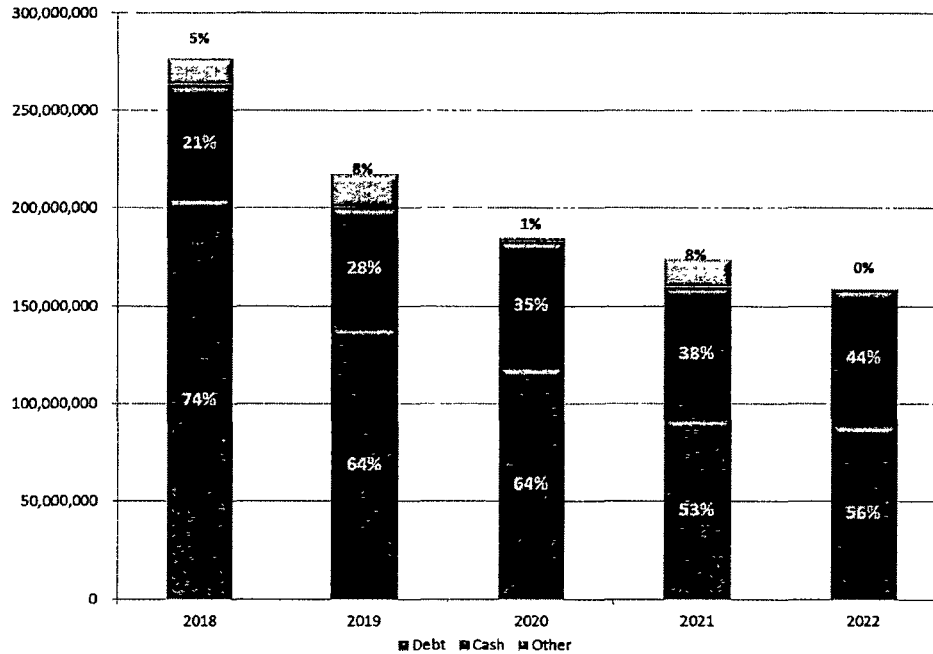
**City of Fort Worth
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Water

Summary of Projected Capital Investment by Source

Projected Funding Sources	FY2018	FY2019	FY2020	FY2021	FY2022	Total 5-Year CIP
Revenue Bonds	\$ 135,396,300	\$ 131,957,185	\$ 119,115,263	\$ 92,717,672	\$ 89,801,383	\$ 568,987,803
Gas Well Revenues	\$ 4,750,000	\$ 13,100,000	\$ 900,000	\$ 5,100,000	\$ -	\$ 23,850,000
Cash	\$ 58,091,925	\$ 61,168,736	\$ 64,115,168	\$ 67,094,431	\$ 69,250,140	\$ 319,720,400
Sewer Impact Fees	\$ -	\$ 2,650,000	\$ 800,000	\$ 7,500,000	\$ -	\$ 10,950,000
Water Impact Fees	\$ -	\$ 550,000	\$ 500,000	\$ -	\$ -	\$ 1,050,000
TWDB State Revolving Loan Fund	\$ 6,827,189	\$ 7,500,000	\$ -	\$ -	\$ -	\$ 14,327,189
TWDB SWIFT	\$ 63,000,000	\$ -	\$ -	\$ -	\$ -	\$ 63,000,000
Legacy Water/Sewer Capital Fund	\$ 8,499,554	\$ 750,000	\$ -	\$ 2,000,000	\$ -	\$ 11,249,554
Total Sources	\$ 276,564,968	\$ 217,675,921	\$ 185,430,431	\$ 174,412,103	\$ 159,051,523	\$ 1,013,134,946

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 tables for each project category.



City of Fort Worth
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Water

PROGRAM SUMMARY BY CATEGORY
Water Treatment Plants

All projects to be performed at the Utility’s five water treatment plants (Eagle Mountain, North & South Holly, Rolling Hills and Westside) are outlined in the chart below. These projects can

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 \$15 million.

Program Summary: Water Treatment Plants
FY2018 Project Descriptions

Projects	FY2018	FY2019	FY2020	FY2021	FY2022	Total 5-Year CIP
North Holly Water Treatment Plant Sludge Collection System	\$ 750,000	\$ 3,000,000	\$ -	\$ -	\$ -	\$ 3,750,000
Zebra Mussel Raw Water Chlorination Station	\$ -	\$ -	\$ 250,000	\$ -	\$ -	\$ 250,000
Westside Water Treatment Plant Expansion	\$ -	\$ 400,000	\$ 500,000	\$ -	\$ -	\$ 900,000
South Holly Flocculator Improvements	\$ -	\$ 600,000	\$ 4,500,000	\$ -	\$ -	\$ 5,100,000
Eagle Mountain Water Treatment Plant Expansion	\$ -	\$ -	\$ -	\$ 5,000,000	\$ -	\$ 5,000,000
Total	\$ 750,000	\$ 4,000,000	\$ 5,250,000	\$ 5,000,000	\$ -	\$ 15,000,000
Funding Sources						
Revenue Bonds	\$ 750,000	\$ 3,600,000	\$ 4,750,000	\$ 5,000,000	\$ -	\$ 14,100,000
Water Impact Fees	\$ -	\$ 400,000	\$ 500,000	\$ -	\$ -	\$ 900,000
Total Sources	\$ 750,000	\$ 4,000,000	\$ 5,250,000	\$ 5,000,000	\$ -	\$ 15,000,000

- **North Holly Water Treatment Plant Sludge Collection System:** This project will install circular sludge collectors at the North Holly sedimentation basins, which will allow longer plant run times between basin washings and reduce staff maintenance costs. Two plant expansions are planned in the next five years, including the expansion of the Westside Plant by 3 MGD by purchasing/installing another membrane rack in FY2020 and a project to initiate the engineering required for an expansion of the Eagle Mountain Plant in FY2021.

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 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 funding requirement over the next five years is \$149.9 million.

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Program Summary: Water Reclamation Facilities

Projects	FY2018	FY2019	FY2020	FY2021	FY2022	Total 5-Year CIP
Village Creek - Chlorine Conversion & Enclosure	\$ 3,250,000	\$ -	\$ -	\$ -	\$ -	\$ 3,250,000
Village Creek - Bar Screen Bldg #3 Modification	\$ -	\$ 500,000	\$ 500,000	\$ -	\$ -	\$ 1,000,000
Village Creek - Grit System and Flow Consolidation	\$ 300,000	\$ 17,100,000	\$ -	\$ -	\$ -	\$ 17,400,000
Village Creek - Primary Clarifiers	\$ -	\$ -	\$ 3,000,000	\$ -	\$ 16,000,000	\$ 19,000,000
Village Creek - Bio-Solid Master Plan Implementation	\$ 8,000,000	\$ 2,500,000	\$ -	\$ 42,500,000	\$ -	\$ 53,000,000
Village Creek - Disinfection Alternatives	\$ -	\$ -	\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
Mary's Creek - Water Reclamation Facility	\$ -	\$ 1,500,000	\$ -	\$ 4,500,000	\$ -	\$ 6,000,000
Village Creek - Minor Improvements	\$ 1,630,000	\$ -	\$ 230,000	\$ 330,000	\$ 4,100,000	\$ 6,290,000
Village Creek- Energy Efficiency and Performance Improvements	\$ 500,000	\$ 4,000,000	\$ -	\$ -	\$ -	\$ 4,500,000
Village Creek - MCC/Switchgear Replacements - Phase I	\$ 7,500,000	\$ 7,500,000	\$ 7,000,000	\$ -	\$ -	\$ 22,000,000
Village Creek - Administrative Complex Foundation Rehab	\$ -	\$ -	\$ 200,000	\$ -	\$ -	\$ 200,000
Village Creek - Thickener Improvements	\$ -	\$ 14,800,000	\$ -	\$ -	\$ -	\$ 14,800,000
Village Creek - Facilities Plan	\$ -	\$ 1,000,000	\$ -	\$ -	\$ -	\$ 1,000,000
Total	\$ 21,180,000	\$ 48,900,000	\$ 10,930,000	\$ 48,830,000	\$ 20,100,000	\$ 149,940,000
Funding Sources						
Revenue Bonds	\$ 17,430,000	\$ 42,400,000	\$ 10,730,000	\$ 44,330,000	\$ 20,100,000	\$ 134,990,000
Cash	\$ -	\$ -	\$ 200,000	\$ -	\$ -	\$ 200,000
Sewer Impact Fees	\$ -	\$ 2,500,000	\$ -	\$ 4,500,000	\$ -	\$ 7,000,000
Gas Well Revenues	\$ 3,750,000	\$ 4,000,000	\$ -	\$ -	\$ -	\$ 7,750,000
Total Sources	\$ 21,180,000	\$ 48,900,000	\$ 10,930,000	\$ 48,830,000	\$ 20,100,000	\$ 149,940,000

FY2018 Project Descriptions:

- **Village Creek - Chlorine Conversion and Enclosure:** This project will construct an enclosure over the chlorine and sulfur dioxide tanks and includes the installation of scrubbers.
- **Village Creek - Grit System and Flow Consolidation:** This project will install a grit removal system located downstream of the existing fine screens, designed to remove fine grit from the liquid stream. The removal of grit from the liquid stream should result in improved performance of the digesters, extending the

duration between cleaning of basins and digesters, and improve the long term life and performance of rotating equipment, such as pumps and mixers. Currently the Village Creek Plant process does not include a grit removal system near the headworks of the plant, resulting in grit accumulation in the aeration basins and anaerobic digesters, as well as premature wear of rotating equipment parts.

- **Village Creek - Bio-Solids Master Plan Implementation:** This funding provides for two projects: The first project is the installation of

an additional liquid bio-solids storage tank along with the necessary pumps and odor control equipment at the dewatering facility. The additional bio-solids storage tank was identified in the Bio-Solids Master Plan to allow on-site storage during wet weather events and to allow maintenance of de-watering 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 - 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 address needs
- **Village Creek Energy Efficiency and Performance Improvements:** This project will repair or replace aging equipment necessary for the generation, processing, and transportation of methane from the anaerobic digestion process. (Carried over from FY2017.)
- **Village Creek – MCC/Switchgear Replacements – Phase I:** This project is the first of a three phase project to systematically replace aging and corroded electrical equipment and switchgear at the Village Creek Plant. Phase I will focus on electrical equipment replacement

in the primary clarifier and primary effluent pump station areas.

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-35W 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 (TRVA), USACE, Tarrant County, the Texas Department of Transportation (TxDOT) and Streams and Valleys, Inc. It is anticipated 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, although no reimbursements have been received to date.

The relocation of water and sewer lines in conflict with the expansion/widening of IH-35W is being performed in partnership with TxDOT. TxDOT is widening IH-35W 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 \$70.8 million.

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Program Summary: Trinity River Vision and IH-35

	FY2018	FY2019	FY2020	FY2021	FY2022	Total 5-Year CIP
Projects						
IH35 Expansion - Water and Sewer	\$ 2,900,000	\$ 400,000	\$ 400,000	\$ -	\$ -	\$ 3,700,000
Trinity River Vision Program - Water and Sewer	\$ 7,067,300	\$ 26,939,000	\$ 19,681,000	\$ 1,889,000	\$ 11,524,693	\$ 67,100,993
Total	\$ 9,967,300	\$ 27,339,000	\$ 20,081,000	\$ 1,889,000	\$ 11,524,693	\$ 70,800,993
Funding Sources						
Revenue Bonds	\$ 9,967,300	\$ 27,339,000	\$ 20,081,000	\$ 1,889,000	\$ 11,524,693	\$ 70,800,993
Total Sources	\$ 9,967,300	\$ 27,339,000	\$ 20,081,000	\$ 1,889,000	\$ 11,524,693	\$ 70,800,993

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 million.

Program Summary: Major Transmission Mains

	FY2018	FY2019	FY2020	FY2021	FY2022	Total 5-Year CIP
Projects						
Cultural District - Water Line Replacement	\$ 468,000	\$ 8,806,000	\$ 168,000	\$ 7,876,000	\$ -	\$ 17,318,000
Major Transmission Mains Other Improvements	\$ 3,570,000	\$ 1,200,000	\$ 4,360,000	\$ 1,100,000	\$ 9,175,000	\$ 19,405,000
16" Transfer WSII to WSIII Pressure Plane	\$ -	\$ -	\$ -	\$ 408,672	\$ 4,150,000	\$ 4,558,672
Southeast Water Main Connections	\$ -	\$ 2,800,000	\$ -	\$ -	\$ -	\$ 2,800,000
54" NSIII Water Line - EMWTP to Hicks Field	\$ -	\$ -	\$ 733,000	\$ -	\$ 3,778,444	\$ 4,511,444
24" Holly Water Main - Churchill Road	\$ -	\$ 2,559,600	\$ -	\$ -	\$ -	\$ 2,559,600
Southside Water Maint to Serve Burleson and Crowley	\$ -	\$ 1,482,585	\$ 13,343,263	\$ -	\$ -	\$ 14,825,848
FM156 Water and Sewer Relocations	\$ 4,821,000	\$ -	\$ -	\$ -	\$ -	\$ 4,821,000
30" NSII Water Main - Northeast Extension	\$ 4,049,554	\$ -	\$ -	\$ -	\$ -	\$ 4,049,554
Water Line Replace - Southside Medical District	\$ 4,900,000	\$ 4,530,000	\$ 3,700,000	\$ -	\$ -	\$ 13,130,000
Total	\$ 17,808,554	\$ 21,378,185	\$ 22,304,263	\$ 9,384,672	\$ 17,103,444	\$ 87,979,118
Funding Sources						
Revenue Bonds	\$ 13,759,000	\$ 16,848,185	\$ 18,604,263	\$ 9,384,672	\$ 12,003,444	\$ 70,599,564
Cash	\$ -	\$ 4,530,000	\$ 3,700,000	\$ -	\$ 5,100,000	\$ 13,330,000
Legacy Water/Sewer Capital Fund	\$ 4,049,554	\$ -	\$ -	\$ -	\$ -	\$ 4,049,554
Total Sources	\$ 17,808,554	\$ 21,378,185	\$ 22,304,263	\$ 9,384,672	\$ 17,103,444	\$ 87,979,118

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FY2018 Project Descriptions:

- **Cultural District – Water Line Replacements:** This multi-phase project replaces and relocates existing undersized water lines 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.
- **Major Transmission Mains Other Improvements:** This funding provides for smaller and development-driven 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.
- **FM156 Water and Sewer Relocations:** This project consists of 8-inch 48-inch water and 12-inch 15-inch sanitary sewer relocations in conflict with TxDOT proposed roadway and storm sewer at the Heritage Trace Parkway, Harmon Road, Bailey Boswell Road and Basswood Boulevard intersections.
- **30-Inch Northside II Water Main -Northeast Extension:** This 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 and nearby wholesale water customers, the need for this water main has accelerated.

- **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.

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 Utility staff during periodic inspection or evaluations. Lake Worth projects are part of the City Council-approved Lake Worth CIIP Program funded primarily with gas well revenue. The total estimated spend over the next five years is \$161.4 million.

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Program Summary: Miscellaneous Facilities

Projects	FY2018	FY2019	FY2020	FY2021	FY2022	Total 5-Year CIP
Main 272 Replacement Clear Fork Sewer	\$ 2,000,000	\$ 1,000,000	\$ 16,000,000	\$ -	\$ -	\$ 19,000,000
Bonds Ranch Lift Stations	\$ -	\$ -	\$ 600,000	\$ -	\$ -	\$ 600,000
Denton Creek Lift Station	\$ -	\$ -	\$ -	\$ -	\$ 300,000	\$ 300,000
Live Oak Regional Lift Station and Force Main	\$ -	\$ -	\$ -	\$ -	\$ 400,000	\$ 400,000
Lake Arlington Lift Station and Force Main	\$ 3,000,000	\$ 5,000,000	\$ 15,000,000	\$ -	\$ -	\$ 23,000,000
Walsh Ranch Lift Station and Force Mains Phase IVB	\$ -	\$ -	\$ 200,000	\$ 1,288,000	\$ -	\$ 1,488,000
My H2O/Advanced Metering Infrastructure (AMI)	\$ 63,000,000	\$ -	\$ -	\$ -	\$ -	\$ 63,000,000
Lake Worth Dredging	\$ 400,000	\$ -	\$ -	\$ -	\$ -	\$ 400,000
Lake Worth Hike/Bike Trail System	\$ -	\$ 6,000,000	\$ 900,000	\$ 5,100,000	\$ -	\$ 12,000,000
Lake Worth Watercress Low Pressure Sewer System	\$ 400,000	\$ 3,100,000	\$ -	\$ -	\$ -	\$ 3,500,000
Love Circle Park Improvements	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000
Lakeside Settlement Agreement Utility Extension	\$ 3,000,000	\$ -	\$ -	\$ 2,000,000	\$ -	\$ 5,000,000
Lake Worth Dam Rehabilitation	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000
Jenkins Heights Lift Station and Force Mains	\$ -	\$ 2,200,000	\$ -	\$ -	\$ -	\$ 2,200,000
Westside Tanks	\$ 6,000,000	\$ -	\$ 1,650,000	\$ 12,000,000	\$ -	\$ 19,650,000
Westside Pump Station	\$ -	\$ -	\$ -	\$ 464,000	\$ 5,242,296	\$ 5,706,296
Northside Pump Station Expansion	\$ -	\$ 200,000	\$ -	\$ 1,000,000	\$ -	\$ 1,200,000
Calmont Tank Rehab	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000
Seminary Hills & Willow Springs Tank Rehab	\$ 1,720,000	\$ -	\$ -	\$ -	\$ -	\$ 1,720,000
Iron Horse Meter Station	\$ -	\$ -	\$ -	\$ -	\$ 800,000	\$ 800,000
Total	\$ 80,920,000	\$ 17,500,000	\$ 34,350,000	\$ 21,852,000	\$ 6,742,296	\$ 161,364,296
Funding Sources						
Revenue Bonds	\$ 13,720,000	\$ 8,400,000	\$ 32,650,000	\$ 13,464,000	\$ 6,742,296	\$ 74,976,296
Gas Well Revenues	\$ 1,000,000	\$ 9,100,000	\$ 900,000	\$ 5,100,000	\$ -	\$ 16,100,000
Sewer Impact Fees	\$ -	\$ -	\$ 800,000	\$ -	\$ -	\$ 800,000
TWDB SWIRFT	\$ 63,000,000	\$ -	\$ -	\$ -	\$ -	\$ 63,000,000
Legacy Water/Sewer Capital Fund	\$ -	\$ -	\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
Cash	\$ 3,200,000	\$ -	\$ -	\$ 1,288,000	\$ -	\$ 4,488,000
Total Sources	\$ 80,920,000	\$ 17,500,000	\$ 34,350,000	\$ 21,852,000	\$ 6,742,296	\$ 161,364,296

FY2018 Project Descriptions:

- **Main 272 Replacement Clear Fork Sewer:** This project consists of a wet weather lift station and force main designed to convey peak flows from the existing hydraulic bottleneck located near IH-30 and University Drive to the existing

gravity sewer lines west of downtown near the confluence of the Clear Fork and West Fork basins. (Carried over from FY2017.)

- **Lake Arlington Lift Station and Force Main:** This project consists of the installation of gravity sewer mains, a regional lift station, and

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approximately six miles of force main designed to convey peak flows from southeast Fort Worth and the wholesale customers of Burleson, Crowley, Everman and Forest Hill. The lift station is planned to be located at the Southeast Landfill property and will pump wastewater around the western shore of Lake Arlington, to connect to the existing trunk gravity sewer mains in the vicinity of Lancaster Avenue and Green Oaks Road. This project has been identified as a high priority in the Wastewater Master Plan due to the capacity limitations in the existing pipes, the occurrence of wet weather overflows, and the need to provide for future growth.

- **My H2O/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 (SWIFT) program. This program will give customers new tools and information to better understand and manage their water use, promote efficiencies from treatment to tap and improve processes and operations across the utility. 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.
- **Lake Worth Dredging:** This project consists of the permitting and engineering to secure an

Army Corps of Engineers environmental permit necessary for a dredging project to remove sediment from previously dredged areas in Lake Worth. (Carried over from FY2016-2017.)

- **Lake Worth Watercress Low Pressure Sewer System:** This project is a continuation of a program designed to remove septic tanks from properties along and in close proximity to Lake Worth. As part of this project, individual lot grinder pumps and a centralized low pressure collection system will be installed along Watercress Drive that will convey wastewater to the newly constructed Casino Beach Lift Station.
- **Love Circle Park Improvements:** This project will add park improvements including, but not limited to, 4,800 linear feet of six foot wide concrete trail, five solar security lights and seven park benches to fulfill the Love Circle Park Improvement Plan.
- **Lakeside Settlement Agreement Utility Extension:** This project will fulfill an agreement reached between the Town of Lakeside and the City of Fort Worth. Under the agreement, in April 2018 Lakeside will release the portion of their water Certificate of Convenience and Necessity (CCN) located within the City of Fort Worth, affecting 91 water customers. This project will install the water lines necessary to provide water service to these 91 customers after the CCN has been released.
- **Lake Worth Dam Rehabilitation:** This project consists of minor structural repairs to the Lake Worth Dam. (Carried over from FY2017.)

- **Westside Tanks:** This project includes the Westside V Elevated Storage Tank and Transmission Line, in which a new 1 million gallon elevated storage tank will be installed to serve the Westside V pressure plane. In 2016, the Westside V pressure plane was created by the startup of the Walsh Ranch Pump Station and the installation of the Morningstar flow control station. In its present state, the Walsh Ranch Pump Station must operate continuously in order to keep the system pressurized. The new elevated tank will allow the Walsh Pump Station to operate intermittently as needed to maintain storage within the tank, while providing both stable pressure and fire protection for the entire pressure plane, which includes developments such as Walsh Ranch, Morningstar, and Beggs Ranch.
- **Calmont, Seminary Hills & Willow Springs Tank Rehabilitation:** These projects involve repairing the existing coating system on the Calmont and Seminary Hills elevated water storage tanks which are twenty years old and have internal and external coating failures, resulting in corrosion of the steel structure. Rehabilitation of these two tanks will consist of removal of the interior and external coating system followed by a complete recoating of the tank steel surfaces. The Willow Springs Tank Rehabilitation will consist of the removal and replacement of the internal coating system within the tank. Recent inspection of this tank revealed several areas where the coating system had failed to properly adhere to the steel. Temporary repairs were made by staff, but in order to properly protect the tank, the existing coating system needs to be completely removed and replaced

Major Wasterwater 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 \$207.8 million.

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Program Summary: Major Wastewater Collectors

Projects	FY2018	FY2019	FY2020	FY2021	FY2022	Total 5-Year CIP
Main 210 Colonial Area Sewer Improvements	\$ 2,750,000	\$ -	\$ -	\$ -	\$ -	\$ 2,750,000
Main 325 Village Creek Basin Parallel Relief Sewer	\$ 9,000,000	\$ -	\$ -	\$ -	\$ -	\$ 9,000,000
Main 257 Village Creek Basin Parallel Relief Sewer	\$ 21,000,000	\$ -	\$ -	\$ -	\$ -	\$ 21,000,000
Sewer Extension - Sandy Lane/Trice Court	\$ -	\$ 300,000	\$ 1,300,000	\$ -	\$ -	\$ 1,600,000
Chisholm Trail Parkway Main 311 Abandonment and Lift Station	\$ 600,000	\$ -	\$ -	\$ -	\$ -	\$ 600,000
Main 402 Big Fossil Parallel Relief Sewer	\$ -	\$ 11,000,000	\$ 1,200,000	\$ -	\$ 10,000,000	\$ 22,200,000
Main 347/386 Upper Big Fossil Parallel Relief Sewer	\$ 6,500,000	\$ -	\$ -	\$ -	\$ -	\$ 6,500,000
Main 280/338 West Fork Rehabilitation	\$ -	\$ 8,250,000	\$ -	\$ -	\$ -	\$ 8,250,000
Wastewater Master Plan Update	\$ -	\$ -	\$ -	\$ 3,000,000	\$ -	\$ 3,000,000
Little Fossil Creek Interceptor Improvements	\$ 2,150,000	\$ 4,000,000	\$ -	\$ -	\$ -	\$ 6,150,000
Main 503 Village Creek Sewer Main Rehabilitation	\$ 5,527,189	\$ -	\$ -	\$ -	\$ -	\$ 5,527,189
Main 275 Sycamore Creek Basin Parallel Relief Sewer	\$ 4,650,000	\$ 7,240,000	\$ 1,200,000	\$ -	\$ 9,462,470	\$ 22,552,470
Major Wastewater Collectors Other Improvements	\$ -	\$ -	\$ -	\$ 1,850,000	\$ 9,568,480	\$ 11,418,480
Cultural District - Sewer Line Replacement	\$ 520,000	\$ -	\$ -	\$ -	\$ -	\$ 520,000
Eagle Mountain to Big Fossil Diversion	\$ 7,000,000	\$ -	\$ -	\$ -	\$ -	\$ 7,000,000
Upper Clear Fork Interceptor Improvements	\$ 2,500,000	\$ -	\$ -	\$ -	\$ -	\$ 2,500,000
Walsh Ranch Sewer Extension	\$ 3,500,000	\$ -	\$ -	\$ -	\$ -	\$ 3,500,000
Main 34, 100 and D100 Downtown Central District Sewer Replacements	\$ -	\$ 2,630,000	\$ -	\$ -	\$ -	\$ 2,630,000
Main 365 Marine Creek basin Parallel Relief Sewer	\$ 2,000,000	\$ 2,000,000	\$ 3,000,000	\$ -	\$ -	\$ 7,000,000
Main 615 Clear Fork Basin Replacement Interceptor	\$ -	\$ -	\$ 1,500,000	\$ 6,500,000	\$ 500,000	\$ 8,500,000
Main 295 Village Creek Basin Replacement Sewer	\$ -	\$ -	\$ 900,000	\$ 3,000,000	\$ 3,000,000	\$ 6,900,000
Main 199 West Fork Basin Parallel Relief Sewer Line	\$ 600,000	\$ -	\$ 4,000,000	\$ -	\$ -	\$ 4,600,000
Main 245 Parallel Interceptor	\$ 1,500,000	\$ 1,000,000	\$ 12,000,000	\$ -	\$ -	\$ 14,500,000
Main 513 Parallel Interceptor in the Clear Fork Basin	\$ 500,000	\$ -	\$ 3,000,000	\$ 400,000	\$ 3,000,000	\$ 6,900,000
Crowley Parallel Line in the Village Creek Basin	\$ 12,750,000	\$ -	\$ -	\$ -	\$ -	\$ 12,750,000
Parallel 30" Interceptor in the Clear Fork Basin	\$ -	\$ -	\$ -	\$ 600,000	\$ 4,657,730	\$ 5,257,730
New Interceptor in the Clear Fork Basin	\$ -	\$ -	\$ -	\$ 800,000	\$ 3,908,713	\$ 4,708,713
Total	\$ 83,047,189	\$ 36,420,000	\$ 28,100,000	\$ 16,150,000	\$ 44,097,393	\$ 207,814,582
Funding Sources						
Revenue Bonds	\$ 74,770,000	\$ 27,870,000	\$ 26,800,000	\$ 13,150,000	\$ 33,930,950	\$ 176,520,950
TWDB State Revolving Loan Fund	\$ 6,827,189	\$ 7,500,000	\$ -	\$ -	\$ -	\$ 14,327,189
Cash	\$ -	\$ 300,000	\$ 1,300,000	\$ -	\$ 10,166,443	\$ 11,766,443
Sewer Impact Fees	\$ -	\$ -	\$ -	\$ 3,000,000	\$ -	\$ 3,000,000
Legacy Water/Sewer Capital Fund	\$ 1,450,000	\$ 750,000	\$ -	\$ -	\$ -	\$ 2,200,000
Total Sources	\$ 83,047,189	\$ 36,420,000	\$ 28,100,000	\$ 16,150,000	\$ 44,097,393	\$ 207,814,582

FY2018 Project Descriptions:

- **Main 210 Colonial Area Sewer Improvements:**
This project will replace an existing undersized

and deteriorated sewer main located in a sanitary sewer easement, with a portion aligned within the Colonial Country Club property. The new sewer line planned to serve this area will be

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sized to convey future peak flows and located within street right of way to provide better access for future maintenance activities.

- **Main 325 Village Creek Basin Parallel Relief Sewer:** This project provides for the installation of a parallel relief sewer from the M-257 connection upstream to the Crowley wholesale wastewater meter station. It is anticipated that capital contributions will be received from Crowley for its pro-rata share of the construction costs, based on wastewater design flows. This project has been identified as a high priority in the Wastewater Master Plan due to capacity limitations of the existing sewer main. (Carried over from FY2017.)
- **Main 257 Village Creek Basin Parallel Relief Sewer:** This is a multi-phase project to install a parallel relief sewer main from the Forest Hill connection south to the Burleson wholesale wastewater meter station. It is anticipated that capital contributions will be received from both Burleson and Crowley for their pro-rata share of the construction costs, based on wastewater design flows. This project has been identified as a high priority in the Wastewater Master Plan due to capacity limitations of the existing sewer main.
- **Chisholm Trail Parkway Main 311 Abandonment and Lift Station:** This project is driven by a developer agreement, whereby the Water Department is obligated to install a small wastewater lift station to convey wastewater flows from an area located north of the Trinity River and west of Bryant Irvin Rd. The Department has requested the development review an option to collect wastewater from this

area using gravity sewer lines in lieu of the proposed lift station. This proposal is being evaluated at this time, with the initiation of the project dependent on the outcome of the developer's decision on this proposal. (Carried over from FY2016-2017.)

- **Main 347/386 Upper Big Fossil Relief Sewer:** This project is part of a regional plan to transfer wastewater generated in the Eagle Mountain Lake watershed to the Big Fossil sewer collection system, thereby bypassing the Marine Creek and Downtown sewer collection systems. As part of this project, approximately 7,000 linear feet of the existing undersized 24-inch sewer line will be paralleled with a 48-inch relief sewer line, providing the additional capacity needed to convey peak flows from future growth.
- **Little Fossil Creek Interceptor Improvements:** This is a multi-year project to provide additional capacity to the Little Fossil Creek sewer collection system, which provides service to Fort Worth retail customers, as well as the wholesale customers of Haltom City, Saginaw, and Blue Mound. The first phase of this project will construct a replacement 48-inch sewer line starting at the downstream connection with the 90/96-inch diameter West Fork Trunk Sewer Line and extend north, crossing Airport Freeway.
- **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 project was identified by the Utility's Field Operations staff as having high maintenance due to corrosion

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and sewer overflow problems into Lake Arlington. (Carried over from FY2017.)

- **Main 275 Sycamore Creek Parallel Relief Interceptor:** This is a multi-phase project that will initially install a parallel relief sewer from IH-30 south through the Sycamore Creek Golf Course to Vickery Boulevard. Future phases will continue the parallel relief sewer line further upstream through Cobb Park to Berry Street. This project has been identified as a high priority in the Wastewater Master Plan due to capacity limitations of the existing sewer main. (Carried over from FY2017.)
- **Cultural District – Sewer Line Replacement:** This multi-phase project replaces and relocates the existing undersized sewer 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.
- **Eagle Mountain to Big Fossil Diversion:** The existing Dosier Creek Lift Station currently pumps from the Eagle Mountain drainage basin to the Marine Creek drainage basin via a single 12-inch force main. This project will install a new larger diameter force main from the existing Dosier Creek Lift Station to the Big Fossil drainage basin. The project also includes a gravity sewer extension within the Big Fossil drainage basin. This project has been identified as a high priority in the Wastewater Master Plan due to capacity limitations of existing pipes in the Marine Creek Basin, and will improve system redundancy by providing two discharge force mains from the Dosier Creek Lift Station.
- **Upper Clear Fork Interceptor Improvements:** This project will replace portions of the existing large diameter trunk sewer system identified during field inspections to be structurally damaged from corrosion.
- **Walsh Ranch Sewer Extension:** The Walsh Ranch Development agreement contains certain conditions that trigger Fort Worth to make utility extensions. The submittal of a preliminary plat for an area located south of IH-30 within the Walsh Ranch property requires the extension of a sewer trunk main from the existing main located at the Lost Creek Golf Course upstream to the Walsh Ranch Property.
- **Main 365 Marine Creek Basin Parallel Relief Sewer:** This project consists of the rehabilitation of Marine Creek Interceptor lines along Huffines Road, Cromwell Marine Creek Road and Boat Club Road. (Carried over from FY2017.)
- **Main 199 West Fork Basin Parallel Relief Sewer Line:** This project will parallel an existing sewer main that is undersized and needed to convey existing flows as well as flows from future growth in west Fort Worth. This project will install a parallel relief line south of the West Fork of the Trinity River, located within the City of Westworth Village.
- **Main 245 Parallel Interceptor:** This project consists of the installation of approximately 14,000 linear feet of relief trunk sewer main, as well as a siphon crossing of the Trinity River, connecting the two downtown deep tunnel sewers with the two West Fork trunk sewers near 1st Street, north of Gateway Park. This

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project will improve wastewater conveyance capacity to an area identified in the Wastewater Master Plan as needing additional capacity to convey future peak wastewater flows.

- **Main 513 Parallel Interceptor in the Clear Fork Basin:** This project will install a parallel relief sewer interceptor through the City of Benbrook designed to provide increased capacity for future growth west of the Highway 377 corridor, including such developments as Ventana, Bella Flora, Veal Ranch and Walsh Ranch. Design and construction will be coordinated with the City of Benbrook and the Benbrook Water Authority.
- **Crowley Parallel Line in the Village Creek Basin:** This project will extend a parallel relief sewer through the City of Crowley to the west city limit boundary, where Fort Worth developments such as Tarleton/Rock GLO will make connections. This project also consists of two new wholesale meter stations as well as the permanent abandonment of two existing sanitary sewer lift stations (Carried over from FY2017.)

proposed revitalization area. All CFAs with City participation above \$100,000 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 \$30 million.

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 serve a proposed development to the size required by the Water and/or Wastewater Master Plan to provide regional 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

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Program Summary: Community Facilities Agreements

	FY2018	FY2019	FY2020	FY2021	FY2022	Total 5-Year CIP
Projects						
Annexation Program - Water and Sewer	\$ -	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,000,000
Community Facility Agreement Program	\$ 8,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 28,000,000
Total	\$ 8,000,000	\$ 5,500,000	\$ 5,500,000	\$ 5,500,000	\$ 5,500,000	\$ 30,000,000
Funding Sources						
Revenue Bonds	\$ 5,000,000	\$ 5,500,000	\$ 5,500,000	\$ 5,500,000	\$ 5,500,000	\$ 27,000,000
Legacy Water/Sewer Capital Fund	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -	\$ 3,000,000
Total Sources	\$ 8,000,000	\$ 5,500,000	\$ 5,500,000	\$ 5,500,000	\$ 5,500,000	\$ 30,000,000

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 begins the process of replacing all public side lead services from the water system. The total estimated spend over the next five years is \$79.3 million.

Program Summary: Rehabilitation and Replacement

	FY2018	FY2019	FY2020	FY2021	FY2022	Total 5-Year CIP
Projects						
Miscellaneous Water and Sewer Line Contracts	\$ 15,150,000	\$ 15,150,000	\$ 15,150,000	\$ 16,750,000	\$ 16,750,000	\$ 78,950,000
Water/Wastewater Impact Fee Study	\$ -	\$ 300,000	\$ -	\$ -	\$ -	\$ 300,000
Total	\$ 15,150,000	\$ 15,450,000	\$ 15,150,000	\$ 16,750,000	\$ 16,750,000	\$ 79,250,000
Funding Sources						
Sewer Impact Fees	\$ -	\$ 150,000	\$ -	\$ -	\$ -	\$ 150,000
Water Impact Fees	\$ -	\$ 150,000	\$ -	\$ -	\$ -	\$ 150,000
Cash	\$ 15,150,000	\$ 15,150,000	\$ 15,150,000	\$ 16,750,000	\$ 16,750,000	\$ 78,950,000
Total Sources	\$ 15,150,000	\$ 15,450,000	\$ 15,150,000	\$ 16,750,000	\$ 16,750,000	\$ 79,250,000

FY2018 Project Descriptions:

- **Miscellaneous Water and Sewer Line Contracts:** These contracts fund 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.

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Street Maintenance

Outlined in the table below is funding for the replacement of water and sewer lines that are old and/or have a high maintenance record in streets that are scheduled for reconstruction. Some of 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 \$148.5 million.

Program Summary: Street Maintenance

	FY2018	FY2019	FY2020	FY2021	FY2022	Total 5-Year CIP
Projects						
Water and Sewer Program - Streets	\$ 27,241,925	\$ 28,688,736	\$ 31,265,168	\$ 36,556,431	\$ 24,733,697	\$ 148,485,957
Total	\$ 27,241,925	\$ 28,688,736	\$ 31,265,168	\$ 36,556,431	\$ 24,733,697	\$ 148,485,957
Funding Sources						
Legacy Water/Sewer Capital Fund	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cash	\$ 27,241,925	\$ 28,688,736	\$ 31,265,168	\$ 36,556,431	\$ 24,733,697	\$ 148,485,957
Total Sources	\$ 27,241,925	\$ 28,688,736	\$ 31,265,168	\$ 36,556,431	\$ 24,733,697	\$ 148,485,957

Sanitary Sewer Overflow Program

Projects to 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 \$62.5 million.

Program Summary: Sanitary Sewer Overflow Initiative Program

	FY2018	FY2019	FY2020	FY2021	FY2022	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
ICAP High Priority Pipeline Replacements/Upgrades	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 12,500,000
Total	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 62,500,000
Funding Sources						
Cash	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 62,500,000
Total Sources	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 62,500,000

PAST ACCOMPLISHMENTS

Over the last five years, the Utility has appropriated \$113 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, establish operational efficiencies, and facilitate partnerships with outside entities.

The significant projects for which funds were appropriated in FY2013-2017 include:

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- **Main 257 Village Creek Basin Parallel Relief Sewer:** Part 1 of this project is for approximately two miles of 42-inch to 60-inch diameter parallel relief sewer main to be installed in the Village Creek sewer basin. Construction of this project will occur in three phases, with the first phase bid in July 2017 and the remaining two construction packages scheduled to advertise in FY 18. In addition to the engineering work, negotiations with both Burleson and Crowley are ongoing related to cost participation in the capacity of this parallel relief sewer line.
- **Love Circle Water and Sewer:** The recent construction of the Casino Beach Lift Station allows for gravity and low pressure sewer lines to be extended to areas along the north shore of Lake Worth. As part of this project, low pressure sewer lines are being extended to properties along Love Circle. Grinder pumps are also being installed to connect properties to the low pressure sewer. Because installation of the low pressure sewer and grinder pumps must be accompanied by re-plumbing and permanent abandonment of the lot septic tank, extensive coordination with the customer is required.
- **Village Creek - Grit System and Flow Consolidation:** Design was initiated in 2017 for a project to remove fine grit from the wastewater stream. In the past, grit has proved to be a maintenance problem at the Village Creek Plant, requiring frequent cleaning of digesters and basins, as well as premature wear of mechanical equipment. The grit removal project should decrease maintenance expense associated with grit removal and allow more efficient operation of the anaerobic digesters. Construction will begin in FY2018.
- **Village Creek - Thickener Improvements:** This project will improve thickening of primary and waste activated sludge prior to conveyance to the anaerobic digesters. This improvement allows more efficient use of the existing digester volume, delays the need for digester capacity expansion and provides a higher percent solids sludge to the dewatering facility for processing. Design was initiated on this project in FY2017.
- **Eagle Mountain Water Treatment Plant Expansion:** This project will expand the plant from 105 MGD capacity to 140 MGD. Design is currently scheduled to begin in FY2021, with construction commencing beyond the five year window.
- **Rolling Hills Water Treatment Plant Expansion:** This project will expand the plant from 200 MGD capacity to 250 MGD. Design and

LOOKING TO THE FUTURE

The Water and Wastewater Master Plans 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 improve accuracy, the Master Plans are updated every ten years - or earlier 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 Capital Plan are:

City of Fort Worth
5-year Capital Improvement Plan
Fiscal Years 2018-2022

Water

construction are currently scheduled beyond the five year window.

- **Westside Water Treatment Plant Phased Expansion:** This series of projects will expand the plant from 18 MGD capacity to 35 MGD, in 3 MGD increments, beyond the five year window.
- **Village Creek Water Reclamation Facility Expansion:** This project will expand the plant from 166 MGD rated capacity to 191 MGD rated capacity and will include new processes for nutrient removal and enhanced disinfection. Design and construction are currently scheduled beyond the five year window.
- **Mary's Creek Water Reclamation Facility:** This project will construct the new water reclamation facility on the west side of Fort Worth. Design is currently scheduled to begin in FY2019, with construction commencing beyond the five year window.

**City of Fort Worth
5-year Capital Improvement Plan
Fiscal Years 2018-2022**

Water

EXHIBITS

- FY2018-2022 Water and Wastewater 5-year CIP
- FY2018 Vehicle and Equipment Plan

FY2018-2022 Water and Wastewater 5-Year Capital Improvement Plan

Funding Source	Category	Project	2018	2019	2020	2021	2022	5 Year Total
Revenue Bonds	Community Facilities Agreement	Annexation Program- Water and Sewer		\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	\$ 2,000,000
Revenue Bonds	Community Facilities Agreement	Community Facility Agreements Program	\$ 5,000,000.00	\$ 5,000,000.00	\$ 5,000,000.00	\$ 5,000,000.00	\$ 5,000,000.00	\$ 25,000,000
Legacy Water/Sewer Capital Fund	Community Facilities Agreement	Community Facility Agreements Program	\$ 3,000,000.00					\$ 3,000,000
		Total Community Facility Agreements	\$ 8,000,000	\$ 5,500,000	\$ 5,500,000	\$ 5,500,000	\$ 5,500,000	\$ 30,000,000
Revenue Bonds	Major Transmission Mains	Cultural District - Water Line Replacement	\$ 468,000	\$ 8,806,000	\$ 168,000	\$ 7,876,000		\$ 17,318,000
Revenue Bonds	Major Transmission Mains	Major Transmission Mains Other Improvements	\$ 3,570,000	\$ 1,200,000	\$ 4,360,000	\$ 1,100,000	\$ 8,225,000	\$ 18,455,000
Cash	Major Transmission Mains	Major Transmission Mains Other Improvements					\$ 950,000	\$ 950,000
Cash	Major Transmission Mains	16" Transfer WSII to WSII Pressure Plane					\$ 408,672	\$ 408,672
Revenue Bonds	Major Transmission Mains	16" Transfer WSII to WSII Pressure Plane				\$ 408,672		\$ 408,672
Revenue Bonds	Major Transmission Mains	Southeast Water Main Connections		\$ 2,800,000				\$ 2,800,000
Revenue Bonds	Major Transmission Mains	54" NSII Water Line - EMWTP to Hicks Field			\$ 733,000		\$ 3,778,444	\$ 4,511,444
Revenue Bonds	Major Transmission Mains	24" Holly Water Main - Churchhill Road		\$ 2,559,600				\$ 2,559,600
Revenue Bonds	Major Transmission Mains	Southside Water Maint to Serve Burleson and Crowley		\$ 1,482,585	\$ 13,349,263			\$ 14,825,848
Revenue Bonds	Major Transmission Mains	FM156 Water and Sewer Relocations	\$ 4,821,000					\$ 4,821,000
Legacy Water/Sewer Capital Fund	Major Transmission Mains	30" NSII Water Main - Northeast Extension	\$ 4,049,554					\$ 4,049,554
Revenue Bonds	Major Transmission Mains	Water Line Replace - Southside Medical District	\$ 4,900,000					\$ 4,900,000
Cash	Major Transmission Mains	Water Line Replace - Southside Medical District		\$ 4,530,000	\$ 3,700,000			\$ 8,230,000
		Total Major Transmission Mains	\$ 17,808,554	\$ 21,378,185	\$ 22,304,263	\$ 9,384,672	\$ 17,103,444	\$ 87,979,118
TWDB State Revolving Loan Fund	Major Wastewater Collectors	Main 210 Colonial Area Sewer Improvements	\$ 2,500,000					\$ 2,500,000
Legacy Water/Sewer Capital Fund	Major Wastewater Collectors	Main 210 Colonial Area Sewer Improvements	\$ 250,000					\$ 250,000
Revenue Bonds	Major Wastewater Collectors	Main 325 Village Creek Basin Parallel Relief Sewer	\$ 9,000,000					\$ 9,000,000
Revenue Bonds	Major Wastewater Collectors	Main 257 Village Creek Basin Parallel Relief Sewer	\$ 21,000,000					\$ 21,000,000
Cash	Major Wastewater Collectors	Sewer Extension - Sandy Lane/Trice Court		\$ 300,000	\$ 1,300,000			\$ 1,600,000
Revenue Bonds	Major Wastewater Collectors	Chisholm Trail Parkway Main 311 Abandonment and Lift Station	\$ 600,000					\$ 600,000
Revenue Bonds	Major Wastewater Collectors	Main 402 Big Fossil Parallel Relief Sewer		\$ 11,000,000	\$ 1,200,000		\$ 10,000,000	\$ 22,200,000
Revenue Bonds	Major Wastewater Collectors	Main 347/386 Upper Big Fossil Parallel Relief Sewer	\$ 6,500,000					\$ 6,500,000
TWDB State Revolving Loan Fund	Major Wastewater Collectors	Main 280/338 West Fork Rehabilitation		\$ 7,500,000				\$ 7,500,000
Legacy Water/Sewer Capital Fund	Major Wastewater Collectors	Main 280/338 West Fork Rehabilitation		\$ 750,000				\$ 750,000
Sewer Impact Fees	Major Wastewater Collectors	Wastewater Master Plan Update				\$ 3,000,000		\$ 3,000,000
Revenue Bonds	Major Wastewater Collectors	Little Fossil Creek Interceptor Improvements	\$ 2,150,000	\$ 4,000,000				\$ 6,150,000
Legacy Water/Sewer Capital Fund	Major Wastewater Collectors	Main 503 Village Creek Sewer Main Rehabilitation	\$ 1,200,000					\$ 1,200,000
TWDB State Revolving Loan Fund	Major Wastewater Collectors	Main 503 Village Creek Sewer Main Rehabilitation	\$ 4,327,189					\$ 4,327,189
Revenue Bonds	Major Wastewater Collectors	Main 275 Sycamore Creek Basin Parallel Relief Sewer	\$ 4,650,000	\$ 7,240,000	\$ 1,200,000		\$ 9,462,470	\$ 22,552,470
Revenue Bonds	Major Wastewater Collectors	Major Wastewater Collectors Other Improvements				\$ 1,850,000	\$ 7,968,480	\$ 9,818,480
Cash	Major Wastewater Collectors	Major Wastewater Collectors Other Improvements					\$ 1,600,000	\$ 1,600,000
Revenue Bonds	Major Wastewater Collectors	Cultural District - Sewer Line Replacement	\$ 520,000					\$ 520,000
Revenue Bonds	Major Wastewater Collectors	Eagle Mountain to Big Fossil Diversion	\$ 7,000,000					\$ 7,000,000
Revenue Bonds	Major Wastewater Collectors	Upper Clear Fork Interceptor Improvements	\$ 2,500,000					\$ 2,500,000
Revenue Bonds	Major Wastewater Collectors	Walsh Ranch Sewer Extension	\$ 3,500,000					\$ 3,500,000
Revenue Bonds	Major Wastewater Collectors	Main 34, 100 and D100 Downtown Central District Sewer Replacements		\$ 2,630,000				\$ 2,630,000
Revenue Bonds	Major Wastewater Collectors	Main 365 Marline Creek basin Parallel Relief Sewer	\$ 2,000,000	\$ 2,000,000	\$ 3,000,000			\$ 7,000,000
Revenue Bonds	Major Wastewater Collectors	Main 615 Clear Fork Basin Replacement Interceptor			\$ 1,500,000	\$ 6,500,000	\$ 500,000	\$ 8,500,000
Revenue Bonds	Major Wastewater Collectors	Main 295 Village Creek Basin Replacement Sewer			\$ 900,000	\$ 3,000,000	\$ 3,000,000	\$ 6,900,000
Revenue Bonds	Major Wastewater Collectors	Main 189 West Fork Basin Parallel Relief Sewer Line	\$ 600,000		\$ 4,000,000			\$ 4,600,000
Revenue Bonds	Major Wastewater Collectors	Main 245 Parallel Interceptor	\$ 1,500,000	\$ 1,000,000	\$ 12,000,000			\$ 14,500,000
Revenue Bonds	Major Wastewater Collectors	Main 513 Parallel Interceptor in the Clear Fork Basin	\$ 500,000		\$ 3,000,000	\$ 400,000	\$ 3,000,000	\$ 6,900,000
Revenue Bonds	Major Wastewater Collectors	Crowley Parallel Line in the Village Creek Basin	\$ 12,750,000					\$ 12,750,000
Cash	Major Wastewater Collectors	Parallel 30" Interceptor in the Clear Fork Basin					\$ 4,657,730	\$ 4,657,730
Revenue Bonds	Major Wastewater Collectors	Parallel 30" Interceptor in the Clear Fork Basin				\$ 600,000		\$ 600,000
Cash	Major Wastewater Collectors	Parallel 30" Interceptor in the Clear Fork Basin					\$ 3,808,713	\$ 3,808,713
Revenue Bonds	Major Wastewater Collectors	New Interceptor in the Clear Fork Basin				\$ 800,000		\$ 800,000
		Total Major Wastewater Collectors	\$ 9,847,189	\$ 36,420,000	\$ 28,100,000	\$ 16,150,000	\$ 44,037,393	\$ 207,814,582

City of Fort Worth
5-year Capital Improvement Plan
Fiscal Years 2018-2022

Water

Water and Wastewater 5-year Capital Improvement Plan FY2018-2022 – Continued

Funding Source	Category	Project	2018	2019	2020	2021	2022	5 Year Total
Revenue Bonds	Miscellaneous Facilities	Imain 272 Replacement Clear Fork Sewer	\$2,000,000	\$1,000,000	\$16,000,000			\$ 19,000,000
Sewer Impact Fees	Miscellaneous Facilities	Bonds Ranch Lift Station			\$600,000			\$ 600,000
Revenue Bonds	Miscellaneous Facilities	Denton Creek Lift Station					\$300,000	\$ 300,000
Revenue Bonds	Miscellaneous Facilities	Live Oak Regional Lift Station and Force Main					\$400,000	\$ 400,000
Revenue Bonds	Miscellaneous Facilities	Lake Arlington Lift Station and Force Main	\$3,000,000	\$5,000,000	\$15,000,000			\$ 23,000,000
Sewer Impact Fees	Miscellaneous Facilities	Walsh Ranch Lift Station and Force Mains Phase IVB			\$700,000			\$ 700,000
Cash	Miscellaneous Facilities	Walsh Ranch Lift Station and Force Mains Phase IVB				\$1,288,000		\$ 1,288,000
TWDB SWIRFT	Miscellaneous Facilities	Any H2O/Advanced Metering Infrastructure (AMI)	\$63,000,000					\$ 63,000,000
Gas Well Revenues	Miscellaneous Facilities	Lake Worth Dredging	\$400,000					\$ 400,000
Gas Well Revenues	Miscellaneous Facilities	Lake Worth Hike/Bike Trail System		\$600,000	\$900,000	\$1,000,000		\$ 3,500,000
Gas Well Revenues	Miscellaneous Facilities	Lake Worth Watercess Low Pressure Sewer System	\$400,000	\$3,100,000				\$ 3,500,000
Gas Well Revenues	Miscellaneous Facilities	Love Circle Park Improvements	\$200,000					\$ 200,000
Cash	Miscellaneous Facilities	Lakeside Settlement Agreement Utility Extension	\$3,000,000					\$ 3,000,000
Legacy Water/Sewer Capital Fund	Miscellaneous Facilities	Lakeside Settlement Agreement Utility Extension				200,000		\$ 200,000
Cash	Miscellaneous Facilities	Lake Worth Dam Rehabilitation	200,000					\$ 200,000
Revenue Bonds	Miscellaneous Facilities	Jenkins Heights Lift Station and Force Mains		\$2,200,000				\$ 2,200,000
Revenue Bonds	Miscellaneous Facilities	Westside Tanks	\$6,000,000		\$1,650,000	\$12,000,000		\$ 19,650,000
Revenue Bonds	Miscellaneous Facilities	Westside Pump Station				\$464,000	\$5,242,296	\$ 5,706,296
Revenue Bonds	Miscellaneous Facilities	Northside Pump Station Expansion		\$200,000		\$1,000,000		\$ 1,200,000
Revenue Bonds	Miscellaneous Facilities	Calmont Tank Rehab	\$1,000,000					\$ 1,000,000
Revenue Bonds	Miscellaneous Facilities	Seminary Hills & Willow Springs Tank Rehab	\$1,720,000					\$ 1,720,000
Revenue Bonds	Miscellaneous Facilities	Iron Horse Meter Station					\$800,000	\$ 800,000
		Total Miscellaneous Facilities	\$ 80,920,000	\$ 17,500,000	\$ 34,350,000	\$ 21,852,000	\$ 6,742,296	\$ 161,364,296
Cash	Rehabilitation and Replacement	Miscellaneous Water and Sewer Line Contracts	\$15,150,000	\$15,150,000	\$15,150,000	\$16,750,000	\$16,750,000	\$ 78,950,000
Sewer Impact Fees	Rehabilitation and Replacement	Water/Wastewater Impact Fee Study		\$150,000				\$ 150,000
Water Impact Fees	Rehabilitation and Replacement	Water/Wastewater Impact Fee Study		\$150,000				\$ 150,000
		Total Rehabilitation and Replacement	\$ 15,150,000	\$ 15,450,000	\$ 15,150,000	\$ 16,750,000	\$ 16,750,000	\$ 79,250,000
Cash	Sanitary Sewer Overflow Program	Sanitary Sewer Overflow Initiative	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$ 50,000,000
Cash	Sanitary Sewer Overflow Program	ICAP High Priority Pipeline Replacements/Upgrades	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$ 12,500,000
		Total Sanitary Sewer Overflow Program	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 12,500,000	\$ 62,500,000
Cash	Street Maintenance	Water and Sewer Program Streets	\$27,241,925	\$28,688,736	\$31,285,168	\$36,556,431	\$24,733,697	\$ 148,485,957
		Total Street Maintenance	\$ 27,241,925	\$ 28,688,736	\$ 31,285,168	\$ 36,556,431	\$ 24,733,697	\$ 148,485,957
Revenue Bonds	Trinity River Vision & IH35	Trinity River Vision Program - Water and Sewer	\$7,067,300	\$26,938,000	\$19,681,000	\$1,889,000	\$11,524,693	\$ 67,100,993
Revenue Bonds	Trinity River Vision & IH35	IH35 Expansion - Water and Sewer	\$2,900,000	\$400,000	\$400,000			\$ 3,700,000
		Total Trinity River Vision & IH35	\$ 9,967,300	\$ 27,338,000	\$ 20,081,000	\$ 1,889,000	\$ 11,524,693	\$ 70,800,993
Gas Well Revenues	Water Reclamation Facilities	Village Creek - Chlorine Conversion & Enclosure Project	\$3,250,000					\$ 3,250,000
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 - Grit System Flow Consolidation	\$300,000	\$17,100,000				\$ 17,400,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - Primary Clarifiers			\$3,000,000		\$16,000,000	\$ 19,000,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - Bio-Solid Master Plan Implementation	\$8,000,000	\$2,500,000		\$42,500,000		\$ 53,000,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - Disinfection Alternatives				\$1,500,000		\$ 1,500,000
Sewer Impact Fees	Water Reclamation Facilities	Mary's Creek - Water Reclamation Facility		\$1,500,000		\$4,500,000		\$ 6,000,000
Revenue Bonds	Water Reclamation Facilities	Village Creek Minor Improvements Bucket	\$1,630,000		\$230,000	\$330,000	\$4,100,000	\$ 6,290,000
Gas Well Revenues	Water Reclamation Facilities	Village Creek - Energy Efficiency and Performance Improvements	\$500,000	\$4,000,000				\$ 4,500,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - MCC Replacement	\$7,500,000	\$7,500,000	\$7,000,000			\$ 22,000,000
Cash	Water Reclamation Facilities	Village Creek - Administrative Complex Foundation Rehab			\$200,000			\$ 200,000
Revenue Bonds	Water Reclamation Facilities	Village Creek - Thickener Improvements		\$14,800,000				\$ 14,800,000
Sewer Impact Fees	Water Reclamation Facilities	Village Creek - Facilities Plan		\$1,000,000				\$ 1,000,000
		Total Water Reclamation Facilities	\$ 21,180,000	\$ 48,900,000	\$ 10,930,000	\$ 48,830,000	\$ 20,100,000	\$ 149,940,000
Revenue Bonds	Water Treatment Plants	North Holly Water Treatment Plant Sludge Collection System	\$750,000	\$3,000,000				\$ 3,750,000
Revenue Bonds	Water Treatment Plants	Zebra Mussel Raw Water Chlorination Station			\$250,000			\$ 250,000
Water Impact Fees	Water Treatment Plants	Westside Water Treatment Plant Expansion		\$400,000	\$500,000			\$ 900,000
Revenue Bonds	Water Treatment Plants	South Holly Flocculator Improvements		\$600,000	\$4,500,000			\$ 5,100,000
Revenue Bonds	Water Treatment Plants	Eagle Mountain Water Treatment Plant Expansion				\$5,000,000		\$ 5,000,000
		Total Water Treatment Plants	\$ 750,000	\$ 4,000,000	\$ 2,250,000	\$ 5,000,000	\$ -	\$ 15,000,000
		Total FY2018-2022 CIP	\$ 276,664,969	\$ 217,678,921	\$ 185,430,431	\$ 174,417,103	\$ 159,051,523	\$ 1,013,134,946

FY28-22 Capital Projects by Funding Source	2018	2019	2020	2021	2022	5 Year Total
Revenue Bonds	\$ 135,396,300	\$ 131,957,185	\$ 119,115,263	\$ 92,717,672	\$ 89,801,383	\$ 568,987,803
Gas Well Revenues	\$ 4,750,000	\$ 19,100,000	\$ 900,000	\$ 5,100,000	\$ -	\$ 23,850,000
Cash	\$ 58,091,925	\$ 61,168,736	\$ 64,115,168	\$ 67,094,431	\$ 69,250,140	\$ 319,720,400
Sewer Impact Fees	\$ -	\$ 2,850,000	\$ 800,000	\$ 7,500,000	\$ -	\$ 10,950,000
Water Impact Fees	\$ -	\$ 550,000	\$ 500,000	\$ -	\$ -	\$ 1,050,000
TWDB State Revolving Loan Fund	\$ 6,827,189	\$ 7,500,000	\$ -	\$ -	\$ -	\$ 14,327,189
TWDB SWIRFT	\$ 63,000,000	\$ -	\$ -	\$ -	\$ -	\$ 63,000,000
Legacy Water/Sewer Capital Fund	\$ 8,498,554	\$ 750,000	\$ -	\$ 2,000,000	\$ -	\$ 11,248,554
	\$ 276,664,969	\$ 217,678,921	\$ 185,430,431	\$ 174,417,103	\$ 159,051,523	\$ 1,013,134,946

**City of Fort Worth
5-year Capital Improvement Plan
Fiscal Years 2018-2022**

Water

**FY2018 VEHICLE AND EQUIPMENT PLAN
WATER**

No. of Items	Item Description	Department ID (Center)	Amount Budgeted
0601005: Safety & Security			
1	Kubota 2 Seater, Enclosed Cab w/ Removable Doors	0601005	\$19,000
1	1/2 Ton PU 2WD Ext Cab Ladder & Headache Rack Tool Boxes Liftgate	0601005	\$30,000
	Subtotal for 0601005		\$49,000
0602501: Engineering			
1	1/2 ton PU Crew Cab 4WD	0602501	\$29,000
	Subtotal for 0602501		\$29,000
0603001: Laboratory			
1	1/2 Ton PU 4WD Ext Cab LED Lightbar, AVL	0603001	\$35,000
	Subtotal for 0603001		\$35,000
0604009: Meter Services			
1	Mid-Size PU 4WD 3.6L Eng Crew Cab Side Mounted Tool Boxes Bed Liner LED Lightbar (Toyota Tacoma)	0604009	\$33,000
1	Mid-Size PU 4WD 3.6L Eng Crew Cab Side Mounted Tool Boxes Bed Liner LED Lightbar (Toyota Tacoma)	0604009	\$33,000
1	Mid-Size PU 4WD 3.6L Eng Crew Cab Side Mounted Tool Boxes Bed Liner LED Lightbar (Toyota Tacoma)	0604009	\$33,000
1	Mid-Size PU 4WD 3.6L Eng Crew Cab Side Mounted Tool Boxes Bed Liner LED Lightbar (Toyota Tacoma)	0604009	\$33,000
1	Mid-Size PU 4WD 3.6L Eng Crew Cab Side Mounted Tool Boxes Bed Liner LED Lightbar (Toyota Tacoma)	0604009	\$33,000
1	SUV Mid-Size	0604009	\$33,000
	Subtotal for 0604009		\$198,000
0605002: N. and S. Holly Water Treatment Plants			
1	Nitrogen Compressor for the N. Holly Ozone System	0605002	\$75,000
2	Ross Valve Rebuild Kits for N. Holly High Service Pump #2 & #8	0605002	\$12,000
1	Low Concentration Ozone Meter for Holly	0605002	\$6,000
	Subtotal for 0605002		\$93,000
0605003: Rolling Hills Water Treatment Plant			
1	Chlorine/Ammonia Leak Detection System	0605003	\$30,000
1	93T Portable Flow Meter	0605003	\$11,000
1	70-Ton Chiller for the R. Hills Admin. Bldg.	0605003	\$50,000
2	Chiller Pumps	0605003	\$14,000
1	3/4 ton Service Truck Crew Cab 4WD AVL	0605003	\$45,000
	Subtotal for 0605003		\$150,000
0605004: Distribution Systems			
1	Grantry for Interior of Russom Ranch Pump Station	0605004	\$11,000
1	Bar Screen Pump for Clearfork Pump Station	0605004	\$12,500
1	Fluke ProCal-V Documentation Software & Asset Management	0605004	\$28,000
1	Valve Operator for Alta Mesa Pump Station Fill Valve	0605004	\$7,500
1	Valve Operator for Northside Pump Station Fill Valve	0605004	\$8,500
	Subtotal for 0605004		\$67,500

**City of Fort Worth
5-year Capital Improvement Plan
Fiscal Years 2018-2022**

Water

**FY2018 VEHICLE AND EQUIPMENT PLAN
WATER**

0605011: Eagle Mountain Water Treatment Plant			
14	Filter Valve Actuators for replacement in Phase I at Eagle Mtn.	0605011	\$120,000
1	Chiller for Eagle Mtn. Raw Water Pump Station #1	0605011	\$50,000
4	Sodium Hydroxide Recirculating Pumps for replacement in Phase I &	0605011	\$40,000
5	Ozone Percent Weight Monitors for the Inlet to the Ozone Destruct	0605011	\$35,000
3	Chorine Sage Meters for the Chlorine System at Eagle Mtn.	0605011	\$30,000
2	Worm Gear Operators for Valmatic BFV at Eagle Mtn.	0605011	\$20,000
1	3/4 ton Service Truck Crew Cab 4WD AVL	0605011	\$45,000
	Subtotal for 0605011		\$340,000
0605012: Water Customer City Meters			
8	16" Mag Meters for installation at 8 Wholesale Customer Cities Sites	0605012	\$48,720
	Subtotal for 0605012		\$48,720
0605500: Pretreatment			
1	Mid-Size PU 2.5L Eng Ext Cab LED Lightbar AVL	0605500	\$28,000
1	Mid-Size PU 2.5L Eng Ext Cab LED Lightbar AVL	0605500	\$28,000
	Subtotal for 0605500		\$56,000
0607002: Field Operations/Water Fire Flow & Line Location			
1	1/2 ton PU Crew Cab 4WD Rearview Camera Nerf Bars Blue Tooth LED Lightbar Tool Box Bucket Seat Center Console	0607002	\$37,000
1	1/2 ton PU Crew Cab 4WD Rearview Camera Nerf Bars Blue Tooth LED Lightbar Tool Box Bucket Seat Center Console	0607002	\$37,000
1	1/2 ton PU Crew Cab 4WD Rearview Camera Nerf Bars Blue Tooth LED Lightbar Tool Box Bucket Seat Center Console	0607002	\$37,000
	Subtotal for 0607002		\$111,000
0607004: Field Operations/Valves and Fire Hydrants			
1	1/2 ton PU Ext Cab 4WD Rearview Camera Nerf Bars Blue Tooth LED Lightbar Tool Box	0607004	\$36,000
1	Service Trk Air Compressor Crane Backhoe	0607004	\$175,000
	Subtotal for 0607004		\$211,000
0607005: Field Operations/Water Taps & Services			
1	Service Trk w/ Aux Power Unit (Air/Generator/Hydraulic)	0607005	\$135,000
1	Dump Truck Tandem Axle (Peterbilt 348)	0607005	\$155,000
1	Tractor Loader Backhoe w/ Bayonet Breaker	0607005	\$130,000
1	Tractor Loader Backhoe w/ Bayonet Breaker	0607005	\$130,000
	Subtotal for 0607005		\$550,000
0607006: Field Operations/Water Investigation			
1	1/2 ton PU Ext Cab 4WD Rearview Camera Nerf Bars Blue Tooth LED Lightbar Tool Box	0607006	\$36,000
	Subtotal for 0607006		\$36,000

City of Fort Worth
5-year Capital Improvement Plan
Fiscal Years 2018-2022

Water

FY2018 VEHICLE AND EQUIPMENT PLAN
WATER

0607007: Field Operations/Water Mains			
1	1/2 ton PU Ext Cab 4WD Rearview Camera Nerf Bars Blue Tooth LED Lightbar Tool Box	0607007	\$36,000
1	Service Trk w/ Aux Power Unit (Air/Generator/Hydraulic)	0607007	\$135,000
1	Dump Truck Tandem Axle (Peterbilt 348)	0607007	\$155,000
1	Trailer Equipment 40k GVWR	0607007	\$26,000
1	Trailer Equipment 40k GVWR	0607007	\$26,000
1	Trailer Equipment 40k GVWR	0607007	\$26,000
1	Tractor Loader Backhoe w/ Bayonet Breaker	0607007	\$130,000
1	Tractor Loader Backhoe w/ Bayonet Breaker	0607007	\$130,000
	Subtotal for 0607007		\$664,000
0607010: Field Operations/Water Night Supervisors			
1	1/2 ton PU Ext Cab 4WD rearview camera Nerf Bars, Blue tooth Tool Box	0607010	\$36,000
	Subtotal for 0607010		\$36,000
0607011: Field Operations/Street Repair			
1	Flat Bed Crew Cab 16-19k GVWR 250-400 gallon water tank, aux water pump 1000' water hose with reel side mounted tool boxes Liftgate (Capacity 2,000+ lbs) 2 secured mounting saddles for concrete saw, saw blade storage box	0607011	\$90,000
1	Dump Truck Tandem Axle w/ Emulsification Unit (Peterbilt 348)	0607011	\$175,000
1	Dump Truck Tandem Axle (Peterbilt 348)	0607011	\$155,000
1	1/2 ton PU Ext Cab 4WD Rearview Camera Nerf Bars Blue Tooth LED Lightbar Tool Box	0607011	\$35,500
1	1/2 ton PU Ext Cab 4WD Rearview Camera Nerf Bars Blue Tooth LED Lightbar Tool Box	0607011	\$35,500
	Subtotal for 0607011		\$491,000
	Total Water		\$3,165,220

**City of Fort Worth
5-year Capital Improvement Plan
Fiscal Years 2018-2022**

Water

**FY2018 VEHICLE AND EQUIPMENT PLAN
SEWER**

No. of Items	Item Description	Department ID (Center)	Amount Budgeted
0701005: Engineering/Safety & Security			
1	Kubota 2 Seater, Enclosed Cab w/ Removable Doors	0701005	\$19,000
1	1/2 ton PU Crew Cab 4WD Short Bed	0701005	\$55,000
	Subtotal for 0701005		\$74,000
0702501: Engineering			
1	SUV Full Size 4WD	0702501	\$40,000
	Subtotal for 0702501		\$40,000
0703001: Laboratory			
1	UP Water Unit	0703001	\$8,000
1	O&G Extractor - Oil and Grease Extractors	0703001	\$35,000
1	BOD Analyzer - Biochemical Oxygen Demand Analysis	0703001	\$80,000
1	N2 Gas Generator	0703001	\$22,000
1	O&G Concentrator - Oil and Grease Analysis	0703001	\$10,000
	Subtotal for 0703001		\$155,000
0705005: Sewer Operations			
1	Mid-Size PU	0705005	\$26,000
1	Mid-Size PU	0705005	\$26,000
1	Mid-Size PU	0705005	\$26,000
	Subtotal for 0705005		\$78,000
0705006: Village Creek Maintenance			
1	New Turntable & Drive Unit and Column Equalization Basin	0705006	\$150,000
5	New Waste Sludge Pumps and Motors	0705006	\$170,000
2	Macho Monster Grinders	0705006	\$64,000
1	Low-Nox Bumer for the Big Boiler	0705006	\$90,000
1	New Dehydrator	0705006	\$50,000
1	Mid-Size PU	0705006	\$26,000
1	Mid-Size PU	0705006	\$26,000
	Subtotal for 0705006		\$576,000
0705007: Technical Services			
1	Real Time Phosphorus Analyzer	0705007	\$22,000
	Subtotal for 0705007		\$22,000
0705009: Instrumentation & Electrical			
2	Medium Voltage Pad Mounted Switches	0705009	\$110,000
1	Various Motor Replacements plantwide	0705009	\$100,000
1	Various Valve Acuator Replacements plantwide	0705009	\$50,000
1	Mid-Size Pickup Tool Box (Ford Ranger)	0705009	\$26,500
1	Mid-Size Pickup Tool Box (Ford Ranger)	0705009	\$26,500
1	Mid-Size Pickup Tool Box (Ford Ranger)	0705009	\$26,500
	Subtotal for 0705009		\$339,500

City of Fort Worth
5-year Capital Improvement Plan
Fiscal Years 2018-2022

Water

FY2018 VEHICLE AND EQUIPMENT PLAN
SEWER

0705500: Sewer Pretreatment			
1	3/4 ton PU LED Lightbar AVL Body Insert similar to #203-0286 or #203-0287)	0705500	\$50,000
1	7-9 Passenger Van AVL	0705500	\$32,000
	Subtotal for 0705500		\$82,000
0707002: Fire Flow and Line Location			
8	1/2 ton PU Ext cab 4WD Rearview Camera Nerf Bars Blue Tooth Laptop Mount Bucket Seats	0707002	\$36,000
	Subtotal for 0707002		\$36,000
0707003: Warehouse			
1	Full Size SUV Chevy Suburban 4WD	0707003	\$45,000
	Subtotal for 0707003		\$45,000
0707006: Sewer Maintenance			
1	Service Truck Crew Cab Air Compressor (Peterbilt Cab & Chassis)	0707006	\$145,000
1	Service Truck Crew Cab Air Compressor (Peterbilt Cab & Chassis)	0707006	\$145,000
1	Dump truck Tandem Axle (Peterbilt Cab & Chassis)	0707006	\$155,000
	Subtotal for 0707006		\$445,000
0707007: Sewer Technical Services			
1	1 ton PU Crew Cab 4WD Short Bed	0707007	\$45,000
1	1/2 ton PU Ext Cab 4WD Rearview Camera Nerf Bars Blue Tooth Laptop Mount Bucket Seats	0707007	\$36,000
1	Service Truck 19k GVWR Aux Power Unit (Vanair) 100 Gallon Fuel Transfer Tank	0707007	\$80,000
	Subtotal for 0707007		\$161,000
0707008: Sewer FO Utility Cut Repair			
1	Dump Truck Tandem Axle	0707008	\$155,000
1	Flatbed Truck with 10 ton Crane	0707008	\$275,000
	Subtotal for 0705008		\$430,000
0707010: Sewer Taps & Services			
1	Service Truck Crew Cab Air Compressor (Peterbilt Cab & Chassis)	0707010	\$145,000
1	Service Truck Crew Cab Air Compressor (Peterbilt Cab & Chassis)	0707010	\$145,000
1	Trailer Tilt Bed 26' 16k GVWR	0707010	\$12,500
1	Compact Track Loader 80" Bucket Grapple Bucket Brush Cutter Attachments (Case TR340)	0707010	\$90,000
	Subtotal for 0705010		\$392,500

**City of Fort Worth
5-year Capital Improvement Plan
Fiscal Years 2018-2022**

Water

**FY2018 VEHICLE AND EQUIPMENT PLAN
SEWER**

0707012: Sewer Investigations			
1	Service Truck 19k GVWR Aux Power Unit (Vanair) 100 Gallon Fuel Transfer Tank	0707012	\$80,000
1	1/2 ton Ext Cab 4WD Rearview Camera Nerf Bars Blue Tooth Laptop Mount Bucket Seats	0707012	\$36,000
1	CCTV with Launcher	0707012	\$275,000
	Subtotal for 0707012		\$391,000
0707016: Sanitary Sewer Asset Management			
1	Honda Pioneer 1000	0707016	\$26,500
1	Service Truck Aux Power Unit (Air, Generator, Hydraulic) 100 Gallon Fuel Transfer Tank (Ford F450)	0707016	\$80,000
1	Pioneer 8" Trash Pump	0707016	\$60,000
	Subtotal for 0707016		\$166,500
	Total Sewer		\$3,433,500

Attachment G
Selected Opinions of Probable Cost from the City's 2012 Wastewater Master Plan

City of Fort Worth

2021 - 2030 CIP



OPINION OF PROBABLE COST

January 2, 2012

Construction Project Number

67

Project Description

36-inch, 21-inch, 18-inch, and 15-inch Replacement Interceptors in the West Fork Basin; New 18-inch and 15-inch Interceptor in the West Fork Basin

Detailed Description

This project is a series of three line replacements in the West Fork Basin. Segment 1 is the 36-inch replacement of existing 24-inch main M-515. Segment 2 is the 18-inch replacement of the existing 10-inch, and 12-inch main M-515. Segment 3 is the 21-inch and 18-inch replacement of existing 12-inch main S15799. The 15-inch, and 18-inch segment is new construction in the western portion of the West Fork Basin.

Purpose

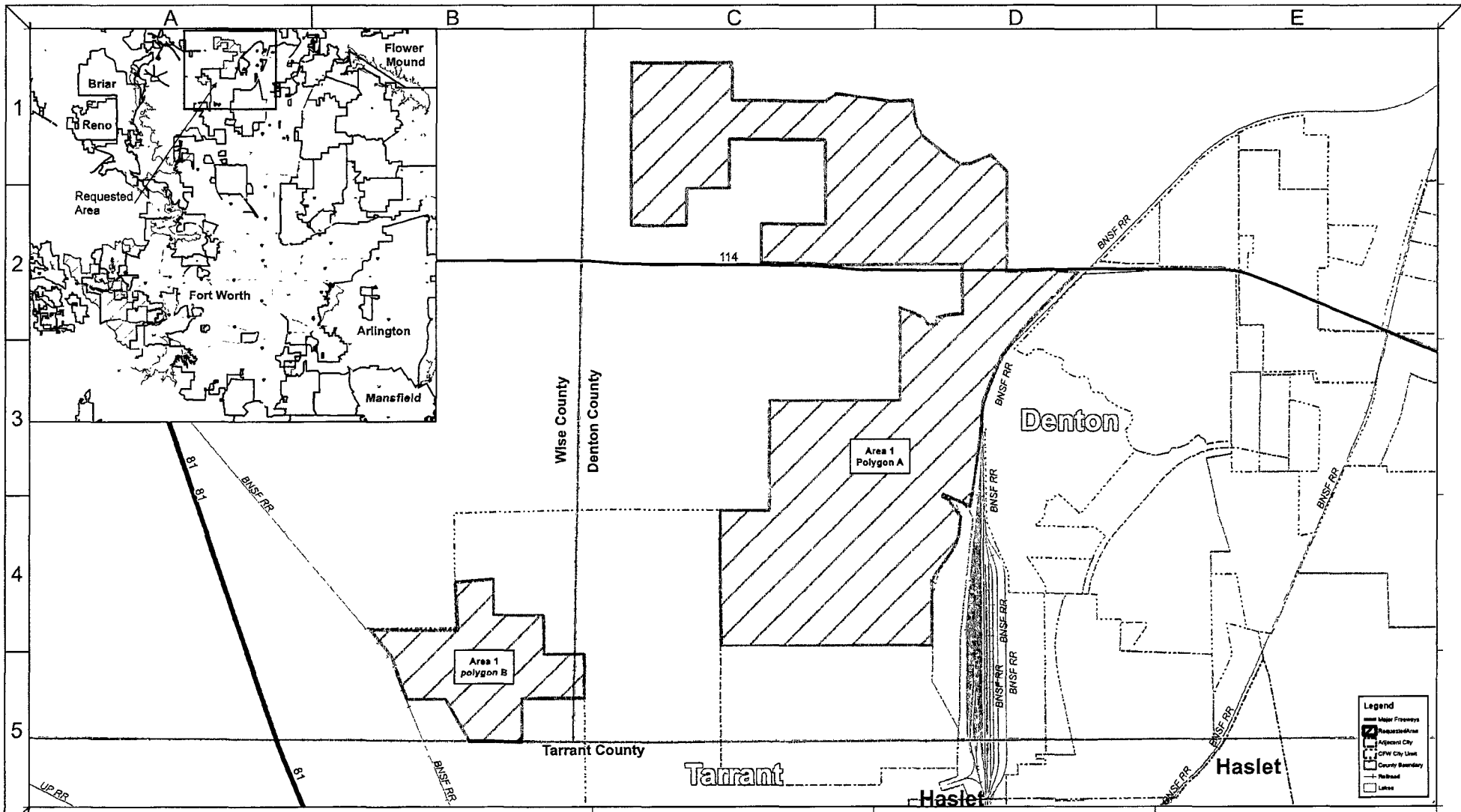
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	36" Pipe 8- 16 feet deep	2,600	LF	\$400	\$1,040,000
2	36" Pipe < 8 feet deep	500	LF	\$330	\$165,000
3	21" Pipe > 16 feet deep	700	LF	\$280	\$196,000
4	21" Pipe 8- 16 feet deep	300	LF	\$260	\$78,000
5	18" Pipe > 16 feet deep	400	LF	\$240	\$96,000
6	18" Pipe 8- 16 feet deep	3,100	LF	\$220	\$682,000
7	18" Pipe < 8 feet deep	2,600	LF	\$200	\$520,000
8	15" Pipe < 8 feet deep	6,800	LF	\$160	\$1,088,000
SUBTOTAL:					\$3,865,000
CONTINGENCY				20%	\$773,000
SUBTOTAL:					\$4,638,000
ENG/SURVEY				12%	\$556,560
SUBTOTAL:					\$5,194,560
PROJECT TOTAL					\$5,194,560

Attachment H
Oversized Map Identifying Each Polygon of the Requested Area

Oversized Map

Available in Central Records

Attachment I
General Location Maps



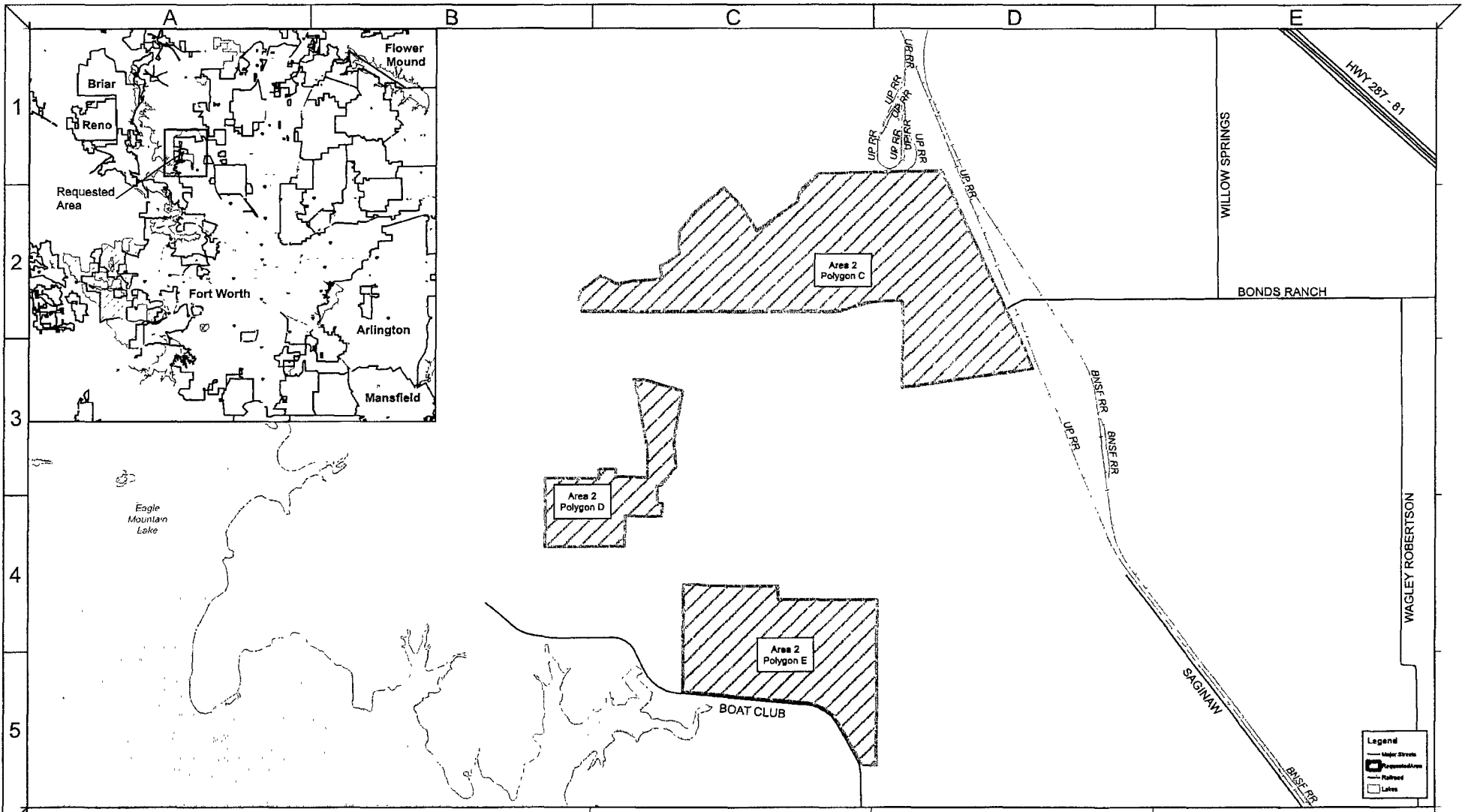
Legend

- Major Freeways
- Requested Area
- Adjacent City
- City of Fort Worth City Limit
- County Boundary
- Railroad
- Lakes

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**Small Scale Map
 Fort Worth Water
 Proposed Amendment
 to CCN Area 1**

FORT WORTH
 WATER



Legend

- Major Streets
- Proposed Area
- Railroad
- Lakes

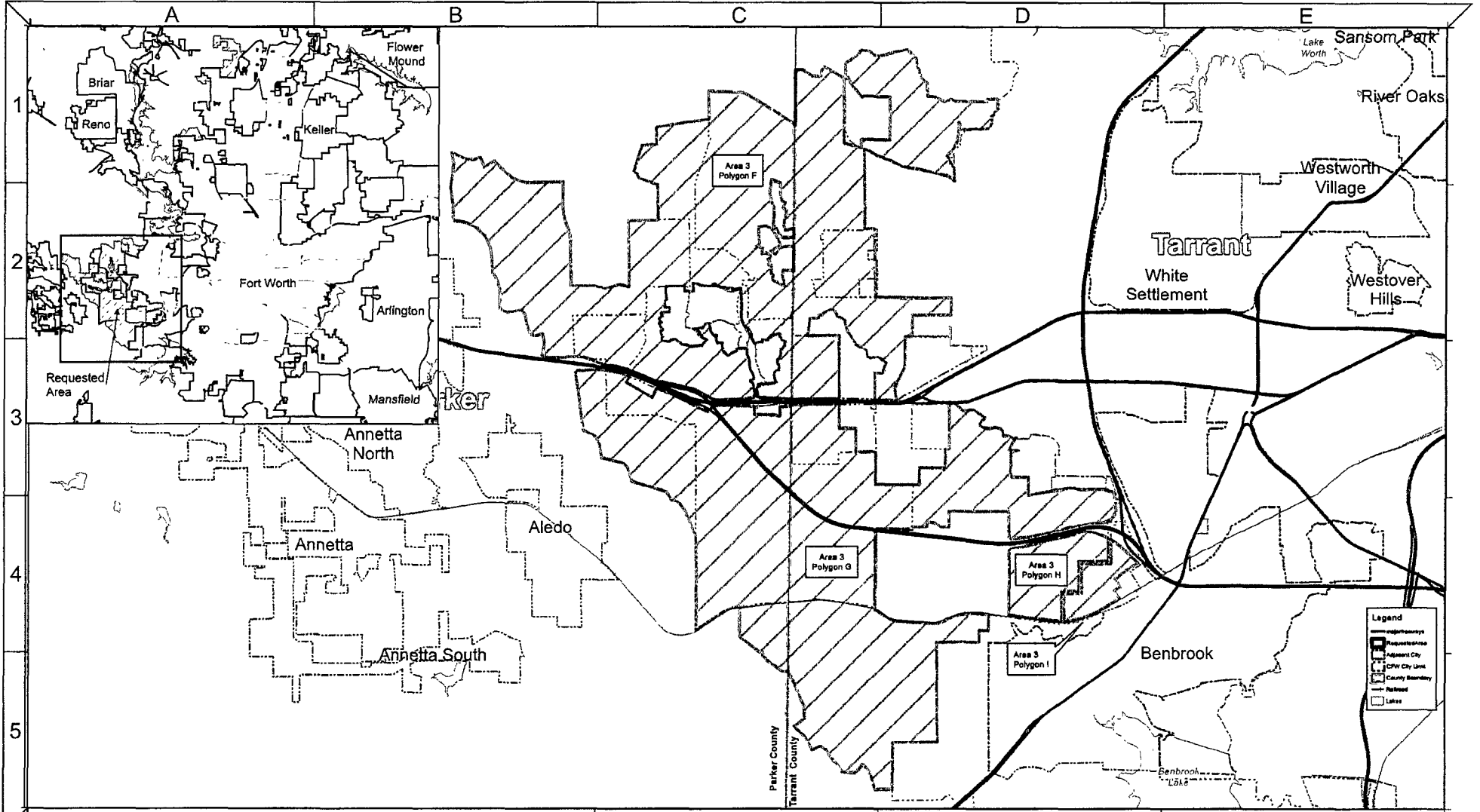
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**Small Scale Map
 Fort Worth Water
 Proposed Amendment
 to CCN Area 2**

FORT WORTH
 WATER

0 1,160 2,300 4,600 Feet

N



Legend

- Interstate
- Major Road
- City Boundary
- Adjacent City
- City Line
- City Line
- County Boundary
- Railroad
- Lake

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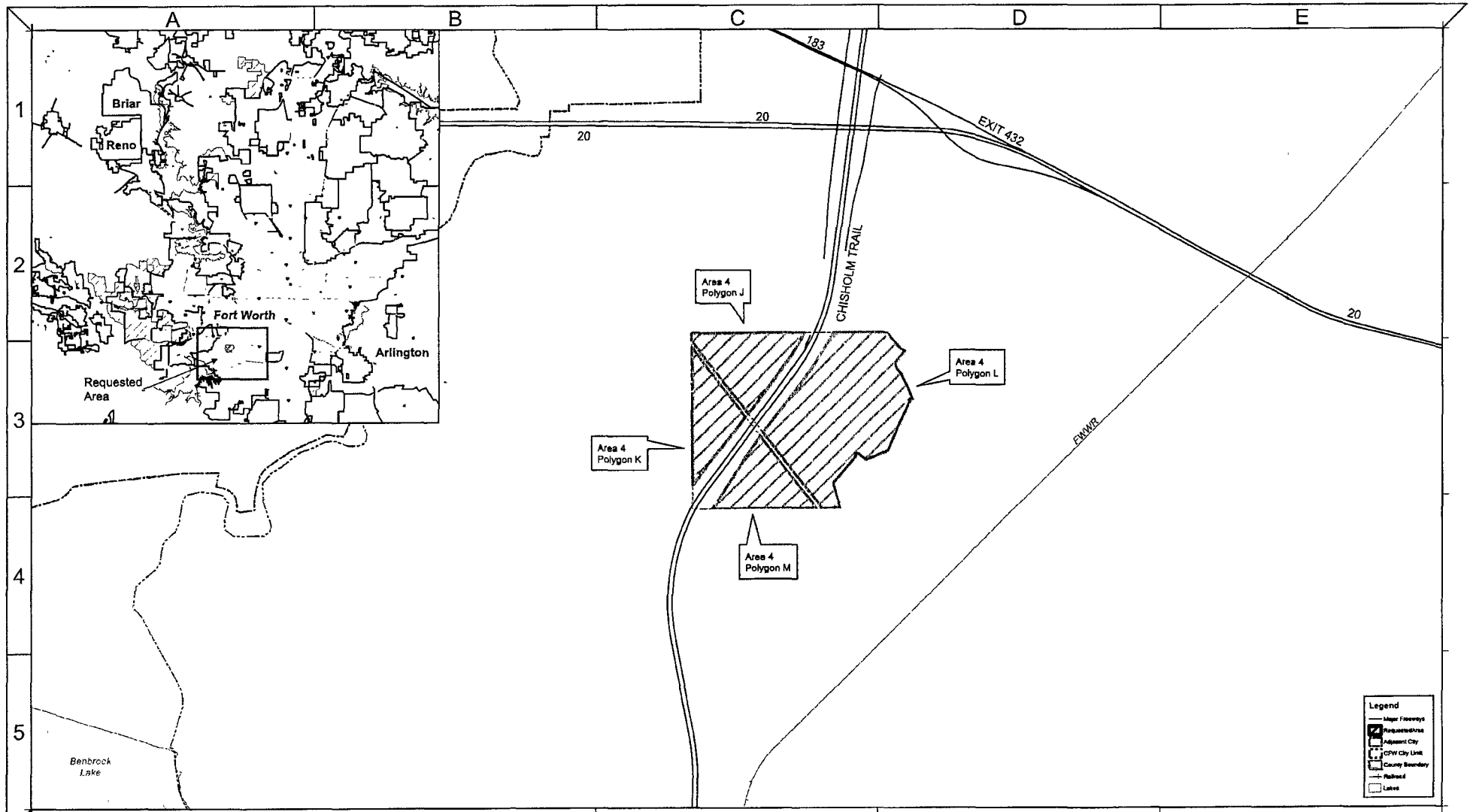
**Small Scale Map
 Fort Worth Water
 Proposed Amendment
 to CCN Area 3**

FORT WORTH

WATER

0 2,850 5,700 11,400 Feet

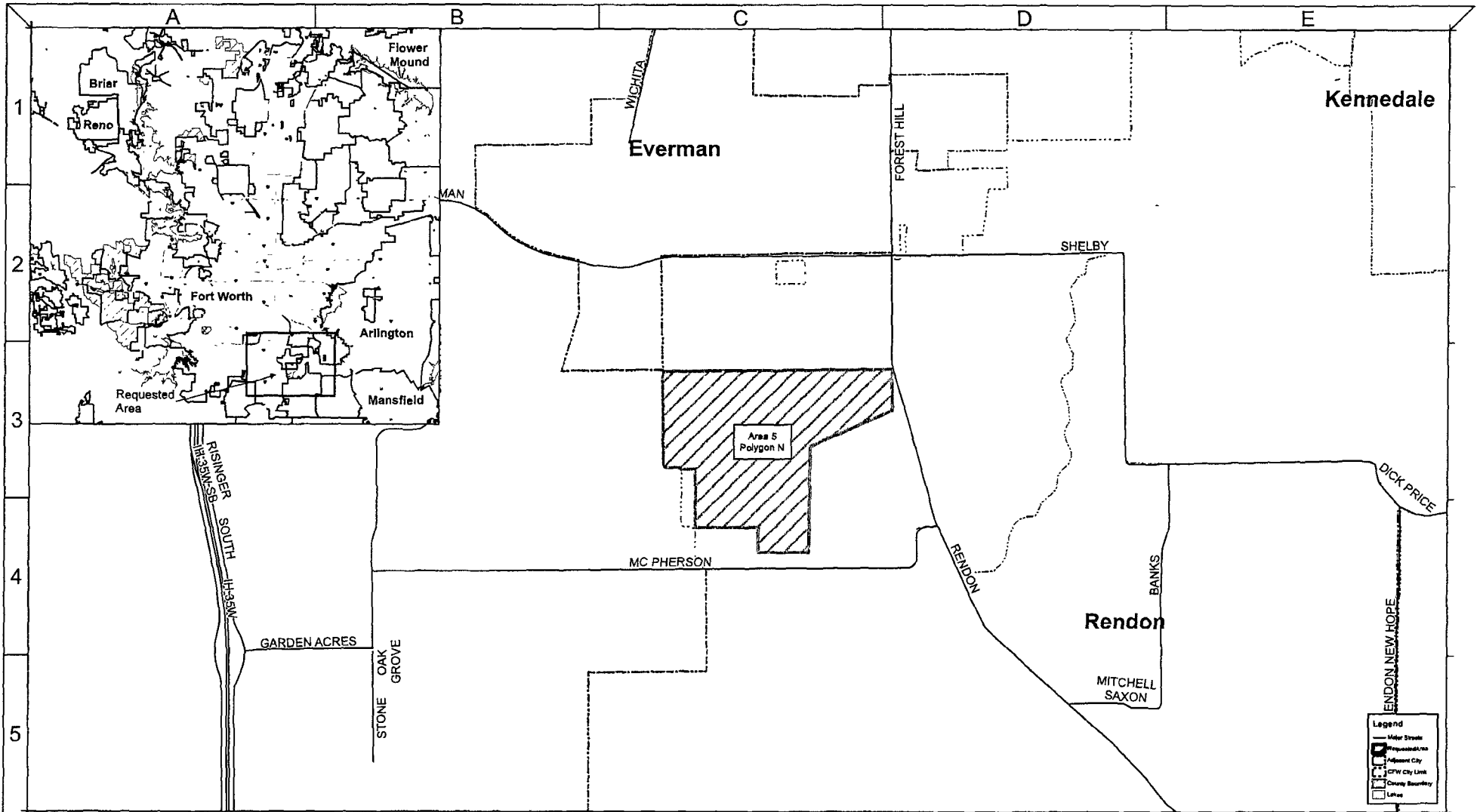
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**Small Scale Map
 Fort Worth Water
 Proposed Amendment
 to CCN Area 4**

FORT WORTH
 WATER



Legend

- Major Street
- Proposed Line
- Adjacent City
- City Line
- County Boundary
- Lake

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**Small Scale Map
 Fort Worth Water
 Proposed Amendment
 to CCN Area 5**

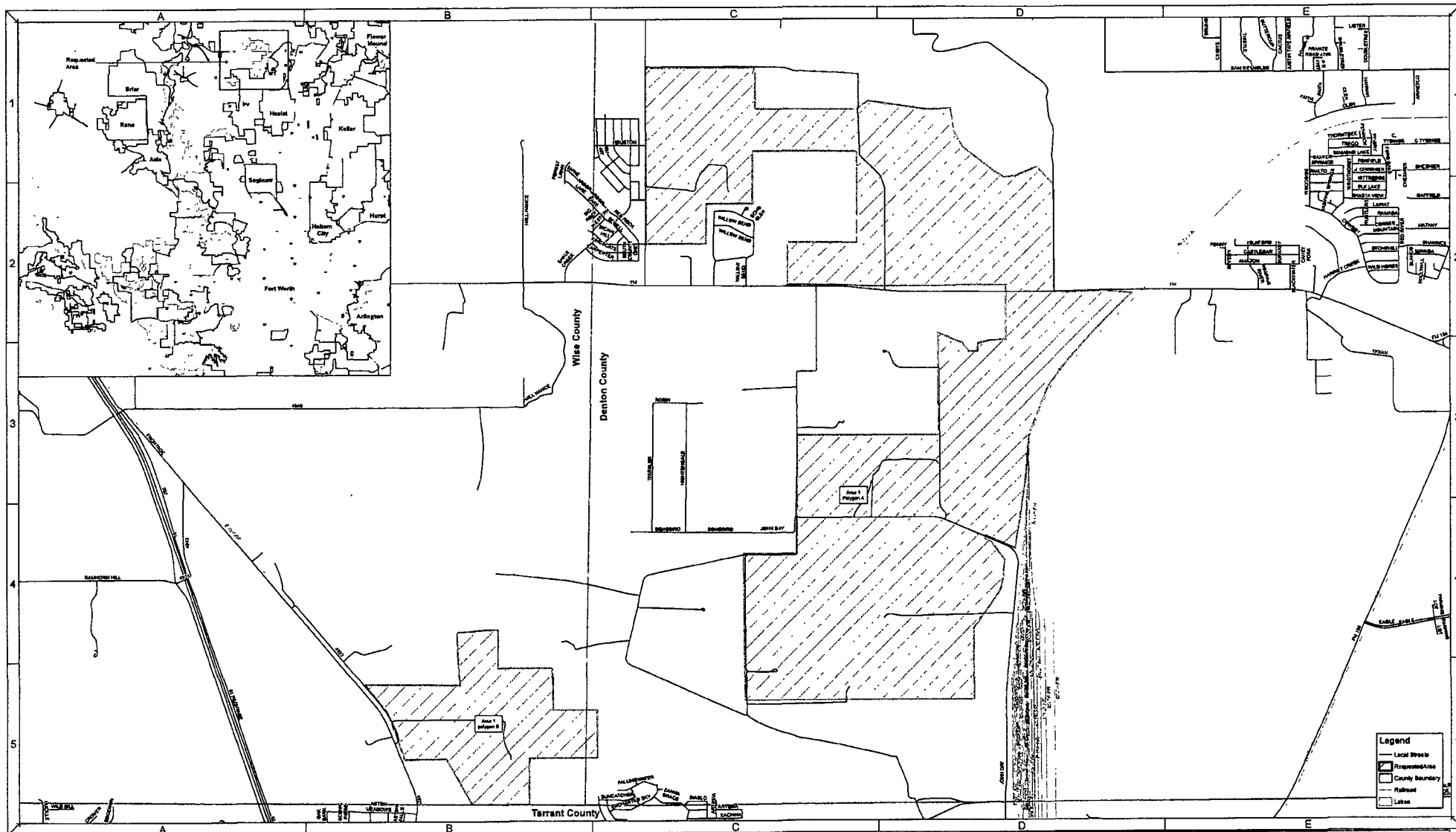
FORT WORTH

WATER

0 900 1,800 3,600 Feet

N

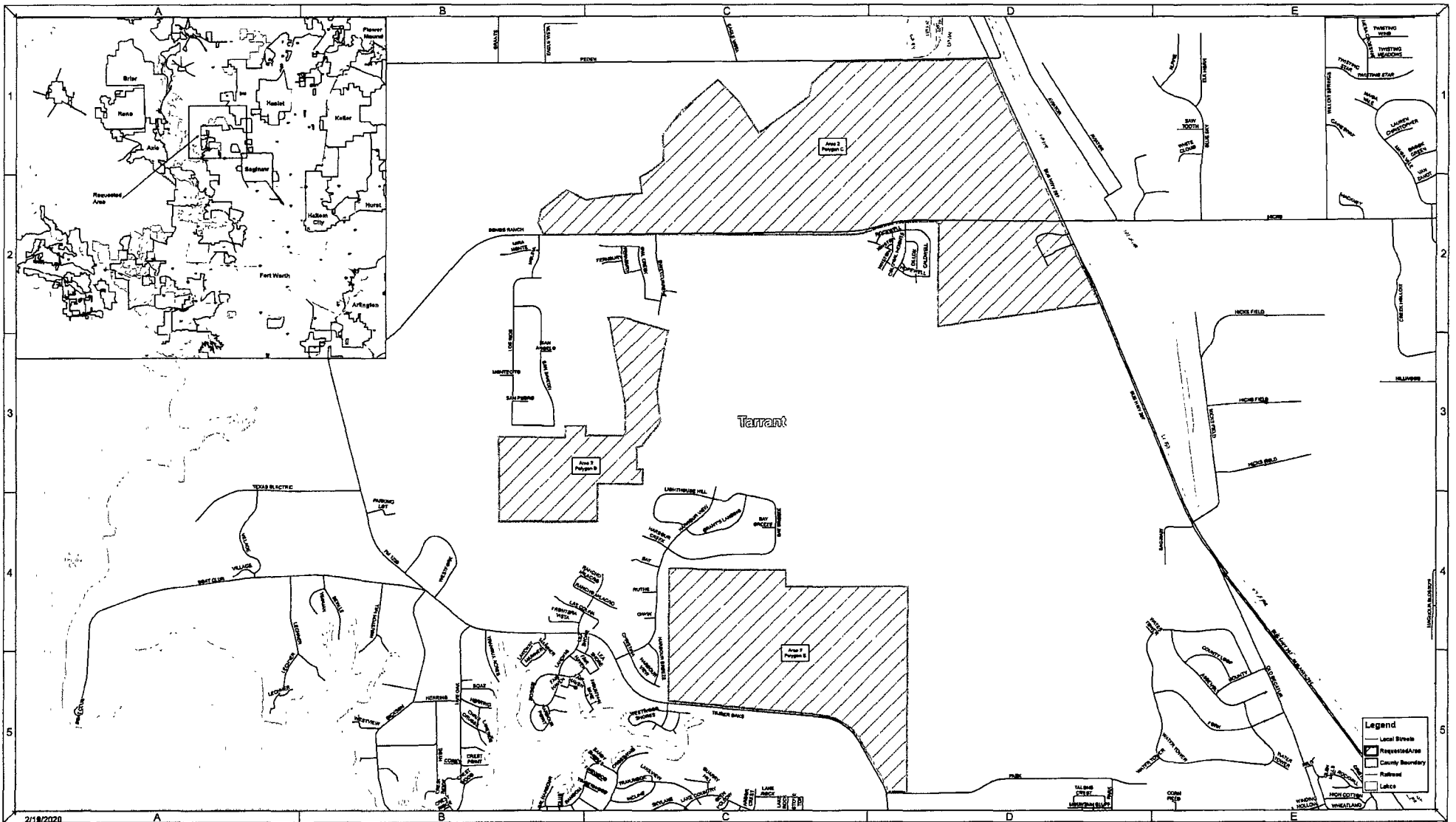
Attachment J
Detailed Maps



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**Large Scale Map
 Fort Worth Water
 Proposed Amendment
 to CCN Area 1**





2/19/2020

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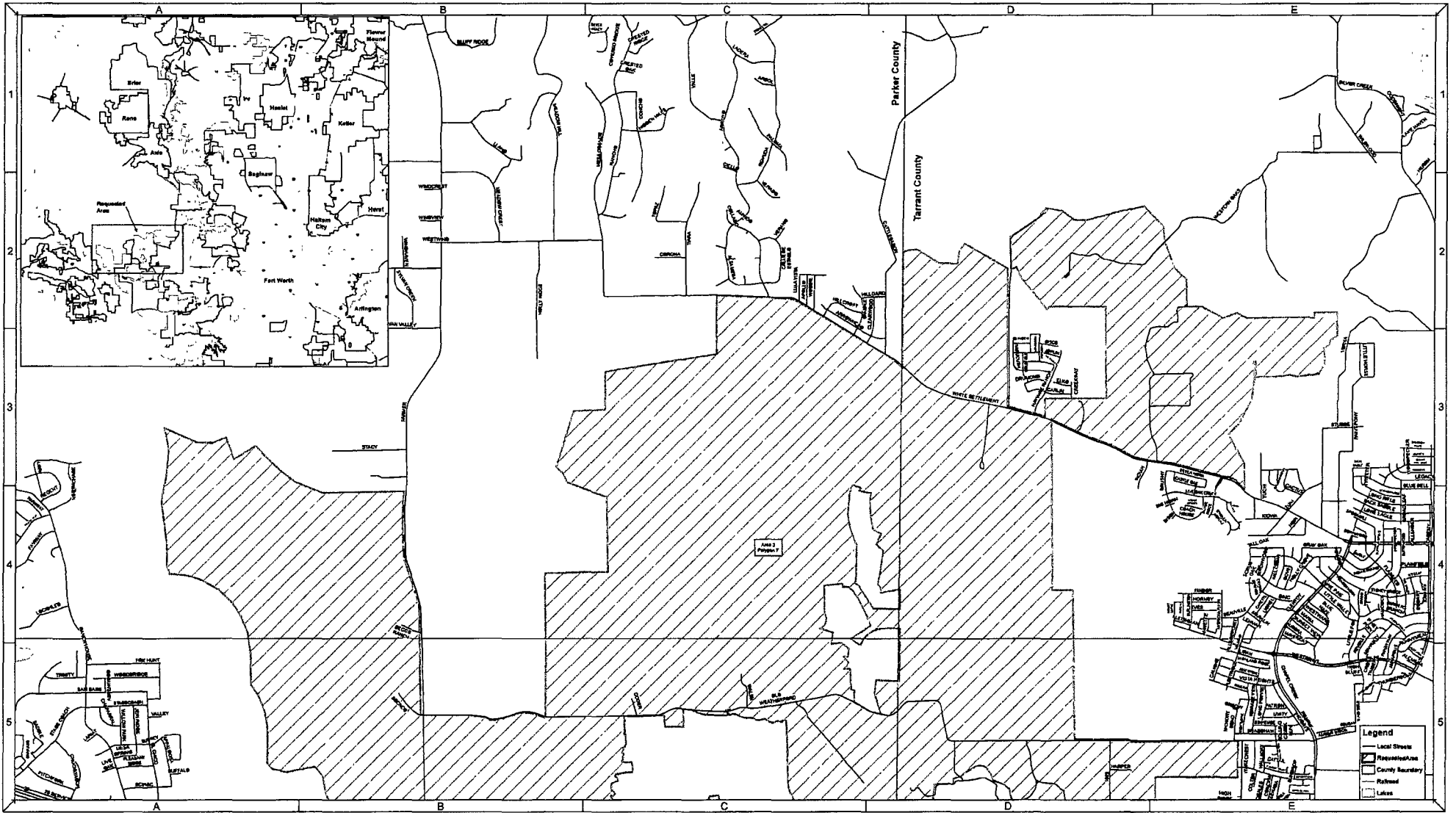
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**Large Scale Map
 Fort Worth Water
 Proposed Amendment
 to CCN Area 2**

FORT WORTH

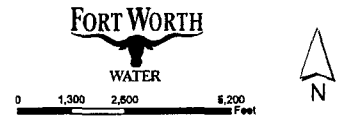
WATER
 0 900 1,800 3,600
 Feet

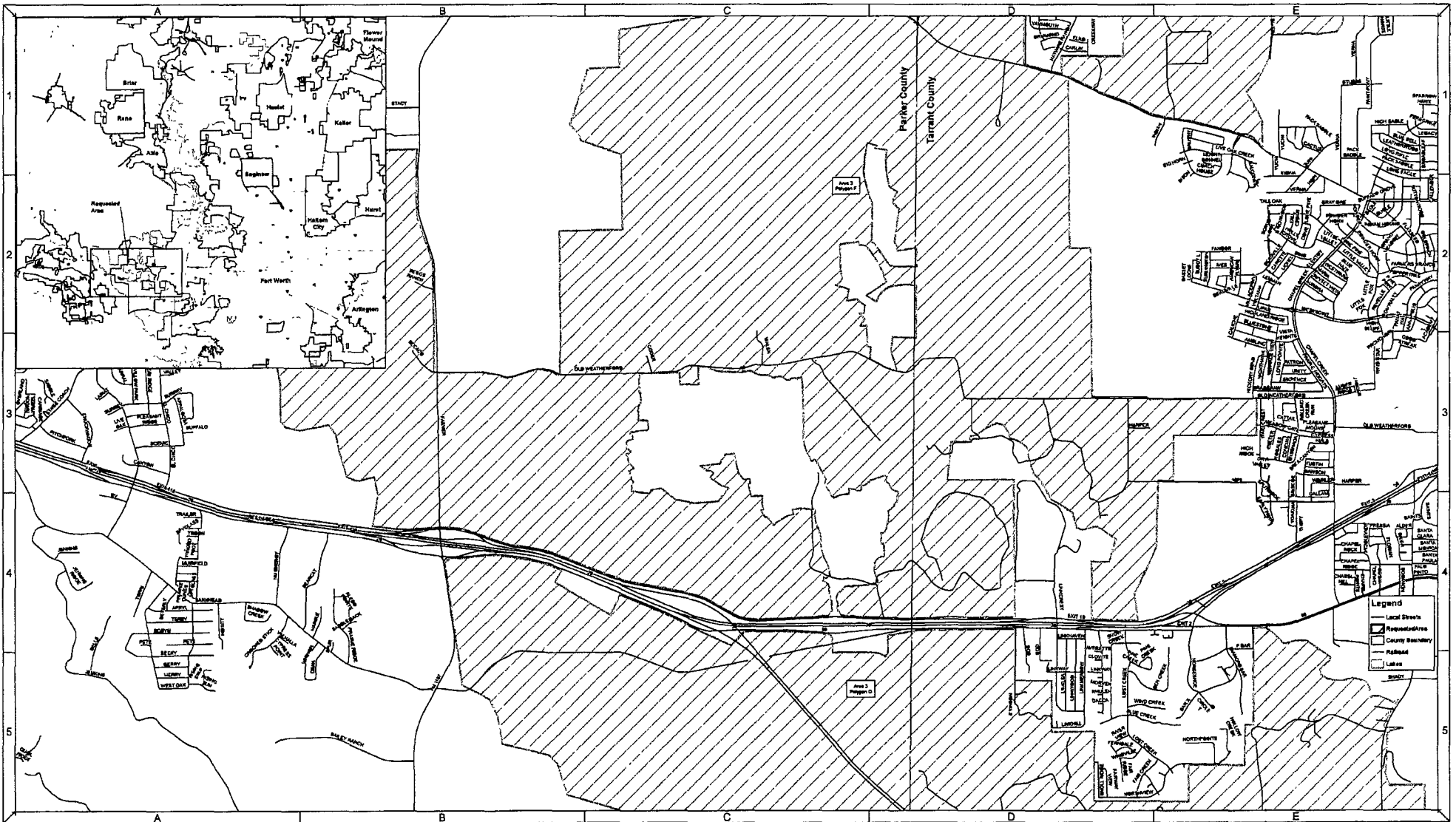




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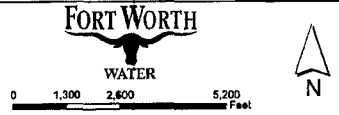
**Large Scale Map
 Fort Worth Water
 Proposed Amendment
 to CCN Area 3**

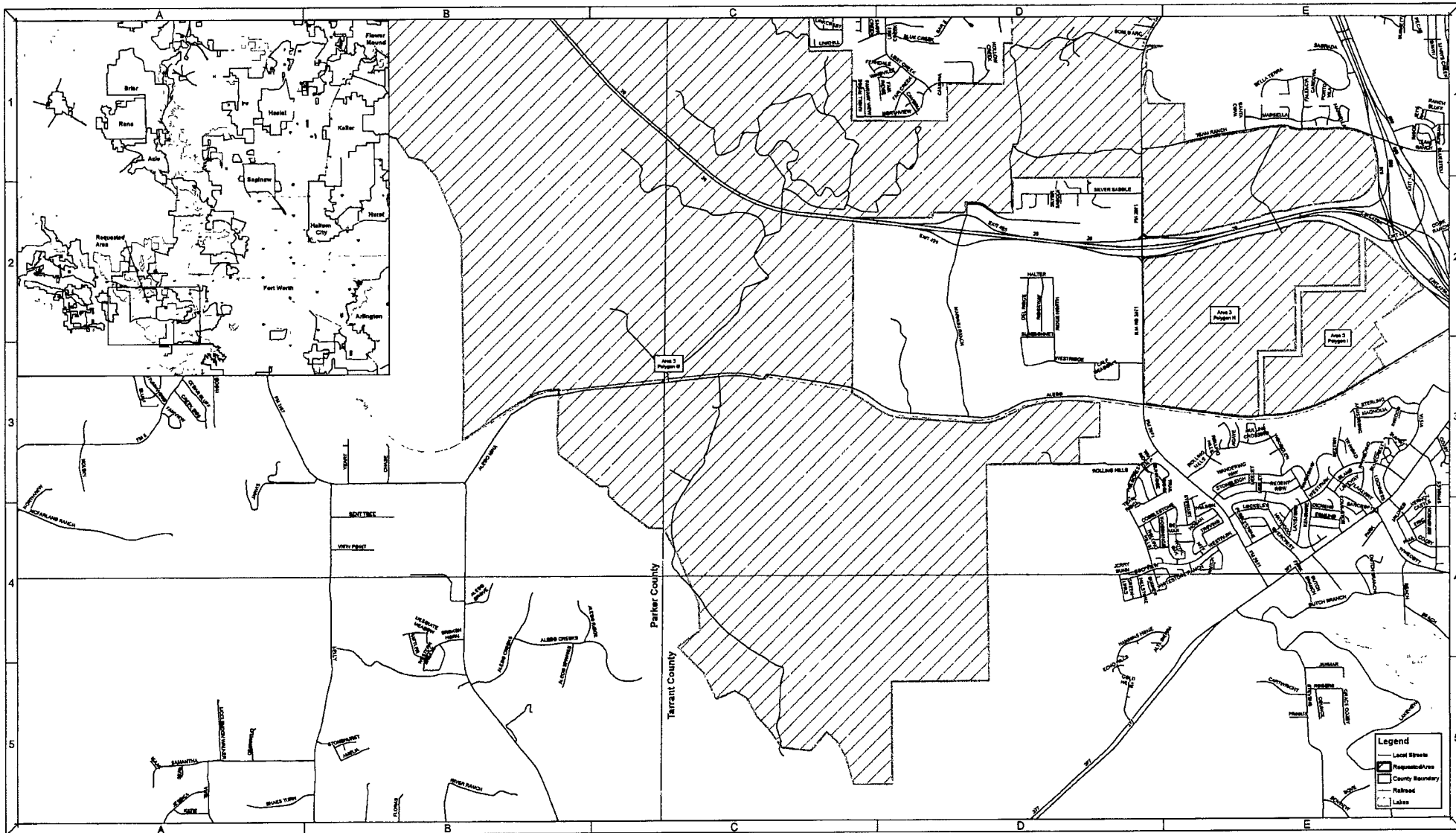




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**Large Scale Map
 Fort Worth Water
 Proposed Amendment
 to CCN Area 3B**



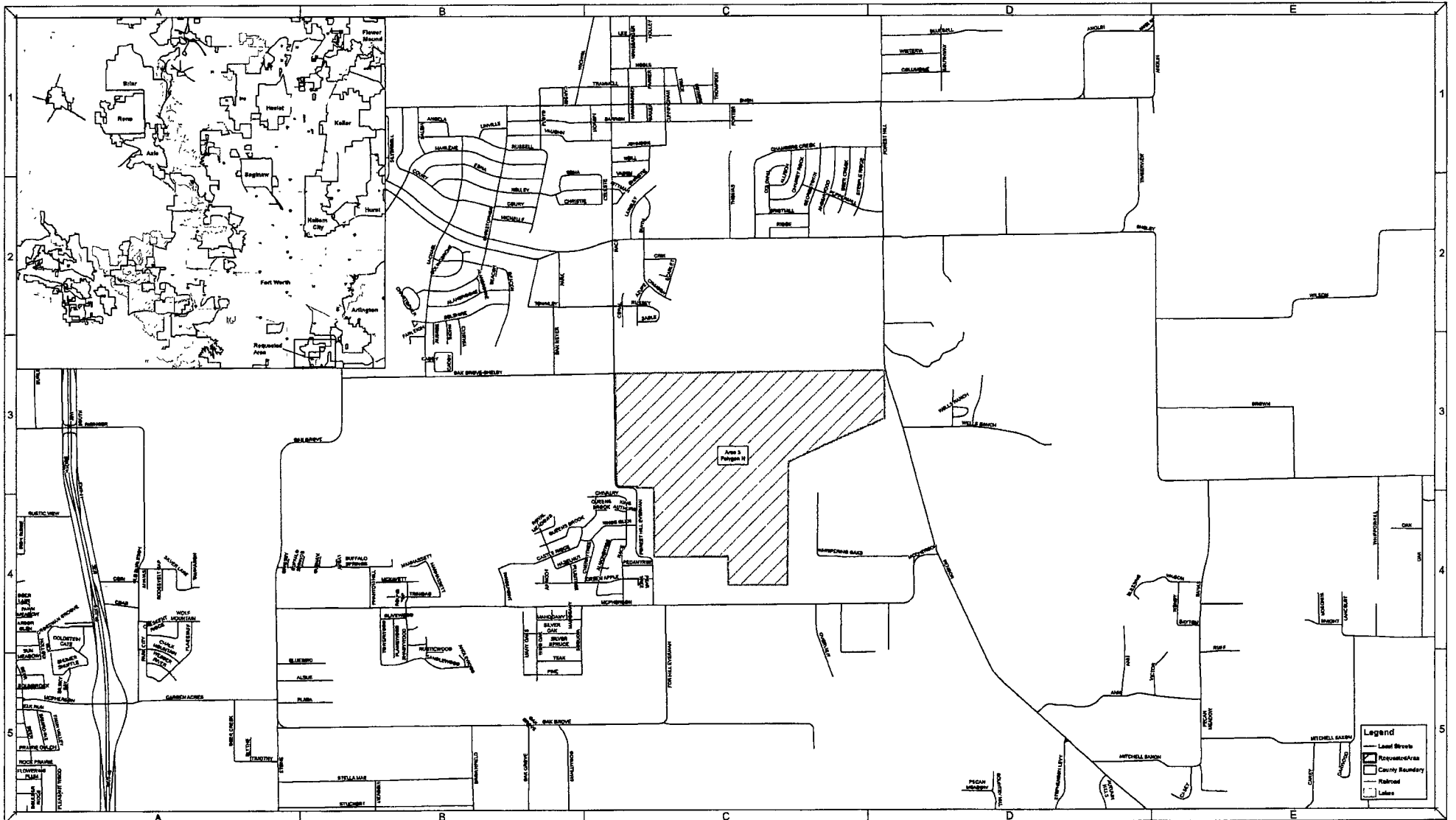


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Large Scale Map Fort Worth Water Proposed Amendment to CCN Area 3C





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**Large Scale Map
 Fort Worth Water
 Proposed Amendment
 to CCN Area 5**

FORT WORTH
 WATER

0 750 1,500 3,000
 Feet

Attachment K

CD-ROM Containing Digital Data for Each Polygon of the Requested CCN Area

PUC DOCKET NO. 49277

**CITY OF FORT WORTH'S 1ST SUPPLEMENT TO
APPLICATION AMENDMENT - MAPPING**

OVERSIZED DOCUMENT(S)

TO VIEW

OVERSIZED DOCUMENT(S)

PLEASE GO TO

CENTRAL RECORDS

(512) 936-7180

CD ATTACHED

TO VIEW PLEASE CONTACT
CENTRAL RECORDS
512-936-7180