

<p style="text-align: center;">AGENDA</p> <p style="text-align: center;">CAPITAL IMPROVEMENTS ADVISORY COMMITTEE CITY OF MANSFIELD, TEXAS CITY COUNCIL CHAMBERS MONDAY, MAY 6, 2019, 6:30 PM (IMMEDIATELY FOLLOWING THE PLANNING AND ZONING COMMISSION MEETING)</p>

1. APPROVAL OF LAST MEETING MINUTES

- 2. CITIZEN COMMENTS:** Citizens wishing to address the Committee may do so at this time. All comments are limited to 5 minutes. Please refrain from personal criticisms.

In order to be recognized during the “Citizens Comments,” please complete an “Appearance Card” located at the entry to the Chambers and present it to the Planning Secretary.

3. AGENDA ITEMS

A. Consideration of the 2019 Water and Wastewater Impact Fee Report

4. COMMITTEE ANNOUNCEMENTS

5. STAFF ANNOUNCEMENTS

6. ADJOURNMENT OF MEETING

I certify that the above agenda was posted on the bulletin board next to the main entrance of City Hall on **May 2, 2019**, in accordance with Chapter 551 of the Texas Government Code.

Delia Jones, Secretary

- This building is wheelchair accessible. Disabled parking spaces are available. Request for sign interpreter services must be made 48 hours ahead of meeting to make arrangements. Call 817 473-0211 or TDD 1-800-RELAY TX, 1-800-735-2989.

**CAPITAL IMPROVEMENTS ADVISORY COMMITTEE
CITY OF MANSFIELD**

February 4, 2019

The Capital Improvements Advisory Committee of the City of Mansfield, Texas, convened in session in the Council Chambers of City Hall, 1200 East Broad Street, with the meeting being open to the public and notice of said meeting, giving date, place, and subject thereof, having been posted as prescribed by Chapter 551, Texas Government Code with the following members present, to-wit:

Present:

Wayne Wilshire	Chairman
Cory Smithee	Vice-Chairman
Mel Neuman	Commissioner
Kent Knight	Commissioner
Robert Klenzendorf	Commissioner
Andrew Papp	Commissioner
Tamara Bounds	Commissioner

Absent:

None

Staff:

Lisa Sudbury	Assistant Director of Planning
Art Wright	Planner
Andrew Bogda	Planner
Delia Jones	Planning & Zoning Secretary
Raymond Coffman	City Engineer
Joe Smolinski	Deputy City Manager

Call to Order

Chairman Wilshire called the meeting to order at 8:05 p.m.

Approval of Last Meeting Minutes

Vice-Chairman Smithee made a motion to approve the minutes of the August 20, 2018, meeting as presented. Seconded by Commissioner Knight, the motion carried by the following vote:

Ayes: 5 - Wilshire, Smithee, Neuman, Knight and Klenzendorf

Nays: 0

Abstain: 2 – Papp and Bounds

Citizen Comments

None

Review and approval of the Semi-Annual Reports for the period between July 1, 2018 and December 31, 2018, on the implementation of the Capital Improvements Plan for Water, Wastewater and Roadway Impact Fees and the collection of such fees

Mr. Coffman gave a brief overview of the reports and was available for questions.

After discussion, Commissioner Neuman made a motion to approve the report as presented and forward to City Council with a recommendation of approval. Commissioner Klenzendorf seconded the motion, which carried by the following vote:

Ayes: 7 - Wilshire, Smithee, Neuman, Knight, Klenzendorf, Papp and Bounds

Nays: 0

Abstain: 0

Committee Announcements

None

Staff Announcements

None

Adjournment

Commissioner Knight made a motion to adjourn the meeting. Commissioner Bounds seconded the motion which carried by the following vote:

Ayes: 7 – Wilshire, Smithee, Neuman, Knight, Klenzendorf, Papp and Bounds

Nays: 0

Abstain: 0

The meeting was adjourned at 8:15 p.m.

Wayne Wilshire, Chairman

ATTEST:

Delia Jones, Secretary

CAPITAL IMPROVEMENTS ADVISORY COMMITTEE

Agenda: May 6, 2019

Subject: Consideration of the 2019 Water and Wastewater Impact Fee Report

The members of the Planning and Zoning Commission also serve as the members of the Capital Improvements Advisory Committee (CIAC). This committee is appointed by City Council to advise the Council on the City's impact fee program. In accordance with state law, land use assumptions, capital improvements plan and fee calculation for the water and wastewater impact fees are updated every five years. The Water and Wastewater Impact Fee Study was last completed in August, 2011. The current update was begun in 2016.

Freese & Nichols, Inc. was contracted to update the City's Water and Wastewater Master Plan and the study for the impact fees. State statute requires a 10 year study period for land use and capital improvements planning. The purpose of this analysis is to calculate a cost per service unit to provide water and sewer service for the growth anticipated over the 10 year period.

Freese & Nichols representatives will give a presentation at the meeting. Staff is seeking a recommendation approving the report to City Council. CIAC comments will be presented to City Council on May 27, 2019 and a revision to the Impact Fee Ordinance will be presented to Council for a first reading on June 24, 2019.

Raymond Coffman, City Engineer, will be present at the meeting to answer questions related to the report. The Committee members are encouraged to contact Mr. Coffman with any questions about the report prior to the meeting.

Attachments

2019 Water and Wastewater Impact Fee Report

DRAFT

WATER AND WASTEWATER IMPACT FEE REPORT

Prepared for:

City of Mansfield

May 2019



Prepared by:

FREESE AND NICHOLS, INC.
4055 International Plaza, Suite 200
Fort Worth, Texas 76109
817-735-7300

DRAFT

WATER AND WASTEWATER IMPACT FEE REPORT

Prepared for:

City of Mansfield

DRAFT	DRAFT	DRAFT
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Prepared by:

FREESE AND NICHOLS, INC.

4055 International Plaza, Suite 200
Fort Worth, Texas 76109
817-735-7300

FNI Project Number: MAN16396

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Appendix B	Wastewater System Project Cost Estimates

EXECUTIVE SUMMARY

BACKGROUND

The City of Mansfield, Texas contracted with Freese and Nichols, Inc. (FNI) to perform an impact fee analysis to update the City's water and wastewater impact fees. The purpose of this report is to summarize the methodology used in the development and calculation of impact fees for the City of Mansfield. The methodology used herein satisfies the requirements of the Texas Local Government Code Section 395 for the establishment and update of water and wastewater impact fees.

LAND USE ASSUMPTIONS

Population and land use are important elements in the analysis of water and wastewater systems. Individual service areas were defined for water and wastewater based on the City Limits and the future service areas. Water demands and wastewater flows depend on the residential population and commercial development served by the systems and determines the sizing and location of system infrastructure. The population and commercial acreage projections for the water and wastewater service areas are summarized in **Table ES-1**.

Table ES-1: Population Projections

Year	Population	Commercial Acreage
2019	73,410	2,652
2029	100,590	3,490

CAPITAL IMPROVEMENTS PLAN

A water and wastewater impact fee capital improvements plan (CIP) was developed for the City of Mansfield based on the land use assumptions. The recommended improvements will provide the required capacity to meet projected water demands and wastewater flows through year 2029. **Tables ES-2** and **ES-3** display the water demand and wastewater load projections in terms of million gallons per day (MGD) for the City of Mansfield. These projections were the basis for determining the location and magnitude of the CIP projects.

Table ES-2: Projected Retail Water Demands

Year	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Peak Hour Demand (MGD)
2019	12.52	27.54	48.20
2029	16.96	37.31	65.29

Table ES-3: Projected Wastewater Flows

Year	Average Day Wastewater Flow (MGD)	Peak Wet Weather Flow (MGD)
2019	8.73	34.92
2029	11.84	47.36

IMPACT FEE ANALYSIS

Chapter 395 of the Texas Local Government Code states that the maximum impact fee may not exceed the amount determined by dividing the cost of capital improvements required by the total number of service units attributed to new development during the impact fee eligibility period, less the credit to account for water and wastewater revenues used to finance capital improvement plans. The total projected costs include the projected capital improvement costs to serve 10-year development, the projected finance cost for the capital improvements, and the consultant cost for preparing and updating the Capital Improvements Plan. The financing costs are based on the compound interest paid over the first 10 years of a 30-year bond. The interest rate assumed for the impact fee calculations is 4.0% for both the existing and proposed projects. **Table ES-4** and **Table ES-5** below display a summary of the maximum allowable impact fee calculations for water and wastewater, respectively.

Table ES-4: Maximum Water Impact Fee Calculation

Water Impact Fee	
Eligible Capital Improvement Costs	\$51,339,668
Financing Costs (4%)	\$16,005,680
Total Eligible Impact Fee Costs	\$67,345,349
Water Impact Fee Credit (50%)	\$33,672,674
Growth in Service Units	10,970
$\begin{aligned} \text{Maximum Allowable Water Impact Fee} &= \frac{\text{Total Eligible Cost} - \text{Credit}}{\text{Growth in Service Units}} \\ &= \frac{\$67,345,349 - \$33,672,674}{10,970} \end{aligned}$	
	\$3,070

Table ES-5: Maximum Wastewater Impact Fee Calculation

Wastewater Impact Fee	
Eligible Capital Improvement Costs	\$25,233,304
Financing Costs (4%)	\$7,866,747
Total Eligible Impact Fee Costs	\$33,100,051
Wastewater Impact Fee Credit (50%)	\$16,550,026
Growth in Service Units	10,970
$\begin{aligned} \text{Maximum Allowable Wastewater Impact Fee} &= \frac{\text{Total Eligible Cost} - \text{Credit}}{\text{Growth in Service Units}} \\ &= \frac{\$33,100,051 - \$16,550,026}{10,970} \end{aligned}$	
	\$1,509

1.0 BACKGROUND

Chapter 395 of the Texas Local Government Code requires an impact fee analysis before impact fees can be created and assessed. Chapter 395 defines an impact fee as “a charge or assessment imposed by a political subdivision against new development in order to generate revenue for funding or recouping the costs of capital improvements or facility expansions necessitated by and attributable to the new development.” In September 2001, Senate Bill 243 amended Chapter 395 thus creating the current procedure for implementing impact fees. Chapter 395 identifies the following items as impact fee eligible costs:

- Construction contract price
- Surveying and engineering fees
- Land acquisition costs
- Fees paid to the consultant preparing or updating the capital improvements plan (CIP)
- Projected interest charges and other finance costs for projects identified in the CIP

Chapter 395 also identifies items that impact fees cannot be used to pay for, such as:

- Construction, acquisition, or expansion of public facilities or assets other than those identified on the capital improvements plan
- Repair, operation, or maintenance of existing or new capital improvements
- Upgrading, updating, expanding, or replacing existing capital improvements to serve existing development in order to meet stricter safety, efficiency, environmental, or regulatory standards
- Upgrading, updating, expanding, or replacing existing capital improvements to provide better service to existing development
- Administrative and operating costs of the political subdivision
- Principal payments and interest or other finance charges on bonds or other indebtedness, except as allowed above

The City of Mansfield, Texas contracted with Freese and Nichols, Inc. (FNI) to perform an impact fee analysis on the City’s water and wastewater systems. The purpose of this report is to present the methodology used in the development and calculation of water and wastewater impact fees for the City of Mansfield. The methodology used herein satisfies the requirements of the Texas Local Government Code Chapter 395 for the establishment of water and wastewater impact fees.

Table 1-1 provides a list of abbreviations used in this report.

Table 1-1: Abbreviations

Abbreviation	Full Nomenclature
CIP	Capital Improvements Plan
ETJ	Extra-territorial Jurisdiction
FNI	Freese and Nichols, Inc.
gpm	gallons per minute
IFCIP	Impact Fee Capital Improvements Plan
LUA	Land Use Assumptions
MGD	Million Gallons per Day
NCTCOG	North Central Texas Council of Governments
TSZ	Traffic Survey Zone
WTP	Water Treatment Plant

2.0 LAND USE ASSUMPTIONS

Population and land use are important elements in the analysis of water and wastewater systems. Water demands and wastewater flows depend on the residential population and commercial development served by the systems and determines the sizing and location of system infrastructure. The land use assumptions, including population and commercial acreage projections, were developed as part of the *2019 Water and Wastewater Master Plan*.

2.1 SERVICE AREA

Chapter 395 requires that service areas be defined for impact fees to ensure that facility improvements are located in close proximity to areas generating needs. The existing service areas were developed using the city limit boundary. The future service areas were developed using the extra-territorial jurisdiction (ETJ) and information from City staff on future development. **Figures 2-1** and **2-2** illustrate the water and wastewater service areas, respectively.

2.2 HISTORICAL POPULATION

The City of Mansfield has experienced significant population growth over the last decade, with an average annual growth rate of 5.14% from the years 2003 through 2018. The populations shown in **Table 2-1** include the North Central Texas Council of Governments (NCTCOG) estimates as of January 1st of each year and the U.S. Census estimates as of July 1st of each year.

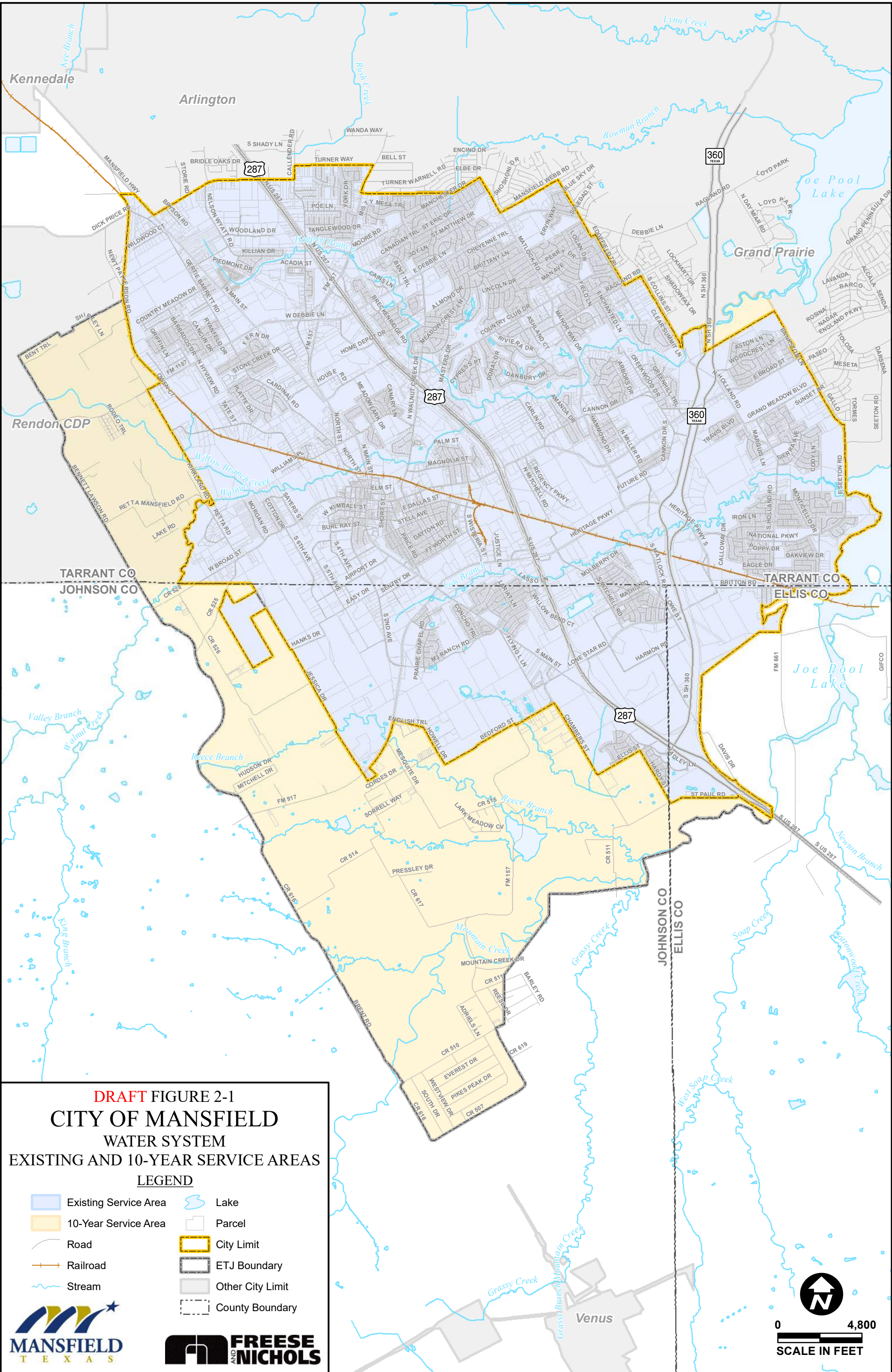
Table 2-1: Historical Population

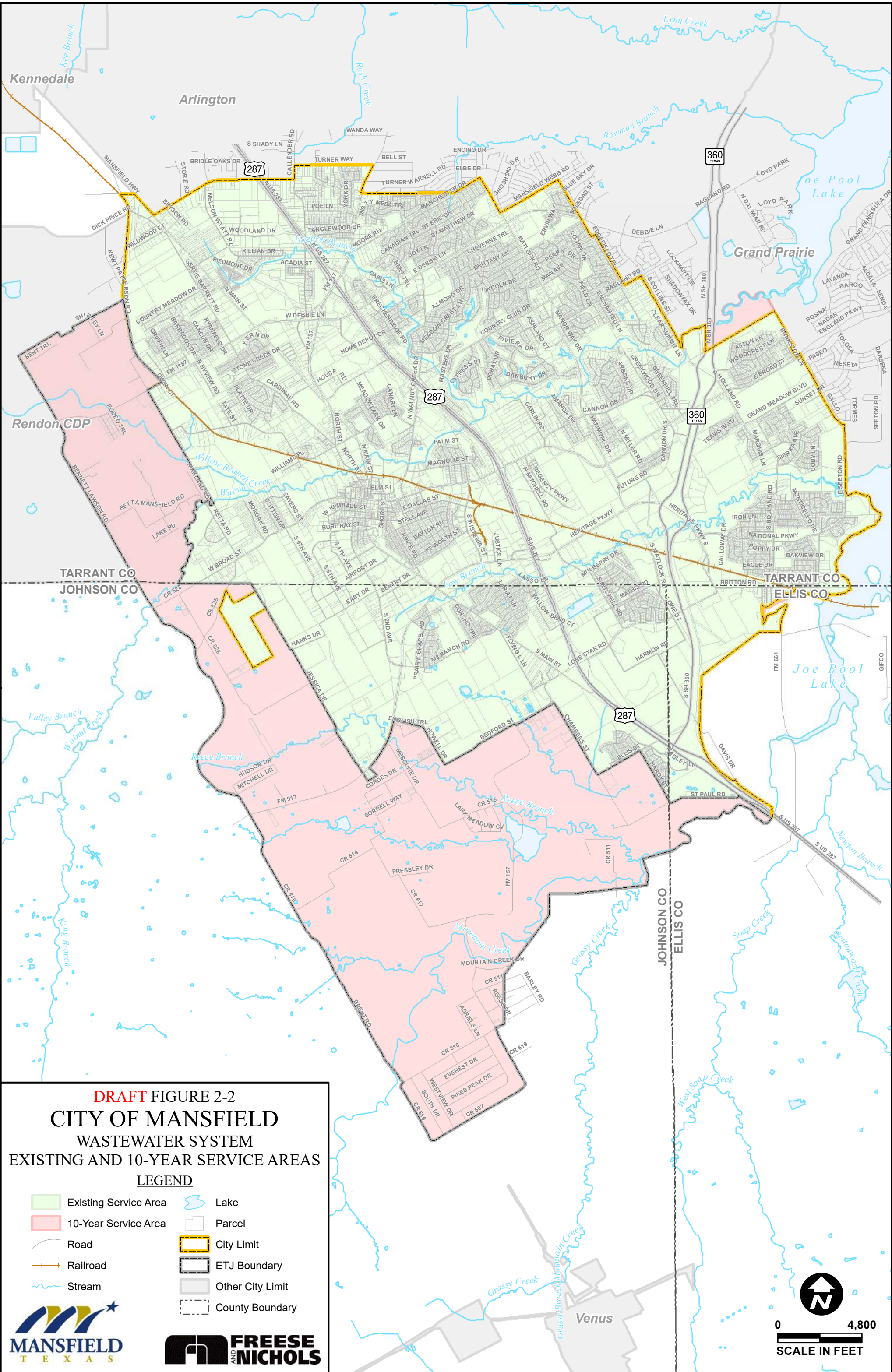
Year	Population	Annual Growth Rate
2002 ⁽¹⁾	32,200	--
2003 ⁽¹⁾	36,100	12.11%
2004 ⁽¹⁾	40,300	11.63%
2005 ⁽¹⁾	45,000	11.66%
2006 ⁽¹⁾	48,750	8.33%
2007 ⁽¹⁾	51,300	5.23%
2008 ⁽¹⁾	53,200	3.70%
2009 ⁽¹⁾	55,950	5.17%
2010 ⁽²⁾	56,368	0.75%
2011 ⁽²⁾	58,207	3.26%
2012 ⁽²⁾	59,625	2.44%
2013 ⁽²⁾	61,197	2.64%
2014 ⁽²⁾	62,617	2.32%
2015 ⁽²⁾	64,707	3.34%
2016 ⁽²⁾	66,271	2.42%
2017 ⁽²⁾	68,928	4.01%
2018 ⁽³⁾	71,134	3.20%
Average		5.14%

(1) Based on NCTCOG populations estimates.

(2) Based on U.S. Census population estimates.

(3) Based on U.S. Census population estimates and a 3.2% growth rate.





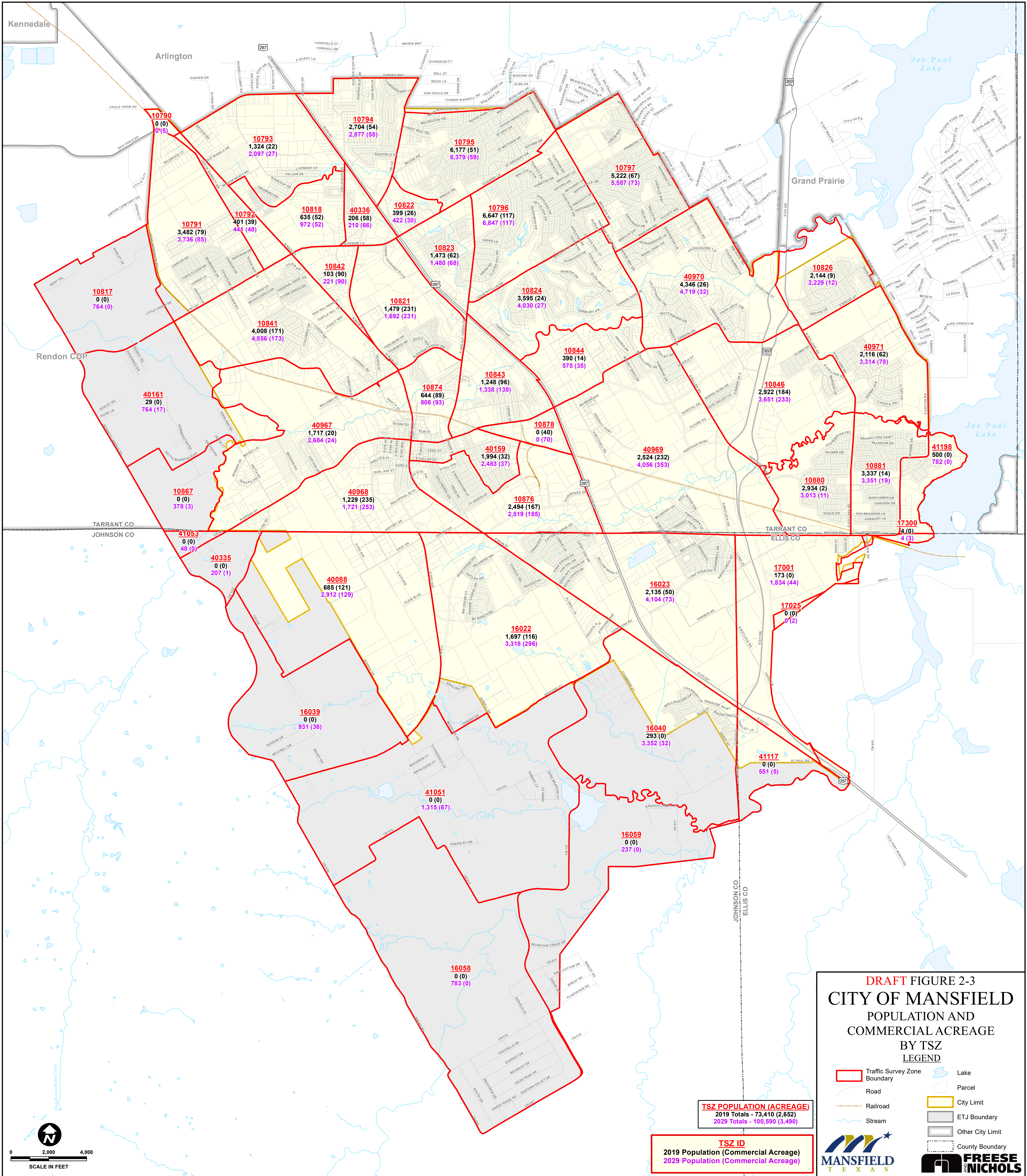
2.3 PROJECTED POPULATION

Projected growth has been characterized in two forms: population and commercial acreage. A series of assumptions were made to arrive at reasonable growth rates for population and commercial acreage. The following assumptions have been made as a basis from which 10-year projections could be initiated. Future land uses will occur based on similar trends of the past and the City will be able to finance the necessary improvements to accommodate continued growth.

NCTCOG forecasts, U.S. Census population estimates, parcel data, the Water and Wastewater Master Plan, and land use information provided by the City were utilized to develop existing and future population and commercial acreage projections for the 2019 and 2029 planning periods. The draft 2040 Population Forecast prepared by NCTCOG was used as a starting point for the population projections. NCTCOG develops population projections for small areas of land called Traffic Survey Zones (TSZs). FNI and City staff reviewed information on existing building permits and several planned developments compared to the NCTCOG estimates to establish the population projections and an average annual growth rate of 3.2%. The existing (2019) population of 73,410 was established using U.S. Census estimates and assuming an average annual growth rate of 3.2%, and the population projections by TSZ were utilized to distribute the population. The parcel data provided by the City was utilized to develop an existing commercial acreage. The Master Plan provided a basis for the commercial acreage projections and was compared to the land use information provided by the City. **Table 2-2** presents the existing and future population and commercial acreage projections for the City. **Figure 2-3** presents the residential population and commercial acreage by TSZ.

Table 2-2: Population Projections

Year	Population	Commercial Acreage
2019	73,410	2,652
2029	100,590	3,490



DRAFT FIGURE 2-3
CITY OF MANSFIELD
POPULATION AND
COMMERCIAL ACREAGE
BY TSZ
LEGEND

- Traffic Survey Zone Boundary
- Road
- Railroad
- Stream
- Lake
- Parcel
- City Limit
- ETJ Boundary
- Other City Limit
- County Boundary

TSZ POPULATION (ACREAGE)
2019 Totals - 73,410 (2,652)
2029 Totals - 100,590 (3,490)

TSZ ID
2019 Population (Commercial Acreage)
2029 Population (Commercial Acreage)



3.0 CAPITAL IMPROVEMENTS PLAN

A capital improvements plan (CIP) was developed for the City of Mansfield as part of the *2019 Water and Wastewater Master Plan*. The recommended improvements will provide the capacity and reliability to meet projected water demands and wastewater flows through Buildout. The water and wastewater projects required to meet growth in the 10-year period were used in the impact fee analysis.

3.1 EXISTING WATER AND WASTEWATER SYSTEMS

The City of Mansfield operates one water treatment plant (WTP) facility with an existing capacity of 45 MGD. The WTP treats raw water supplied by the Tarrant Regional Water District (TRWD) conveyed from the Richland Chambers and Cedar Creek Reservoirs. The existing water distribution system includes three elevated storage tanks (ESTs), six ground storage tanks (GSTs), two High Service Pump Stations (HSPS), two booster pump stations. The City is currently in the process of design/construction of the 2.0 MG Industrial EST, planned to be in-service by 2020. The two booster pump stations are used in emergency situations only and boost the pressure in higher elevation regions of the water system. The City is divided into two pressure planes, the Lower Pressure Plane (LPP) and the Upper Pressure Plane (UPP), with a total of 314 miles of water lines ranging in diameter from 1-inch to 54-inches. The pipeline system ranges in age from less than a year to 57 years old with a median age of approximately 19 years old. The City currently provides wholesale water service to Johnson County Special Utility District (JCSUD) and has infrastructure in place to provide the City of Grand Prairie wholesale water service in the future. The City also retains two emergency interconnects with the City of Arlington in the UPP and one emergency interconnect with the City of Grand Prairie in the LPP.

The City of Mansfield's wastewater service area covers approximately 54 square miles. Within the service area, there are approximately 284 miles of sewer lines that are owned and operated by the City. The wastewater collection system is primarily a gravity flow system that follows the major drainage features of the service area. The City's collection system consists of eight major sewer basins. The major sewer basins include the Hogpen Branch, Lifetime Arlington Meter, Lone Star, Low Branch, Manchester Arlington Meter, Reese Branch, Walnut Creek Lower and Walnut Creek Upper Basins. The wastewater lines range from 4-to 42-inches in diameter and convey wastewater flow to two Arlington wholesale meters and two TRA wholesale meters.

3.2 WATER AND WASTEWATER LOAD PROJECTIONS

As part of the *2019 Water and Wastewater Master Plan*, land use data and historical water demands and wastewater flow characteristics were used to develop future water demands and wastewater flows based on a projected average day per capita usage and peaking factors. These projections were the basis for determining the location and magnitude of the CIP projects. **Table 3-1** presents the projected water demands, and **Table 3-1** presents the projected wastewater flows for the City of Mansfield.

Table 3-1: Projected Water Demands

Year	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Peak Hour Demand (MGD)
2019	12.52	27.54	48.20
2029	16.96	37.31	65.29

Table 3-2: Projected Wastewater Flows

Year	Average Day Wastewater Flow (MGD)	Peak Wet Weather Flow (MGD)
2019	8.73	34.92
2029	11.84	47.36

3.3 WATER AND WASTEWATER SYSTEM ANALYSES

The water and wastewater system analyses were conducted as part of the *2019 Water and Wastewater Master Plan*. FNI conducted hydraulic analyses to identify deficiencies in the City of Mansfield's water distribution and wastewater collection system and to establish a capital improvements plan to reinforce the existing system and meet projected water demands and convey projected wastewater flows through Buildout.

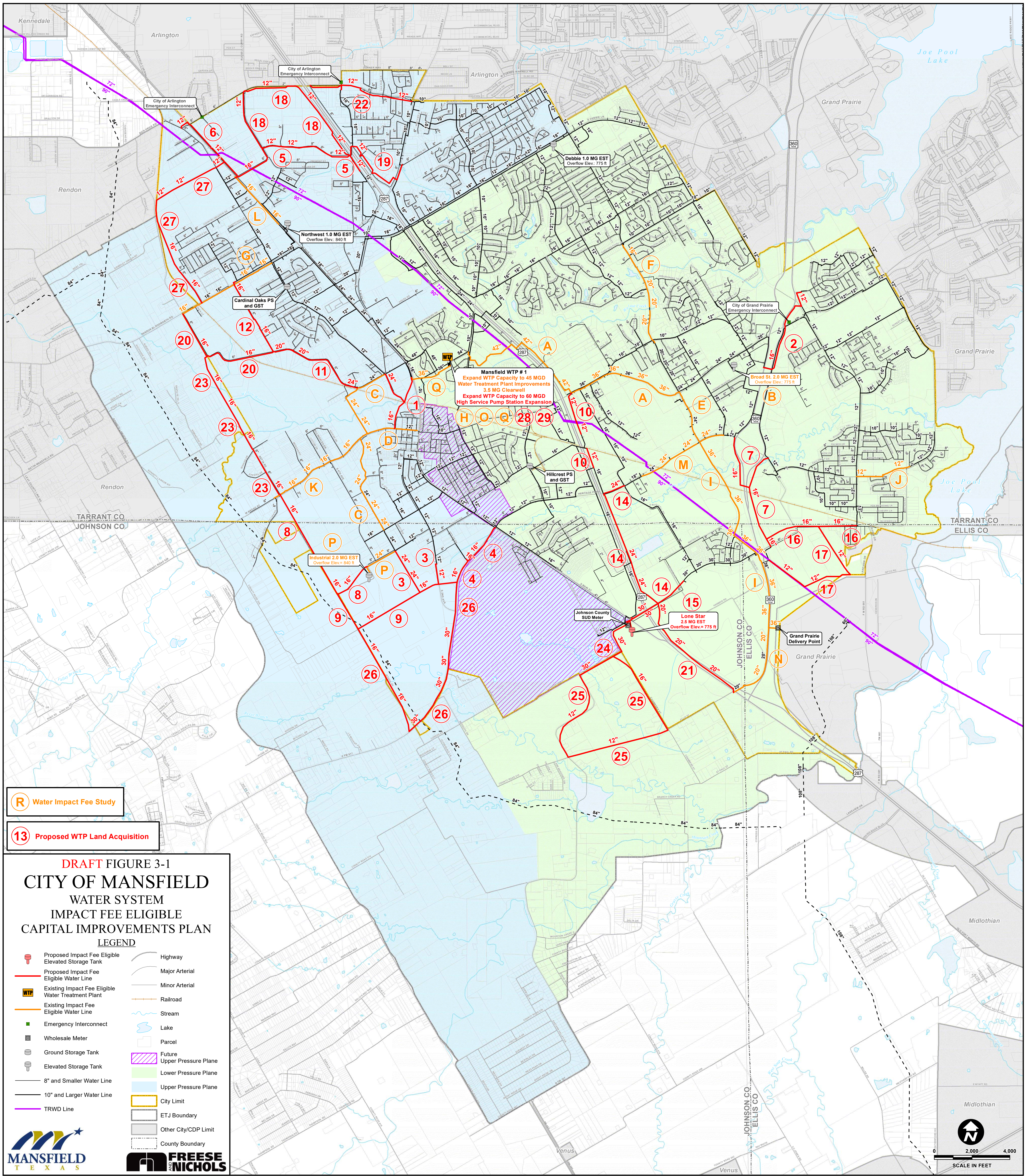
3.4 WATER AND WASTEWATER SYSTEM IMPROVEMENTS

Proposed water and wastewater system improvement projects were developed as part of the *2019 Water and Wastewater Master Plan*. Impact fee eligible projects were determined based on projects needed to meet growth and recently completed/under design projects with excess capacity for new development. **Table 3-3** summarizes the cost of the water and sewer system impact fee eligible CIP. Detailed project cost estimates for the water and wastewater system are included in **Appendix A** and **B**, respectively. Costs listed for the existing projects are based on actual design and construction costs provided by the City. The

proposed 10-year water system projects are shown on **Figure 3-1**. The proposed 10-year wastewater system projects are shown on **Figure 3-2**.

Table 3-3: Proposed Impact Fee Eligible CIP Projects

Impact Fee Eligible CIP	Total Project Cost
Existing Water Projects	\$65,735,099
Proposed Water Projects	\$84,977,000
WATER CIP TOTAL	\$150,712,099
Existing Wastewater Projects	\$18,673,432
Proposed Wastewater Projects	\$39,348,400
WASTEWATER CIP TOTAL	\$58,021,832

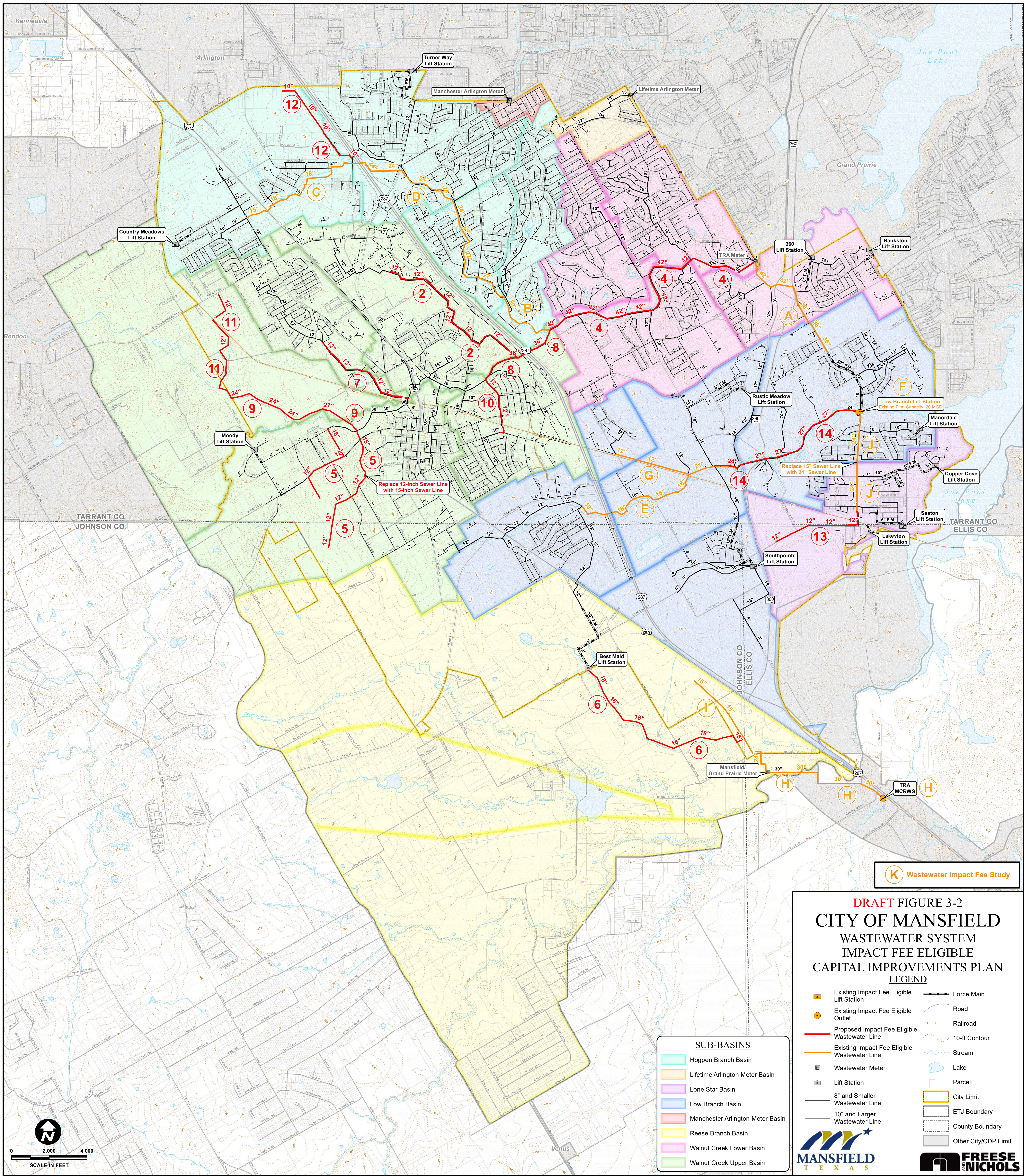


R Water Impact Fee Study

13 Proposed WTP Land Acquisition

DRAFT FIGURE 3-1
CITY OF MANSFIELD
WATER SYSTEM
IMPACT FEE ELIGIBLE
CAPITAL IMPROVEMENTS PLAN
LEGEND

- Proposed Impact Fee Eligible Elevated Storage Tank
- Proposed Impact Fee Eligible Water Line
- Existing Impact Fee Eligible Water Treatment Plant
- Existing Impact Fee Eligible Water Line
- Emergency Interconnect
- Wholesale Meter
- Ground Storage Tank
- Elevated Storage Tank
- 8" and Smaller Water Line
- 10" and Larger Water Line
- TRWD Line
- Highway
- Major Arterial
- Minor Arterial
- Railroad
- Stream
- Lake
- Parcel
- Future Upper Pressure Plane
- Lower Pressure Plane
- Upper Pressure Plane
- City Limit
- ETJ Boundary
- Other City/CDP Limit
- County Boundary

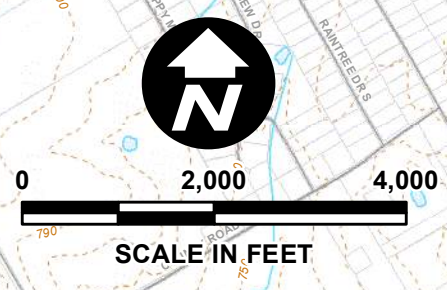


K Wastewater Impact Fee Study

DRAFT FIGURE 3-2
CITY OF MANSFIELD
WASTEWATER SYSTEM
IMPACT FEE ELIGIBLE
CAPITAL IMPROVEMENTS PLAN
LEGEND

SUB-BASINS	
	Hogpen Branch Basin
	Lifetime Arlington Meter Basin
	Lone Star Basin
	Low Branch Basin
	Manchester Arlington Meter Basin
	Reese Branch Basin
	Walnut Creek Lower Basin
	Walnut Creek Upper Basin

	Existing Impact Fee Eligible Lift Station		Force Main
	Existing Impact Fee Eligible Outlet		Road
	Proposed Impact Fee Eligible Wastewater Line		Railroad
	Existing Impact Fee Eligible Wastewater Line		10-ft Contour
	Wastewater Meter		Stream
	Lift Station		Lake
	8" and Smaller Wastewater Line		Parcel
	10" and Larger Wastewater Line		City Limit
			ETJ Boundary
			County Boundary
			Other City/CDP Limit



4.0 IMPACT FEE ANALYSIS

The impact fee analysis involves determining the utilization of existing and proposed projects required as defined by the capital improvement plan to serve new development over the next 10-year time period. For existing or proposed projects, the impact fee is calculated as a percentage of the project cost, based upon the percentage of the project's capacity required to serve development projected to occur between 2019 and 2029. Capacity serving existing development and development projected for more than 10 years in the future cannot be charged to impact fees.

4.1.1 Service Units

According to Chapter 395 of the Texas Local Government Code, the maximum impact fee may not exceed the amount determined by dividing the cost of capital improvements required by the total number of service units attributed to new development during the impact fee eligibility period. A water service unit is defined as the service equivalent to a water connection for a single-family residence. The City does not directly meter wastewater flows and bills for wastewater services are based on the customer's water consumption. Therefore, a wastewater service unit is defined as the wastewater service provided to a customer with a water connection for a single-family residence.

The service associated with public, commercial, and industrial connections is converted into service units based upon the capacity of the meter used to provide service. The number of service units required to represent each meter size is based on the safe maximum operating capacity of the appropriate meter type. The City primarily uses displacement/multi-jet meters for sizes 2-inch and smaller. Ultrasonic meters are typically used for sizes greater than 2 inches. The safe maximum operating capacity was determined using information from the water meter supplier for the City (Master Meter, Inc) and input from City staff. The service unit equivalent for each meter size used by the City is listed in **Table 4-1**.

Typically, in Mansfield, single-family residences are served with 3/4-inch multi-jet water meters. Larger meters represent multi-family, public, commercial, and industrial water use. The City provided data that included the meter size of each active water meter. **Table 4-1** shows the existing service units for 2019 and the projected service units for 2029.

Table 4-1: Service Unit Equivalencies

Meter Size	Type⁽¹⁾	Safe Maximum Operating Capacity⁽¹⁾ (gpm)	Service Unit Equivalent (SUE)
3/4"	Multi-jet	30	1
1"	Multi-jet	50	1.7
1 1/2"	Multi-jet	100	3.3
2"	Multi-jet	160	5.3
2"	Ultrasonic	250	8.3
3"	Compound	330	11.0
3"	Ultrasonic	500	16.7
4"	Compound	440	14.7
4"	Ultrasonic	1,000	33.3
6"	Compound	1,200	40.0
6"	Ultrasonic	1,600	53.3
8"	Turbine	2,800	93.3

⁽¹⁾Safe maximum operating capacity is based on Master Meter Inc. specifications and input from City staff.

Table 4-2: Projected Service Units

Meter Size	Type⁽¹⁾	Existing Meters	Existing SUEs	Projected Meters	Projected SUEs	Projected Growth in SUEs
3/4"	Multi-jet	22,286	22,286	30,252	30,252	7,966
1"	Multi-jet	1,244	2,115	1,689	2,871	756
1 1/2"	Multi-jet	216	713	293	967	254
2"	Multi-jet	494	4,100	494	2,618	0
2"	Ultrasonic	0	0	198	1,643	1,643
3"	Compound	47	785	47	517	0
3"	Ultrasonic	0	0	17	284	284
4"	Compound	55	1,832	55	809	0
4"	Ultrasonic	0	0	2	67	67
6"	Compound	9	480	9	360	0
6"	Ultrasonic	0	0	0	0	0
8"	Turbine	1	93	1	93	0
Total		24,352	29,511	33,057	40,481	10,970

Note: Water and wastewater service units are assumed to be equal

4.1.2 Water and Wastewater Capacity Analysis

Eligible existing and proposed water and wastewater projects were evaluated to determine the proportion of the project that will be utilized within the next 10 years. The 10-year utilization will define

the percentage of the project cost that is impact fee eligible. A summary of the proportion of the project costs required for the 10-year growth period used in the impact fee analysis for both the water and wastewater systems are shown in **Table 4-3** and **4-4**, respectively. The 2019 percent utilization is the portion of a project's capacity required to serve existing development and is therefore not included in the impact fee eligible cost. The 2029 percent utilization is the portion of the project's capacity that will be utilized by 2029. The 2019 - 2029 percent utilization is the portion of the project's capacity required to serve growth from 2019 to 2029. The portion of a project's total cost that is used to serve growth projected to occur from 2019 through 2029 is calculated as the total project cost multiplied by the 2019 - 2029 percent utilization. Only this portion of the cost is used in the impact fee analysis.

Table 4-3: Cost Allocation for Water Impact Fee Calculation

Proj. No.	Project Name	Percent Utilization			Costs Based on 2019 Dollars	
		2019 ⁽¹⁾	2029	10-Year 2019-2029	Capital Cost	10-Year 2019-2029
Existing Projects						
A	24/36/42-inch Water Line from SH 360 to Walnut Creek Drive	35%	95%	60%	\$4,575,000	\$2,745,000
B	2.0 MG Broad Elevated Storage Tank	60%	100%	40%	\$2,940,000	\$1,176,000
C	24-inch Water Line along 5th Avenue	70%	90%	20%	\$2,410,000	\$482,000
D	12/16-inch Water Line along Broad Street	30%	80%	50%	\$500,000	\$250,000
E	24-inch Water Line along Matlock Road	30%	90%	60%	\$1,107,120	\$664,272
F	16/20-inch Water Line along Matlock Road	40%	85%	45%	\$500,452	\$225,203
G	16-inch Water Line along FM 1187	10%	60%	50%	\$802,671	\$401,335
H	15 MGD Bud Ervin WTP Expansion	65%	100%	35%	\$24,736,475	\$8,657,766
I	36-inch Water Line - Grand Prairie	5%	45%	40%	\$3,432,491	\$1,372,996
J	12-inch Water Line - National Parkway-Phase 1 and 2	20%	60%	40%	\$197,444	\$78,978
K	16-inch Water Line - West Broad	5%	30%	25%	\$491,056	\$122,764
L	16-inch Water Line - North Main	20%	40%	20%	\$587,321	\$117,464
M	24-inch Water Line - Heritage Parkway	20%	60%	40%	\$533,880	\$213,552
N	20-inch Water Line - 360 (Somerset)	5%	25%	20%	\$716,956	\$143,391
O	Bud Ervin WTP Improvements	75%	100%	25%	\$2,206,800	\$551,700
P	2.0 MG Industrial Elevated Storage Tank and 24-inch Water Line	40%	70%	30%	\$6,953,074	\$2,085,922
Q	36-inch UPP Discharge Line and 3.5 MG Clearwell	5%	25%	20%	\$13,000,000	\$2,600,000
R	Water Impact Fee Study	0%	100%	100%	\$44,359	\$44,359
Existing Project Sub-total					\$65,735,099	\$21,932,704

(1) Utilization in 2019 on proposed projects indicates a portion of the project that will be used to address deficiencies within the existing system and therefore not eligible for impact fee cost recovery for future growth.

Table 4-3: Cost Allocation for Water Impact Fee Calculation - Continued

Proj. No.	Project Name	Percent Utilization			Costs Based on 2019 Dollars	
		2019 ⁽¹⁾	2029	10-Year 2019-2029	Capital Cost	10-Year 2019-2029
Proposed Projects						
1	16/24-inch Water Line Crossing Walnut Creek	0%	50%	50%	\$1,951,500	\$975,750
2	12/16-inch Water Line along State Highway 360	40%	80%	40%	\$1,134,300	\$453,720
3	12/16/24-inch Water Line along 5th Avenue	0%	30%	30%	\$1,455,700	\$436,710
4	16-inch Water Line along FM 917	0%	30%	30%	\$1,533,500	\$460,050
5	12/16-inch Water Line near US Highway 287	10%	60%	50%	\$1,536,700	\$768,350
6	12-inch Water Line along Mansfield Highway	30%	85%	55%	\$982,800	\$540,540
7	16-inch Water Line along SH 360	40%	60%	20%	\$1,879,800	\$375,960
8	16-inch Water Line along Hanks Drive	0%	35%	35%	\$1,906,800	\$667,380
9	16-inch Water Line along Jessica Drive	0%	30%	30%	\$1,315,800	\$394,740
10	12-inch Water Line along US Highway 287	30%	100%	70%	\$665,100	\$465,570
11	20/24-inch Water Line near FM 528	5%	40%	35%	\$1,659,700	\$580,895
12	16-inch Water Line near FM 528	35%	55%	20%	\$1,102,400	\$220,480
13	Proposed WTP Land Acquisition	0%	100%	100%	\$692,200	\$692,200
14	24/30-inch Water Line along US Highway 287	15%	75%	60%	\$4,176,100	\$2,505,660
15	2.0 MG Lone Star Elevated Storage Tank	0%	40%	40%	\$5,054,600	\$2,001,622
16	16-inch Water Line along Britton Road	15%	65%	50%	\$1,176,300	\$588,150
17	12-inch Water Line in Southeast Lower Pressure Plane	0%	30%	30%	\$1,315,800	\$394,740
18	12-inch Water Line near Northern City Limits	48%	90%	42%	\$1,804,600	\$757,932
19	12/16-inch Water Line along US 287	20%	45%	25%	\$1,565,500	\$391,375
20	16-inch Water Line along Newt Patterson Road	5%	45%	40%	\$1,488,100	\$595,240
21	20-inch Water Line along US Highway 287	0%	30%	30%	\$1,876,500	\$562,950
22	12-inch Water Line along Turner Warnell Road	55%	95%	40%	\$1,482,600	\$593,040
23	16-inch Water Line along Retta Road	5%	30%	25%	\$1,946,600	\$486,650
24	30-inch Water Line along Lone Star Road	0%	5%	5%	\$2,097,300	\$104,865
25	12/16-inch Water Line along FM 157 and Chambers Street	0%	10%	10%	\$2,840,700	\$284,070
26	16/30-inch Water Lines along Jessica Drive	0%	15%	15%	\$5,158,500	\$773,775
27	12/16-inch Water Line along Newt Patterson Road	0%	35%	35%	\$2,334,500	\$817,075
28	15 MGD Bud Ervin WTP Expansion	0%	35%	35%	\$21,630,000	\$7,570,500
29	Bud Ervin WTP High Service Pump Station Expansion	45%	80%	35%	\$11,213,000	\$3,946,976
Proposed Project Sub-total					\$84,977,000	\$29,406,965
Total Water Capital Improvements Cost					\$150,712,099	\$51,339,668

Table 4-4: Cost Allocation for Water Impact Fee Calculation

Proj. No. ⁽¹⁾	Project Name	Percent Utilization			Costs Based on 2019 Dollars	
		2019 ⁽²⁾	2029	10-Year 2019-2029	Capital Cost	10-Year 2019-2029
Existing Projects						
A	36/42-inch Holland Road Interceptor	30%	65%	35%	\$2,250,000	\$787,500
B	27/30-inch Hogpen Interceptor (Phase I)	85%	100%	15%	\$1,083,596	\$162,539
C	15/18-inch Hogpen Interceptor (Phase II)	40%	70%	30%	\$900,000	\$270,000
D	21/24-inch Hogpen Interceptor (Phase III)	50%	85%	35%	\$2,500,000	\$875,000
E	18/21-inch Low Branch Interceptor	50%	75%	25%	\$826,575	\$206,644
F	Low Branch Lift Station	35%	60%	25%	\$5,643,128	\$1,404,292
G	12-inch Low Branch Sewer Main	10%	35%	25%	\$322,869	\$80,717
H	TRA Mountain Creek System Interconnect and Grand Prairie Participation	5%	70%	65%	\$3,239,949	\$2,105,967
I	15/18-inch Sewer Main along Hardy Street	10%	100%	90%	\$561,756	\$505,580
J	24-inch Sewer Main along Holland Road	40%	80%	40%	\$1,301,200	\$520,480
K	Wastewater Impact Fee Study	0%	100%	100%	\$44,359	\$44,359
Existing Project Sub-total					\$18,673,432	\$6,963,079
Proposed Projects						
2	12-inch Sewer Main along North US 287	35%	90%	55%	\$2,676,700	\$1,472,185
4	42-inch Sewer Main in Walnut Creek Lower Basin	20%	65%	45%	\$11,009,600	\$4,954,320
5	12/15-inch Sewer Main in Walnut Creek Upper Basin	30%	85%	55%	\$3,241,500	\$1,782,825
6	18-inch Sewer Main in Reese Branch Basin	5%	70%	65%	\$3,923,700	\$2,550,405
7	12-inch Sewer Main near Newt Patterson Road	25%	95%	70%	\$1,490,400	\$1,043,280
8	36-inch Sewer Main along Walnut Creek	15%	45%	30%	\$3,137,000	\$941,100
9	24/27-inch Sewer Main along Willow Branch	0%	40%	40%	\$3,091,300	\$1,236,520
10	12-inch Sewer Main near Magnolia Street	10%	45%	35%	\$958,100	\$335,335
11	12-inch Sewer Main South of FM 1187	0%	45%	45%	\$1,579,700	\$710,865
12	10-inch Sewer Main along US 287	0%	50%	50%	\$1,333,200	\$666,600
13	12/15-inch along Britton Road	0%	65%	65%	\$1,441,800	\$937,170
14	24/27-inch Sewer Main along Low Branch Creek	5%	35%	30%	\$5,465,400	\$1,639,620
Proposed Project Sub-total					\$39,348,400	\$18,270,225
Total Wastewater Capital Improvements Cost					\$58,021,832	\$25,233,304

(1) Project numbers correspond to the 2019 Water and Wastewater Master Plan. Projects 1 and 3 are not included as they are not Impact Fee eligible.

(2) Utilization in 2019 on Proposed Projects indicates a portion of the project that will be used to address deficiencies within the existing system and therefore not eligible for impact fee cost recovery for future growth.

4.1.3 Maximum Impact Fee Calculations

Texas Government Code Chapter 395 outlines the procedures and requirements for calculating maximum allowable impact fees to recover costs associated with capital improvement projects needed due to growth over a 10-year period. Chapter 395 also requires a plan that addresses possible duplication of payments for capital improvements. This plan can either provide a credit for the portion of revenues generated by new development that is used for the payment of eligible improvements, including payment of debt, or reduce the total eligible project costs by 50 percent. The City of Mansfield has selected to utilize the reduction of the total eligible project costs by 50 percent to determine the maximum allowable impact fees.

Chapter 395 of the Texas Local Government Code states that the maximum impact fee may not exceed the amount determined by dividing the cost of capital improvements required by the total number of service units attributed to new development during the impact fee eligibility period less the credit to account for water and wastewater revenues used to finance capital improvement plans.

The total projected costs include the projected capital improvement costs to serve 10-year development, the projected finance cost for the capital improvements, and the consultant cost for preparing and updating the Capital Improvements Plan. The financing costs are based on the compound interest paid over the first 10 years of a 30-year bond. The interest rate assumed for the impact fee calculations is 4.0% for both the existing and proposed projects. **Tables 4-5** and **4-6** display a summary of the maximum allowable impact fee calculations for water and wastewater, respectively.

Table 4-5: Maximum Water Impact Fee Calculation

Water Impact Fee	
Eligible Capital Improvement Costs	\$51,339,668
Financing Costs (4%)	\$16,005,680
Total Eligible Impact Fee Costs	\$67,345,349
Water Impact Fee Credit (50%)	\$33,672,674
Growth in Service Units	10,970
$\begin{aligned} \text{Maximum Allowable Water Impact Fee} &= \frac{\text{Total Eligible Cost} - \text{Credit}}{\text{Growth in Service Units}} \\ &= \frac{\$67,345,349 - \$33,672,674}{10,970} \end{aligned}$	
	\$3,070

Table 4-6: Maximum Wastewater Impact Fee Calculation

Wastewater Impact Fee	
Eligible Capital Improvement Costs	\$25,233,304
Financing Costs (4%)	\$7,866,747
Total Eligible Impact Fee Costs	\$33,100,051
Wastewater Impact Fee Credit (50%)	\$16,550,026
Growth in Service Units	10,970
$\begin{aligned} \text{Maximum Allowable Wastewater Impact Fee} &= \frac{\text{Total Eligible Cost} - \text{Credit}}{\text{Growth in Service Units}} \\ &= \frac{\$33,100,051 - \$16,550,026}{10,970} \end{aligned}$	
	\$1,509

Appendix A

Water System Project Cost Estimates

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 1

Phase: 2024

Project Name: 16/24-inch Water Line Crossing Walnut Creek

Project Description:

This project consists of a 24-inch water line from Newt Patterson Road to the Union Pacific Railroad and from Main Street to the Union Pacific Railroad. This project also consists of a 16-inch water line from the Union Pacific Railroad to Broad Street.

Project Drivers:

The proposed water line will provide additional transmission capacity and relieve low available fire flows in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	1,800	LF	\$ 144	\$ 259,200
2	24" WL & Appurtenances	3,400	LF	\$ 216	\$ 734,400
3	38" Boring and Casing	400	LF	\$ 665	\$ 266,000
4	Water Pavement Repair	2,000	LF	\$ 75	\$ 150,000
				SUBTOTAL:	\$ 1,409,600
				CONTINGENCY	20%
					\$ 282,000
				SUBTOTAL:	\$ 1,691,600
				ENG/SURVEY	12%
					\$ 203,000
				SUBTOTAL:	\$ 1,894,600
				2019 ENR Adjustment	3%
					\$ 56,900
Estimated Project Total:					\$ 1,951,500

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 2

Phase: 2024

Project Name: 12/16-inch Water Line along State Highway 360

Project Description:

This project consists of a 16-inch water line from Broad Street to Highway 360, and a 12-inch water line along Holland Road.

Project Drivers:

The proposed water line will provide additional transmission capacity and relieve high headlosses observed in the Lower Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	4,500	LF	\$ 144	\$ 648,000
2	12" WL & Appurtenances	1,100	LF	\$ 108	\$ 118,800
3	30" Boring and Casing	100	LF	\$ 525	\$ 52,500
SUBTOTAL:					\$ 819,300
CONTINGENCY				20%	\$ 163,900
SUBTOTAL:					\$ 983,200
ENG/SURVEY				12%	\$ 118,000
SUBTOTAL:					\$ 1,101,200
2019 ENR Adjustment				3%	\$ 33,100
Estimated Project Total:					\$ 1,134,300

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 3

Phase: 2024

Project Name: 12/16/24-inch Water Line along 5th Avenue

Project Description:

This project consists of a 24-inch water line along 5th Avenue from Easy Drive to Klien Boulevard, a 16-inch water line along Klien Boulevard from 5th Avenue to 2nd Avenue, and a 12-inch water line along 2nd Avenue from Klien Boulevard to the existing 12-inch water line.

Project Drivers:

The proposed water line will provide additional transmission capacity to the Industrial EST.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	24" WL & Appurtenances	2,900	LF	\$ 216	\$ 626,400
2	16" WL & Appurtenances	1,300	LF	\$ 144	\$ 187,200
3	12" WL & Appurtenances	1,300	LF	\$ 108	\$ 140,400
4	Water Pavement Repair	1,300	LF	\$ 75	\$ 97,500
				SUBTOTAL:	\$ 1,051,500
				CONTINGENCY	20%
					\$ 210,300
				SUBTOTAL:	\$ 1,261,800
				ENG/SURVEY	12%
					\$ 151,500
				SUBTOTAL:	\$ 1,413,300
				2019 ENR Adjustment	3%
					\$ 42,400
				Estimated Project Total:	\$ 1,455,700

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 4

Phase: 2024

Project Name: 16-inch Water Line along FM 917

Project Description:

This project consists of a 16-inch water line along FM 917 from Main Street to 2nd Avenue.

Project Drivers:

The proposed water line will provide additional transmission capacity to the Industrial EST and extend water service for future growth in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	5,400	LF	\$ 144	\$ 777,600
2	Water Pavement Repair	4,400	LF	\$ 75	\$ 330,000
				SUBTOTAL:	\$ 1,107,600
				CONTINGENCY	20%
					\$ 221,600
				SUBTOTAL:	\$ 1,329,200
				ENG/SURVEY	12%
					\$ 159,600
				SUBTOTAL:	\$ 1,488,800
				2019 ENR Adjustment	3%
					\$ 44,700
Estimated Project Total:					\$ 1,533,500

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 5

Phase: 2024

Project Name: 12/16-inch Water Line near US Highway 287

Project Description:

This project consists of a 16-inch water line from Nelson Wyatt Road and Main Street to the existing 12-inch water line along Highway 287.

Project Drivers:

The proposed water line will provide additional transmission capacity and relieve low available fire flows in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	2,700	LF	\$ 144	\$ 388,800
2	12" WL & Appurtenances	6,400	LF	\$ 108	\$ 691,200
3	Water Pavement Repair	400	LF	\$ 75	\$ 30,000
SUBTOTAL:					\$ 1,110,000
CONTINGENCY				20%	\$ 222,000
SUBTOTAL:					\$ 1,332,000
ENG/SURVEY				12%	\$ 159,900
SUBTOTAL:					\$ 1,491,900
2019 ENR Adjustment				3%	\$ 44,800
Estimated Project Total:					\$ 1,536,700

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 6

Phase: 2024

Project Name: 12-inch Water Line along Mansfield Highway

Project Description:

This project consists of a 12-inch water line along Mansfield Highway from Turner Warnell to Nelson Wyatt Road.

Project Drivers:

The proposed water line will provide additional transmission capacity and relieve low available fire flows in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	5,600	LF	\$ 108	\$ 604,800
2	20" Boring and Casing	300	LF	\$ 350	\$ 105,000
				SUBTOTAL:	\$ 709,800
				CONTINGENCY	20%
					\$ 142,000
				SUBTOTAL:	\$ 851,800
				ENG/SURVEY	12%
					\$ 102,300
				SUBTOTAL:	\$ 954,100
				2019 ENR Adjustment	3%
					\$ 28,700
Estimated Project Total:					\$ 982,800

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 7

Phase: 2024

Project Name: 16-inch Water Line along SH 360

Project Description:

This project consists of a 16-inch water line along SH 360 between Heritage Parkway and Lone Star Road.

Project Drivers:

The proposed water line will provide additional transmission capacity and relieve high headlosses observed in the Lower Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	8,700	LF	\$ 144	\$ 1,252,800
2	30" Boring and Casing	200	LF	\$ 525	\$ 105,000
				SUBTOTAL:	\$ 1,357,800
				CONTINGENCY	20%
					\$ 271,600
				SUBTOTAL:	\$ 1,629,400
				ENG/SURVEY	12%
					\$ 195,600
				SUBTOTAL:	\$ 1,825,000
				2019 ENR Adjustment	3%
					\$ 54,800
Estimated Project Total:					\$ 1,879,800

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 8

Phase: 2024

Project Name: 16-inch Water Line along Hanks Drive

Project Description:

This project consists of a 16-inch water line at Broad Street and Lillian Road running South to Hanks Drive.

Project Drivers:

The proposed water line will provide additional transmission capacity to the Industrial EST and extend water service for future growth in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	9,200	LF	\$ 144	\$ 1,324,800
2	30" Boring and Casing	100	LF	\$ 525	\$ 52,500
				SUBTOTAL:	\$ 1,377,300
				CONTINGENCY	20%
				SUBTOTAL:	\$ 1,652,800
				ENG/SURVEY	12%
				SUBTOTAL:	\$ 1,851,200
				2019 ENR Adjustment	3%
					\$ 55,600
Estimated Project Total:					\$ 1,906,800

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 9

Phase: 2024

Project Name: 16-inch Water Line along Jessica Drive

Project Description:

This project consists of a 16-inch water line along Jessica Drive to CR 526.

Project Drivers:

The proposed water line will provide additional transmission capacity to the Industrial EST and extend water service for future growth in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	6,600	LF	\$ 144	\$ 950,400
SUBTOTAL:					\$ 950,400
CONTINGENCY				20%	\$ 190,100
SUBTOTAL:					\$ 1,140,500
ENG/SURVEY				12%	\$ 136,900
SUBTOTAL:					\$ 1,277,400
2019 ENR Adjustment				3%	\$ 38,400
Estimated Project Total:					\$ 1,315,800

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 10

Phase: 2024

Project Name: 12-inch Water Line along US Highway 287

Project Description:

This project consists of a 12-inch water line along US Highway 287 south of Broad Street.

Project Drivers:

The proposed water line will provide additional transmission capacity to the Lower Pressure Plane to offset low pressures observed near the JCSUD meter.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	3,800	LF	\$ 108	\$ 410,400
2	20" Boring and Casing	200	LF	\$ 350	\$ 70,000
				SUBTOTAL:	\$ 480,400
				CONTINGENCY 20%	\$ 96,100
				SUBTOTAL:	\$ 576,500
				ENG/SURVEY 12%	\$ 69,200
				SUBTOTAL:	\$ 645,700
				2019 ENR Adjustment 3%	\$ 19,400
				Estimated Project Total:	\$ 665,100

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 11

Phase: 2024

Project Name: 20/24-inch Water Line near FM 528

Project Description:

This project consists of a 20/24-inch water line along New Patterson Road East of Tate Street.

Project Drivers:

The proposed water line will provide additional transmission capacity to the Northwest EST and relieve low available fire flows in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	24" WL & Appurtenances	3,800	LF	\$ 216	\$ 820,800
2	20" WL & Appurtenances	2,100	LF	\$ 180	\$ 378,000
SUBTOTAL:					\$ 1,198,800
CONTINGENCY				20%	\$ 239,800
SUBTOTAL:					\$ 1,438,600
ENG/SURVEY				12%	\$ 172,700
SUBTOTAL:					\$ 1,611,300
2019 ENR Adjustment				3%	\$ 48,400
Estimated Project Total:					\$ 1,659,700

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 12

Phase: 2024

Project Name: 16-inch Water Line near FM 528

Project Description:

This project consists of a 16-inch water line along Hyview Road between FM 1187 and New Patterson Road.

Project Drivers:

The proposed water line will provide additional transmission capacity to the Northwest EST and relieve low available fire flows in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	4,800	LF	\$ 144	\$ 691,200
2	30" Boring and Casing	200	LF	\$ 525	\$ 105,000
				SUBTOTAL:	\$ 796,200
				CONTINGENCY	20%
					\$ 159,300
				SUBTOTAL:	\$ 955,500
				ENG/SURVEY	12%
					\$ 114,700
				SUBTOTAL:	\$ 1,070,200
				2019 ENR Adjustment	3%
					\$ 32,200
Estimated Project Total:					\$ 1,102,400

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 13

Phase: 2029

Project Name: Proposed WTP Land Acquisition

Project Description:

This project consists of purchasing the land required for the proposed Water Treatment Plant.

Project Drivers:

This project will ensure the land for the proposed WTP is available.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Land Acquisition	1	Ea	\$ 500,000	\$ 500,000
				SUBTOTAL:	\$ 500,000
				CONTINGENCY	20%
					\$ 100,000
				SUBTOTAL:	\$ 600,000
				ENG/SURVEY	12%
					\$ 72,000
				SUBTOTAL:	\$ 672,000
				2019 ENR Adjustment	3%
					\$ 20,200
				Estimated Project Total:	\$ 692,200

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 14

Phase: 2029

Project Name: 24/30-inch Water Line along US Highway 287

Project Description:

This project consists of a 24/30-inch water line along US Highway 287 from Heritage Parkway to the existing 30-inch water line along Lone Star Road.

Project Drivers:

The proposed water line will provide additional transmission capacity to the Lower Pressure Plane to offset low pressures observed near the JCSUD meter.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	30" WL & Appurtenances	3,800	LF	\$ 270	\$ 1,026,000
2	24" WL & Appurtenances	8,600	LF	\$ 216	\$ 1,857,600
3	38" Boring and Casing	200	LF	\$ 665	\$ 133,000
				SUBTOTAL:	\$ 3,016,600
				CONTINGENCY	20%
					\$ 603,400
				SUBTOTAL:	\$ 3,620,000
				ENG/SURVEY	12%
					\$ 434,400
				SUBTOTAL:	\$ 4,054,400
				2019 ENR Adjustment	3%
					\$ 121,700
Estimated Project Total:					\$ 4,176,100

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 15

Phase: 2029

Project Name: 2.0 MG Lone Star Elevated Storage Tank

Project Description:

This project consists of a 2.0 MG Lone Star Elevated Storage Tank and 24-inch water line.

Project Drivers:

The proposed EST will provide the required storage to meet peak demands and fire protection in the Lower Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	2.0 MG Elevated Storage Tank	1	LS	\$ 3,500,000	\$ 3,500,000
2	24" WL & Appurtenances	700	LF	\$ 216	\$ 151,200
SUBTOTAL:					\$ 3,651,200
	CONTINGENCY			20%	\$ 730,300
SUBTOTAL:					\$ 4,381,500
	ENG/SURVEY			12%	\$ 525,800
SUBTOTAL:					\$ 4,907,300
	2019 ENR Adjustment			3%	\$ 147,300
Estimated Project Total:					\$ 5,054,600

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 16

Phase: 2029

Project Name: 16-inch Water Line along Britton Road

Project Description:

This project consists of a 16-inch water line along Britton Road in between Holland Road and SH 360.

Project Drivers:

The proposed water line will provide additional transmission capacity and relieve high headlosses observed in the Lower Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	5,900	LF	\$ 144	\$ 849,600
SUBTOTAL:					\$ 849,600
	CONTINGENCY		20%	\$	170,000
SUBTOTAL:					\$ 1,019,600
	ENG/SURVEY		12%	\$	122,400
SUBTOTAL:					\$ 1,142,000
	2019 ENR Adjustment		3%	\$	34,300
Estimated Project Total:					\$ 1,176,300

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 17

Phase: 2029

Project Name: 12-inch Water Line in Southeast Lower Pressure Plane

Project Description:

This project consists of a 12-inch water line south of Lone Star Road between FM 661 and SH 360.

Project Drivers:

The proposed water line will provide increased transmission capacity and extend water service for future growth in the Lower Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	8,800	LF	\$ 108	\$ 950,400
SUBTOTAL:					\$ 950,400
CONTINGENCY				20%	\$ 190,100
SUBTOTAL:					\$ 1,140,500
ENG/SURVEY				12%	\$ 136,900
SUBTOTAL:					\$ 1,277,400
2019 ENR Adjustment				3%	\$ 38,400
Estimated Project Total:					\$ 1,315,800

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 18

Phase: 2029

Project Name: 12-inch Water Line near Northern City Limits

Project Description:

This project consists of a 12-inch water line along Nelson Wyatt Road, Turner Warnell Road, and US 287.

Project Drivers:

The proposed water line will provide additional transmission capacity and relieve low available fire flows in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	12,000	LF	\$ 108	\$ 1,296,000
2	Water Pavement Repair	100	LF	\$ 75	\$ 7,500
SUBTOTAL:					\$ 1,303,500
CONTINGENCY				20%	\$ 260,700
SUBTOTAL:					\$ 1,564,200
ENG/SURVEY				12%	\$ 187,800
SUBTOTAL:					\$ 1,752,000
2019 ENR Adjustment				3%	\$ 52,600
Estimated Project Total:					\$ 1,804,600

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 19

Phase: 2029

Project Name: 12/16-inch Water Line along US 287

Project Description:

This project consists of a 16-inch water line crossing US 287 and a 12-inch water line along US 287 and FM 157.

Project Drivers:

The proposed water line will provide additional transmission capacity and relieve low available fire flows in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	700	LF	\$ 144	\$ 100,800
2	12" WL & Appurtenances	5,000	LF	\$ 108	\$ 540,000
3	30" Boring and Casing	800	LF	\$ 525	\$ 420,000
4	20" Boring and Casing	200	LF	\$ 350	\$ 70,000
SUBTOTAL:					\$ 1,130,800
CONTINGENCY				20%	\$ 226,200
SUBTOTAL:					\$ 1,357,000
ENG/SURVEY				12%	\$ 162,900
SUBTOTAL:					\$ 1,519,900
2019 ENR Adjustment				3%	\$ 45,600
Estimated Project Total:					\$ 1,565,500

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 20

Phase: 2029

Project Name: 16-inch Water Line along Newt Patterson Road

Project Description:

This project consists of a 16-inch water line from FM 1187 to Tate Street.

Project Drivers:

The proposed water line will provide additional transmission capacity and extend water service for future growth in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	7,100	LF	\$ 144	\$ 1,022,400
2	30" Boring and Casing	100	LF	\$ 525	\$ 52,500
SUBTOTAL:					\$ 1,074,900
CONTINGENCY				20%	\$ 215,000
SUBTOTAL:					\$ 1,289,900
ENG/SURVEY				12%	\$ 154,800
SUBTOTAL:					\$ 1,444,700
2019 ENR Adjustment				3%	\$ 43,400
Estimated Project Total:					\$ 1,488,100

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 21

Phase: 2029

Project Name: 20-inch Water Line along US Highway 287

Project Description:

This project consists of a 20-inch water line along US Highway 287 between Lone Star Road and Ellis Street.

Project Drivers:

The proposed water line will provide additional transmission capacity to the Grand Prairie delivery point.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	20" WL & Appurtenances	7,200	LF	\$ 180	\$ 1,296,000
2	34" Boring and Casing	100	LF	\$ 595	\$ 59,500
SUBTOTAL:					\$ 1,355,500
CONTINGENCY				20%	\$ 271,100
SUBTOTAL:					\$ 1,626,600
ENG/SURVEY				12%	\$ 195,200
SUBTOTAL:					\$ 1,821,800
2019 ENR Adjustment				3%	\$ 54,700
Estimated Project Total:					\$ 1,876,500

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 22

Phase: 2029

Project Name: 12-inch Water Line along Turner Warnell Road

Project Description:

This project consists of a 12-inch water line along Turner Warnell Road crossing US 287 to FM 157.

Project Drivers:

The proposed water line will provide additional transmission capacity and relieve low available fire flows in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	7,300	LF	\$ 108	\$ 788,400
2	20" Boring and Casing	700	LF	\$ 350	\$ 245,000
3	Water Pavement Repair	500	LF	\$ 75	\$ 37,500
				SUBTOTAL:	\$ 1,070,900
				CONTINGENCY	20%
					\$ 214,200
				SUBTOTAL:	\$ 1,285,100
				ENG/SURVEY	12%
					\$ 154,300
				SUBTOTAL:	\$ 1,439,400
				2019 ENR Adjustment	3%
					\$ 43,200
Estimated Project Total:					\$ 1,482,600

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 23

Phase: 2029

Project Name: 16-inch Water Line along Retta Road

Project Description:

This project consists of a 16-inch water line along Kirkland and Retta Road between New Patterson Road and Broad Street.

Project Drivers:

The proposed water line will provide additional transmission capacity and extend water service for future growth in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	9,400	LF	\$ 144	\$ 1,353,600
2	30" Boring and Casing	100	LF	\$ 525	\$ 52,500
SUBTOTAL:					\$ 1,406,100
	CONTINGENCY			20%	\$ 281,300
SUBTOTAL:					\$ 1,687,400
	ENG/SURVEY			12%	\$ 202,500
SUBTOTAL:					\$ 1,889,900
	2019 ENR Adjustment			3%	\$ 56,700
Estimated Project Total:					\$ 1,946,600

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 24

Phase: 2029

Project Name: 30-inch Water Line along Lone Star Road

Project Description:

This project consists of a 30-inch water line along Lone Star Road between FM 157 and US 287.

Project Drivers:

The proposed water line will provide additional transmission capacity to the Lone Star EST.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	30" WL & Appurtenances	5,300	LF	\$ 270	\$ 1,431,000
2	48" Boring and Casing	100	LF	\$ 840	\$ 84,000
SUBTOTAL:					\$ 1,515,000
CONTINGENCY				20%	\$ 303,000
SUBTOTAL:					\$ 1,818,000
ENG/SURVEY				12%	\$ 218,200
SUBTOTAL:					\$ 2,036,200
2019 ENR Adjustment				3%	\$ 61,100
Estimated Project Total:					\$ 2,097,300

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 25

Phase: 2029

Project Name: 12/16-inch Water Line along FM 157 and Chambers Street

Project Description:

This project consists of a 12-inch water line south of Benford Street along FM 157 and Ellis Street, and a 16-inch water line along Chambers Street between Bedford Street and Ellis Street.

Project Drivers:

The proposed water line will provide transmission capacity and extend water service for future growth in the Lower Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	5,400	LF	\$ 144	\$ 777,600
2	12" WL & Appurtenances	11,800	LF	\$ 108	\$ 1,274,400
SUBTOTAL:					\$ 2,052,000
CONTINGENCY				20%	\$ 410,400
SUBTOTAL:					\$ 2,462,400
ENG/SURVEY				12%	\$ 295,500
SUBTOTAL:					\$ 2,757,900
2019 ENR Adjustment				3%	\$ 82,800
Estimated Project Total:					\$ 2,840,700

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 26

Phase: 2029

Project Name: 16/30-inch Water Lines along Jessica Drive

Project Description:

This project consists of a 16-inch water line along Jessica Drive and a 30-inch water line along FM 917.

Project Drivers:

The proposed water line will provide additional transmission capacity and extend water service for future growth in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	30" WL & Appurtenances	9,500	LF	\$ 270	\$ 2,565,000
2	16" WL & Appurtenances	6,700	LF	\$ 144	\$ 964,800
3	30" Boring and Casing	100	LF	\$ 525	\$ 52,500
4	Water Pavement Repair	800	LF	\$ 75	\$ 60,000
5	48" Boring and Casing	100	LF	\$ 840	\$ 84,000
SUBTOTAL:					\$ 3,726,300
CONTINGENCY				20%	\$ 745,300
SUBTOTAL:					\$ 4,471,600
ENG/SURVEY				12%	\$ 536,600
SUBTOTAL:					\$ 5,008,200
2019 ENR Adjustment				3%	\$ 150,300
Estimated Project Total:					\$ 5,158,500

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 27

Phase: 2029

Project Name: 12/16-inch Water Line along Newt Patterson Road

Project Description:

This project consists of a 12/16-inch water line along New Patterson Road and the Union Pacific Railroad from FM 1187 to Gertie Barrett Road.

Project Drivers:

The proposed water line will provide additional transmission capacity and relieve low available fire flows in the Upper Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	5,900	LF	\$ 144	\$ 849,600
2	12" WL & Appurtenances	4,900	LF	\$ 108	\$ 529,200
3	30" Boring and Casing	300	LF	\$ 525	\$ 157,500
4	Water Pavement Repair	2,000	LF	\$ 75	\$ 150,000
SUBTOTAL:					\$ 1,686,300
CONTINGENCY				20%	\$ 337,300
SUBTOTAL:					\$ 2,023,600
ENG/SURVEY				12%	\$ 242,900
SUBTOTAL:					\$ 2,266,500
2019 ENR Adjustment				3%	\$ 68,000
Estimated Project Total:					\$ 2,334,500

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 28

Phase: 2029

Project Name: 15 MGD Bud Ervin WTP Expansion

Project Description:

This project consists of a 15 MGD expansion at the existing Bud Ervin Water Treatment Plant to a total capacity of 60 MGD.

Project Drivers:

The proposed WTP expansion will allow the City to meet projected water demands.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	15 MGD WTP Expansion	1	LS	\$ 15,625,000	\$ 15,625,000
				SUBTOTAL:	\$ 15,625,000
				CONTINGENCY	15%
					\$ 2,343,800
				SUBTOTAL:	\$ 17,968,800
				ENG/SURVEY	20%
					\$ 3,593,800
				SUBTOTAL:	\$ 21,562,600
Estimated Project Total:					\$ 21,562,600

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2019

Construction Project Number: 29

Phase: 2029

Project Name: Bud Ervin WTP High Service Pump Station Expansion

Project Description:

This project consists of a 15 MGD expansion of the LPP HSPS to 45 MGD and a 12 MGD expansion of the UPP to 35 MGD.

Project Drivers:

The proposed pump station expansion will allow the City to meet projected water demands.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Pump Station - Expans 12 MGD	1	LS	\$ 3,600,000	\$ 3,600,000
2	Pump Station - Expans 15 MGD	1	LS	\$ 4,500,000	\$ 4,500,000
SUBTOTAL:					\$ 8,100,000
	CONTINGENCY			20%	\$ 1,620,000
SUBTOTAL:					\$ 9,720,000
	ENG/SURVEY			12%	\$ 1,166,400
SUBTOTAL:					\$ 10,886,400
	2019 ENR Adjustment			3%	\$ 326,600
Estimated Project Total:					\$ 11,213,000

Comments:

Appendix B

Wastewater System Project Cost Estimates

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 2

Phase: 2024

Project Name: 12-inch Sewer Main along North US 287

Project Description:

This project consists of a 12-inch sewer line parallel to the existing 12-inch sewer line along US 287 from Debbie Lane to Broad Street.

Project Drivers:

The existing system hydraulic model indicates this line may be experiencing significant surcharging and potential overflows. The proposed improvements provide adequate capacity for projected wastewater flows.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Gravity Main	11,900	LF	\$ 140	\$ 1,666,000
2	48" Diameter Manhole	24	EA	\$ 5,000	\$ 120,000
3	Pavement Repair	1,500	LF	\$ 75	\$ 112,500
4	20" Boring and Casing	100	LF	\$ 350	\$ 35,000
SUBTOTAL:					\$ 1,933,500
CONTINGENCY				20%	\$ 386,700
SUBTOTAL:					\$ 2,320,200
ENG/SURVEY				12%	\$ 278,500
SUBTOTAL:					\$ 2,598,700
2019 ENR Adjustment				3%	\$ 78,000
Estimated Project Total:					\$ 2,676,700

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 4

Phase: 2024

Project Name: 42-inch Sewer Main in Walnut Creek Lower Basin

Project Description:

This project consists of a 42-inch sewer line through the Walnut Creek Lower Basin parallel to the existing 39-inch sewer line from Holland Road to US 287.

Project Drivers:

Projected growth in the Walnut Creek Lower Basin will exceed the capacity of the existing line. The proposed improvement will provide capacity for the projected wastewater flows.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	42" Gravity Main	16,800	LF	\$ 450	\$ 7,560,000
2	72" Diameter Manhole	34	EA	\$ 6,000	\$ 204,000
3	54" Boring and Casing	200	LF	\$ 945	\$ 189,000
		200			
				SUBTOTAL:	\$ 7,953,000
				CONTINGENCY 20%	\$ 1,590,600
				SUBTOTAL:	\$ 9,543,600
				ENG/SURVEY 12%	\$ 1,145,300
				SUBTOTAL:	\$ 10,688,900
				2019 ENR Adjustment 3%	\$ 320,700
				Estimated Project Total:	\$ 11,009,600

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 5

Phase: 2024

Project Name: 12/15-inch Sewer Main in Walnut Creek Upper Basin

Project Description:

This project consists of a 12/15-inch sewer line in the southwest corner of Walnut Creek Upper Basin from south of Broad Street to the existing 24-inch sewer line at Wilson Drive. This project also consists of a 12/15-inch sewer line from west of 6th Avenue to the existing 30-inch sewer line along Walnut Creek, replacing the existing 8/12-inch sewer line.

Project Drivers:

The proposed improvements will provide capacity for projected development in the Walnut Creek Upper Basin.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Gravity Main	8,900	LF	\$ 140	\$ 1,246,000
2	15" Gravity Main	4,900	LF	\$ 200	\$ 980,000
3	60" Diameter Manhole	13	EA	\$ 6,000	\$ 78,000
4	Pavement Repair	500	LF	\$ 75	\$ 37,500
SUBTOTAL:					\$ 2,341,500
CONTINGENCY				20%	\$ 468,300
SUBTOTAL:					\$ 2,809,800
ENG/SURVEY				12%	\$ 337,200
SUBTOTAL:					\$ 3,147,000
2019 ENR Adjustment				3%	\$ 94,500
Estimated Project Total:					\$ 3,241,500

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 6

Phase: 2029

Project Name: Reese Branch Sewer Main

Project Description:

This project consists of decommissioning the Best Maid Lift Station and the construction of an 18-inch sewer line from Bedford Street to the existing 24-inch sewer line at Hardy Street.

Project Drivers:

This project will simplify system operations by eliminating the need to pump the wastewater flow handled by the Best Maid Lift Station.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	18" Gravity Main	12,000	LF	\$ 220	\$ 2,640,000
2	60" Diameter Manhole	28	EA	\$ 6,000	\$ 168,000
3	30" Boring and Casing	50	LF	\$ 525	\$ 26,250
				SUBTOTAL:	\$ 2,834,300
				CONTINGENCY	20%
					\$ 566,900
				SUBTOTAL:	\$ 3,401,200
				ENG/SURVEY	12%
					\$ 408,200
				SUBTOTAL:	\$ 3,809,400
				2019 ENR Adjustment	3%
					\$ 114,300
				Estimated Project Total:	\$ 3,923,700

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 7

Phase: 2029

Project Name: 12-inch Sewer Main near Newt Patterson Road

Project Description:

This project consists of a 12-inch sewer line parallel to the existing 12-inch sewer line near Newt Patterson Road from Cumberland Trail to North Street.

Project Drivers:

Projected growth in the Walnut Creek Upper Basin will exceed the capacity of the existing line. The proposed improvement will provide capacity for the projected wastewater flows.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Gravity Main	7,100	LF	\$ 140	\$ 994,000
2	48" Diameter Manhole	15	EA	\$ 5,000	\$ 75,000
3	Pavement Repair	100	LF	\$ 75	\$ 7,500
				SUBTOTAL:	\$ 1,076,500
				CONTINGENCY	20%
					\$ 215,300
				SUBTOTAL:	\$ 1,291,800
				ENG/SURVEY	12%
					\$ 155,100
				SUBTOTAL:	\$ 1,446,900
				2019 ENR Adjustment	3%
					\$ 43,500
Estimated Project Total:					\$ 1,490,400

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 8

Phase: 2029

Project Name: 36-inch Sewer Main along Walnut Creek

Project Description:

This project consists of a 36-inch sewer line parallel to the existing 30-inch sewer line along Walnut Creek from Laurel Street to Carlin Road.

Project Drivers:

Projected growth in the Walnut Creek Upper Basin will exceed the capacity of the existing line. The proposed improvement will provide capacity for the projected wastewater flows.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	36" Gravity Main	5,500	LF	\$ 400	\$ 2,200,000
2	72" Diameter Manhole	11	EA	\$ 6,000	\$ 66,000
				SUBTOTAL:	\$ 2,266,000
				CONTINGENCY	20%
					\$ 453,200
				SUBTOTAL:	\$ 2,719,200
				ENG/SURVEY	12%
					\$ 326,400
				SUBTOTAL:	\$ 3,045,600
				2019 ENR Adjustment	3%
					\$ 91,400
				Estimated Project Total:	\$ 3,137,000

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 9

Phase: 2029

Project Name: 24/27-inch Sewer Main along Willow Branch

Project Description:

This project consists of a 24/27-inch sewer line along Willow Branch from Kirkland Road to Broad Street.

Project Drivers:

The proposed improvements will provide capacity for projected development in the Walnut Creek Upper Basin.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	24" Gravity Main	5,100	LF	\$ 290	\$ 1,479,000
2	27" Gravity Main	2,000	LF	\$ 320	\$ 640,000
3	72" Diameter Manhole	19	EA	\$ 6,000	\$ 114,000
		SUBTOTAL:		\$	2,233,000
		CONTINGENCY		20%	\$ 446,600
		SUBTOTAL:		\$	2,679,600
		ENG/SURVEY		12%	\$ 321,600
		SUBTOTAL:		\$	3,001,200
		2019 ENR Adjustment		3%	\$ 90,100
		Estimated Project Total:		\$	3,091,300

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 10

Phase: 2029

Project Name: 12-inch Sewer Main near Magnolia Street

Project Description:

This project consists of a 12-inch sewer line parallel to the existing 10-inch sewer line near Magnolia Street from Dallas Street to Palm Court.

Project Drivers:

Projected growth in the Walnut Creek Upper Basin will exceed the capacity of the existing line. The proposed improvement will provide capacity for the projected wastewater flows.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Gravity Main	3,800	LF	\$ 140	\$ 532,000
2	48" Diameter Manhole	8	EA	\$ 5,000	\$ 40,000
3	20" Boring and Casing	150	LF	\$ 350	\$ 52,500
4	Pavement Repair	900	LF	\$ 75	\$ 67,500
SUBTOTAL:					\$ 692,000
CONTINGENCY				20%	\$ 138,400
SUBTOTAL:					\$ 830,400
ENG/SURVEY				12%	\$ 99,700
SUBTOTAL:					\$ 930,100
2019 ENR Adjustment				3%	\$ 28,000
Estimated Project Total:					\$ 958,100

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 11

Phase: 2029

Project Name: 12-inch Sewer Main South of FM 1187

Project Description:

This project consists of a 12-inch sewer line from FM 1187 to the proposed 24-inch sewer line from Project 9.

Project Drivers:

The proposed improvements will provide capacity for projected development in the Walnut Creek Upper Basin.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Gravity Main	6,900	LF	\$ 140	\$ 966,000
2	48" Diameter Manhole	14	EA	\$ 5,000	\$ 70,000
3	20" Boring and Casing	300	LF	\$ 350	\$ 105,000
				SUBTOTAL:	\$ 1,141,000
				CONTINGENCY 20%	\$ 228,200
				SUBTOTAL:	\$ 1,369,200
				ENG/SURVEY 12%	\$ 164,400
				SUBTOTAL:	\$ 1,533,600
				2019 ENR Adjustment 3%	\$ 46,100
				Estimated Project Total:	\$ 1,579,700

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 12

Phase: 2029

Project Name: 10-inch Sewer Main along US 287

Project Description:

This project consists of a 10-inch sewer line from the Northern city limits to the existing 15-inch sewer line at US 287.

Project Drivers:

The proposed improvements will provide capacity for projected development in the Hogpen Branch Basin.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Gravity Main	7,400	LF	\$ 120	\$ 888,000
2	48" Diameter Manhole	15	EA	\$ 5,000	\$ 75,000
SUBTOTAL:					\$ 963,000
	CONTINGENCY			20%	\$ 192,600
SUBTOTAL:					\$ 1,155,600
	ENG/SURVEY			12%	\$ 138,700
SUBTOTAL:					\$ 1,294,300
	2019 ENR Adjustment			3%	\$ 38,900
Estimated Project Total:					\$ 1,333,200

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 13

Phase: 2029

Project Name: 12/15-inch along Britton Road

Project Description:

This project consists of a 12/15-inch sewer line along Britton Road from Lonestar Road to Holland Road.

Project Drivers:

The proposed improvements will provide capacity for projected development in the Lone Star Basin.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Gravity Main	5,000	LF	\$ 140	\$ 700,000
2	15" Gravity Main	800	LF	\$ 200	\$ 160,000
3	48" Diameter Manhole	12	EA	\$ 5,000	\$ 60,000
4	24" Boring and Casing	200	LF	\$ 420	\$ 84,000
5	Pavement Repair	500	LF	\$ 75	\$ 37,500
				SUBTOTAL:	\$ 1,041,500
				CONTINGENCY	20%
					\$ 208,300
				SUBTOTAL:	\$ 1,249,800
				ENG/SURVEY	12%
					\$ 150,000
				SUBTOTAL:	\$ 1,399,800
				2019 ENR Adjustment	3%
					\$ 42,000
				Estimated Project Total:	\$ 1,441,800

Comments:

City of Mansfield



Capital Improvement Cost Estimate

April 2, 2019

Construction Project Number: 14

Phase: 2029

Project Name: 24/27-inch Sewer Main along Low Branch Creek

Project Description:

This project consists of a 24/27-inch sewer line parallel to the existing 24-inch sewer line along Low Branch Creek from North of the Union Pacific Railroad to the Low Branch Lift Station.

Project Drivers:

Projected growth in the Low Branch Basin will exceed the capacity of the existing line. The proposed improvement will provide capacity for the projected wastewater flows.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	24" Gravity Main	1,600	LF	\$ 290	\$ 464,000
2	27" Gravity Main	9,500	LF	\$ 320	\$ 3,040,000
3	60" Diameter Manhole	23	EA	\$ 6,000	\$ 138,000
4	36" Boring and Casing	450	LF	\$ 630	\$ 283,500
5	Pavement Repair	300	LF	\$ 75	\$ 22,500
				SUBTOTAL:	\$ 3,948,000
				CONTINGENCY	20%
					\$ 789,600
				SUBTOTAL:	\$ 4,737,600
				ENG/SURVEY	12%
					\$ 568,600
				SUBTOTAL:	\$ 5,306,200
				2019 ENR Adjustment	3%
					\$ 159,200
				Estimated Project Total:	\$ 5,465,400

Comments: