

**CAPITAL IMPROVEMENT PLAN
AND
IMPACT FEE DETERMINATION
FOR
WATER, WASTEWATER, STREETS AND DRAINAGE**



For The



Cooke County, Texas

July 2026

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.....John D. Bartush
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Introduction

The City of Muenster is located in western Cooke County, Texas, and approximately 15 miles West of Gainesville. U.S. Highway (US HWY) 82 passes through the center of the town running east to west, Farm-to-Market (FM) 373 (Main Street) passes through the center of the town running north to south.

This report will represent the City of Muenster’s inaugural effort at developing impact fees for the future development within the City and its Extraterritorial Jurisdiction (ETJ). The term “impact fee” as used herein refers to a charge or assessment imposed by the City against a new development in order to generate revenue for funding or recouping the costs of capital improvements or facility expansions necessitated by and attributable to a new development. The idea behind an impact fee is that growth should pay for itself. Impact fees can be levied for several purposes, including water, wastewater, stormwater, drainage, flood control and roadway facilities. Impact fees are not to be used for repair, operation, or maintenance of existing facilities or for upgrading, updating, expanding or replacing existing capital improvements to better serve existing development.

Texas Local Government Code Title 12, Chapter 395, FINANCING CAPITAL IMPROVEMENTS REQUIRED BY NEW DEVELOPMENT IN MUNICIPALITIES, COUNTIES, AND CERTAIN OTHER LOCAL GOVERNMENTS describes the process by which a City may impose an assessment against new development in order to fund the costs of capital improvements necessitated by and attributable to new development.

The two most important documents upon which the impact fee must be based are the land use assumptions and the capital improvements plan (CIP). After adopting the land use assumptions and CIP, based on a planning period of 2026 to 2036, the City of Muenster will adopt an impact fee ordinance. Chapter 395 requires political subdivisions to update their land use assumptions and CIP at least every five years, beginning on the date that the CIP is adopted. As such, the City should expect to update their plan in 2031, five years after the ordinance being officially adopted.

Advisory Committee – Capital Improvements Plan

In accordance with Chapter 395 the City Council appointed a Capital Improvements Advisory Committee. The charge to the committee is outlined in 395.058 as follows:

- (c) The advisory committee serves in an advisory capacity and is established to:
 - (1) advise and assist the political subdivision in adopting land use assumptions;
 - (2) review the proposed capital improvements plan amendments and file written comments;
 - (3) monitor and evaluate implementation of the updated capital improvements plan;

- (4) file semiannual reports with respect to the progress of the capital improvements plan and report to the political subdivision any perceived inequities in implementing the plan or imposing the impact fee; and
- (5) advise the political subdivision of the need to update or revise the land use assumptions, capital improvements plan, and impact fee.

Ordinance Number 436, passed on February 10, 2025 by the City Council provided for the appointment of said Advisory Committee. The Advisory Committee has met periodically since its inception in an effort to advise and assist with the preparation of land use assumptions and other aspects of the CIP.

Project Planning Area

Local government code §395.011(b) states “Political subdivisions may enact or impose impact fees on land within their corporate boundaries or extraterritorial jurisdictions (ETJ) only by complying with this chapter, except that impact fees may not be enacted or imposed in the extraterritorial jurisdiction for roadway facilities.” By virtue of its population size, Muenster has an ETJ of ½ mile beyond its city limits. The planning area used herein consists of the city limits and portions of the ½ mile ETJ which are considered developable.

Chapter 395 allows impact fees to be developed to cover projected 10-year needs. Based on population projections, Muenster can expect to have an approximate population of 2,355 in 10 years. Per the Texas Local Government Code, Title 2, Subtitle C, Chapter 42 “Extraterritorial Jurisdiction of Municipalities, the City’s ETJ can include the unincorporated area that is contiguous to and within ½ mile of the corporate boundaries of the City. As such, during future planning periods, the City should consider an ultimate planning area and possibly working with the surrounding Cities, Water Supply Corporations, and Special Utility Districts to expand the City’s CCN boundary to match the desired ultimate planning area. **Exhibit 1** depicts future land use constraints that should be considered by the City.

The Advisory Committee has expressed a desired ultimate density of approximately 3 persons per acre. Muenster’s current city limits (1,763 ac) and ETJ (4,005 ac) encompass an area of approximately 5,768 acres. Excluding the lake and immediate surrounding area (621 ac.), this would result in an approximate population of 15,441 once fully developed.

Population and Land Use Study

Existing Land Use and Demographics

In 2024, the City of Muenster partnered with GrantWorks, Inc. through a Texas Community Development Block Grant from the U.S. Department of Housing and Urban Development. GrantWorks worked with the advisory committee to determine the existing land use designations for areas within the ETJ. **Exhibit 2** shows the existing land use that will be used in the preparation of this CIP and impact fees. Existing service area calculations are inclusive of portions of the ETJ. United States Geological Survey (USGS) topographic maps, Texas Commission on Environmental Quality (TCEQ) water and wastewater CCN maps, school district, county, and municipal boundaries, existing zoning maps, county and regional transportation plans, were reviewed and taken into consideration.

Community demographics were obtained from the U.S. Census Bureau. These demographics have been updated with 2024 U.S. Census Bureau estimates. **Table 1** compares various Muenster demographics to those of surrounding communities and the State as a whole. From 2020 to 2024 there was normal minor fluctuations in the demographics. A majority of the people in the work force work in town, while those that commute are employed in Gainesville and the northwest DFW metroplex.

Table 1 – Demographic Comparisons –2024 US Census Estimates

Entity Census Year	Muenster 2024	Callisburg 2024	Gainesville 2024	Lindsay 2024	Saint Jo 2024	Valley View 2024	Cooke County 2024	Texas 2024
Population	1,536	321	17,394	1,045	881	737	41,668	29,145,505
Median Age	34.0	22.7	36.5	38.9	34.9	40.8	40.5	35.9
Age 65 & Older	15.20%	5.70%	16.60%	17.70%	14.40%	13.00%	18.90%	14.00%
Persons/ Household	2.56	2.05	2.49	2.31	2.16	2.15	2.32	2.31
Median Household Income	\$88,333	\$46,023	\$58,809	\$115,417	\$68,182	\$67,303	\$73,932	\$79,721
High School Grad or Higher	93.60%	79.90%	84.10%	93.70%	93.70%	90.50%	88.60%	86.70%
Bachelor's Degree or Higher	31.90%	13.80%	19.40%	33.80%	20.40%	16.80%	23.70%	35.20%

Muenster's current city limits (1,763 ac) and ETJ (4,005 ac) encompass an area of approximately 5,768 acres. **Table 2** presents a breakdown of the land use areas anticipated to see the most increased use and approximate densities (meters/acre).

Table 2 – Existing (2026) Level of Usage

Description	Residential	Commercial	Industrial	Institutional	Public/Semi Public	Agricultural	Vacant	Lake	Total
2026 Population	1,804	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,804
2026 Meters	713	88	12	19	N/A	N/A	N/A	N/A	832
2026 (Acres)	615	208	63	63	455	3,705	38	621	5,768
Density (Meters/Acre)	1.16	0.42	0.19	0.30	N/A	N/A	N/A	N/A	0.14
% Meters by Land Use	85.70%	10.58%	1.44%	2.28%	N/A	N/A	N/A	N/A	100.00%

Population Projection

The historical population levels for Muenster are shown in **Table 3**. According to the U.S. Census Bureau, Muenster experienced steady growth through the 1960's. The growth rate then stagnated through the 1980's and 90's, with only a slight uptick in the late 1990's. From 2000 to 2020, the growth rate was once again stagnant. However, since the end of COVID, Muenster has seen an uptick in its growth rate by an average increase of 2.70%. Assuming an annual 2.70% growth rate, the projected population in 2031 will be 2,061. By comparison, the TWDB 2021 Regional Water Plan projects the population of Muenster to be 1,564 in 2030 (**Table 4**). TWDB's assessment is based on the stagnating growth rate in the 2000-2020 year period and therefore projects an annual growth rate of 0.16%. The City's rising meter count supports the U.S. Census's growth projection. As such, a growth rate of 2.70% will be used to project Muenster's population for this CIP's 10-year planning period (2026 to 2036.) **Figure 1** depicts the historic growth and future population projections.

The Denton and Cooke County areas are rapidly growing in conjunction with the general expansion north of the Dallas/Fort Worth Metroplex (DFW). Pentex and Nortex are power and communication companies based in Muenster, which are growing in response to the steady population rise. Signs of increased growth are already apparent, with developers approaching the City regularly regarding various development opportunities. As such, these population projections should be reevaluated each year and updated as required. In addition, the predicted water, wastewater, roadway, and drainage system improvements and the resulting effect on impact fees should also be reviewed annually and updated accordingly.

Based on this information, along with guidance from the Advisory Committee, the future land use map (**Exhibit 3**) has been developed and will be used in the preparation of this CIP and impact fees. Additionally, the City identified properties that they "anticipate" will be developed within the next five years as well as properties that are prime for "future" development over the next six-to-ten years (**Exhibit 4**).

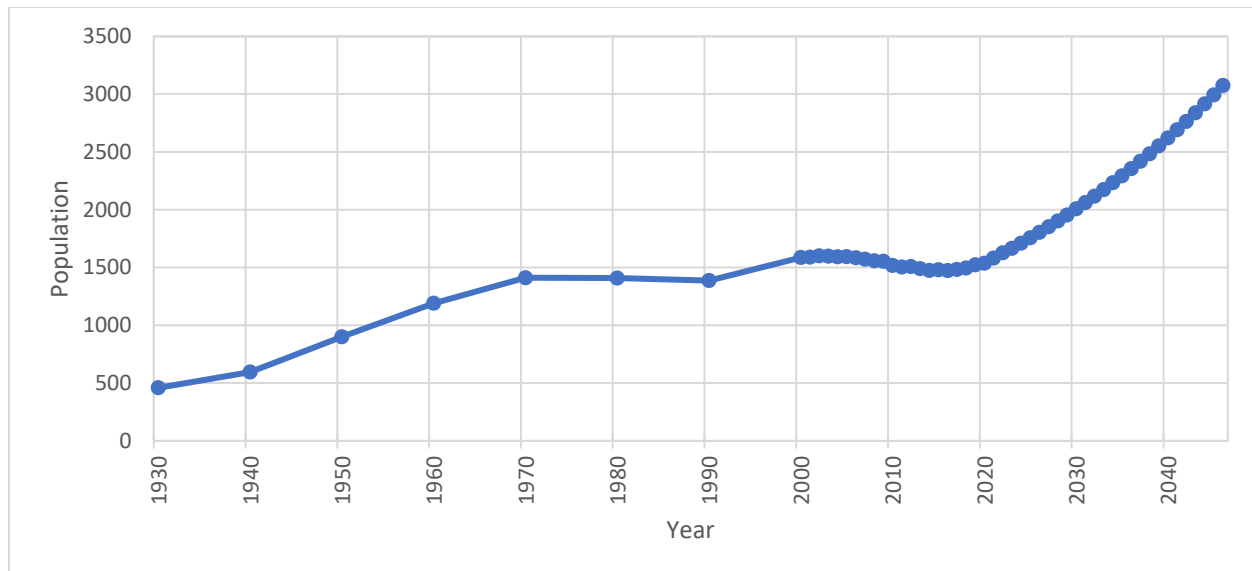
Table 3 – Historic Population Data

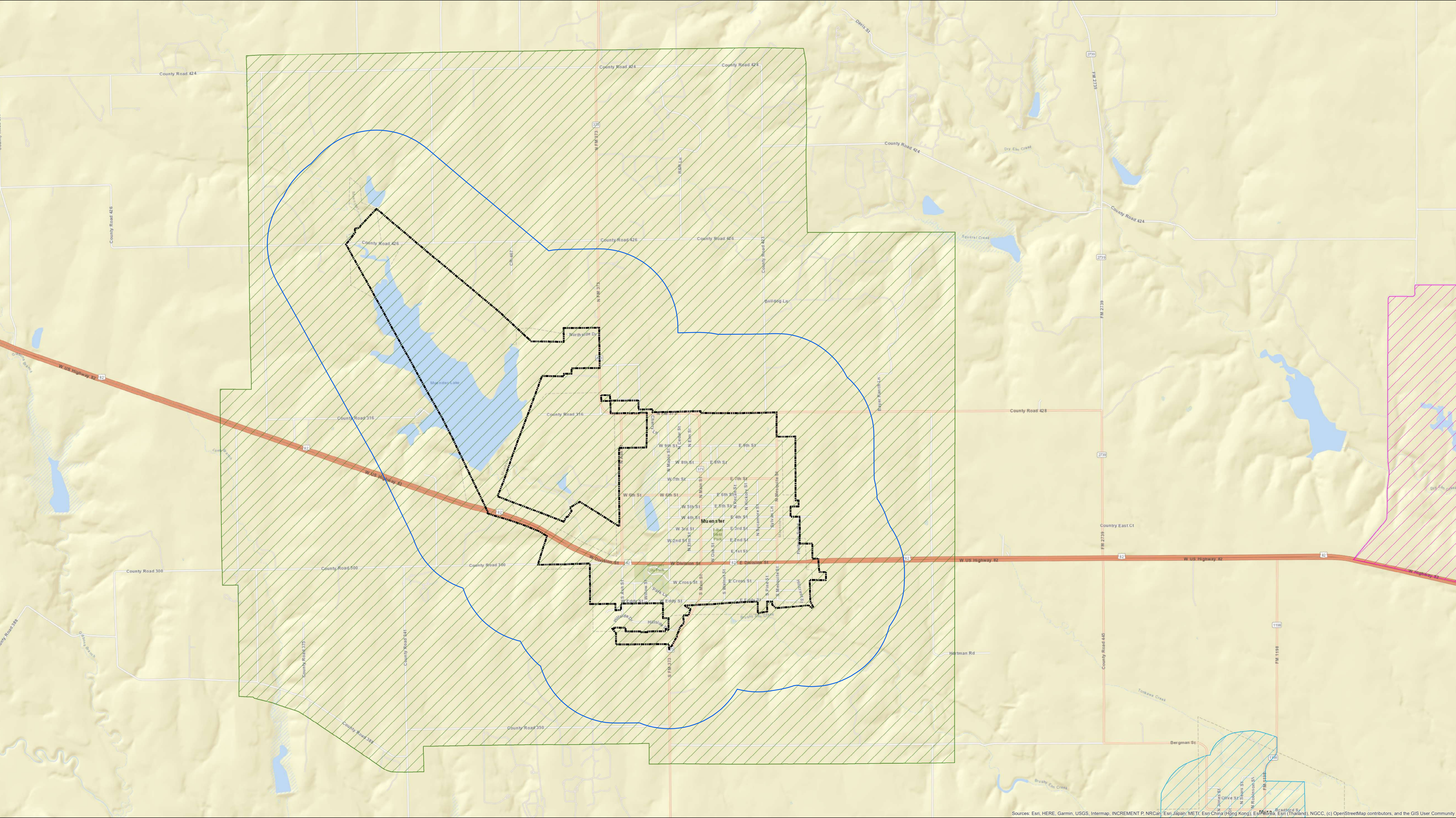
	1950	1960	1970	1980	1990	2000	2010	2020	2026
Historical	900	1,190	1,411	1,408	1,387	1,556	1,517	1,536	1,804

Table 4 – Population Projections

U.S. Census Trend	2031	2036	2046		
	2,061	2,355	3,075		
TWDB (2021 Regional Water Plan)	2030	2040	2050	2060	2070
	1,564	1,614	1,614	1,665	1,665

Figure 1 – Population Projection



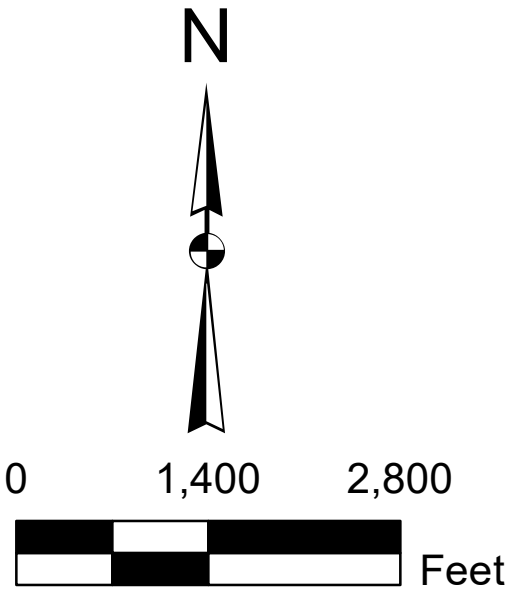


Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

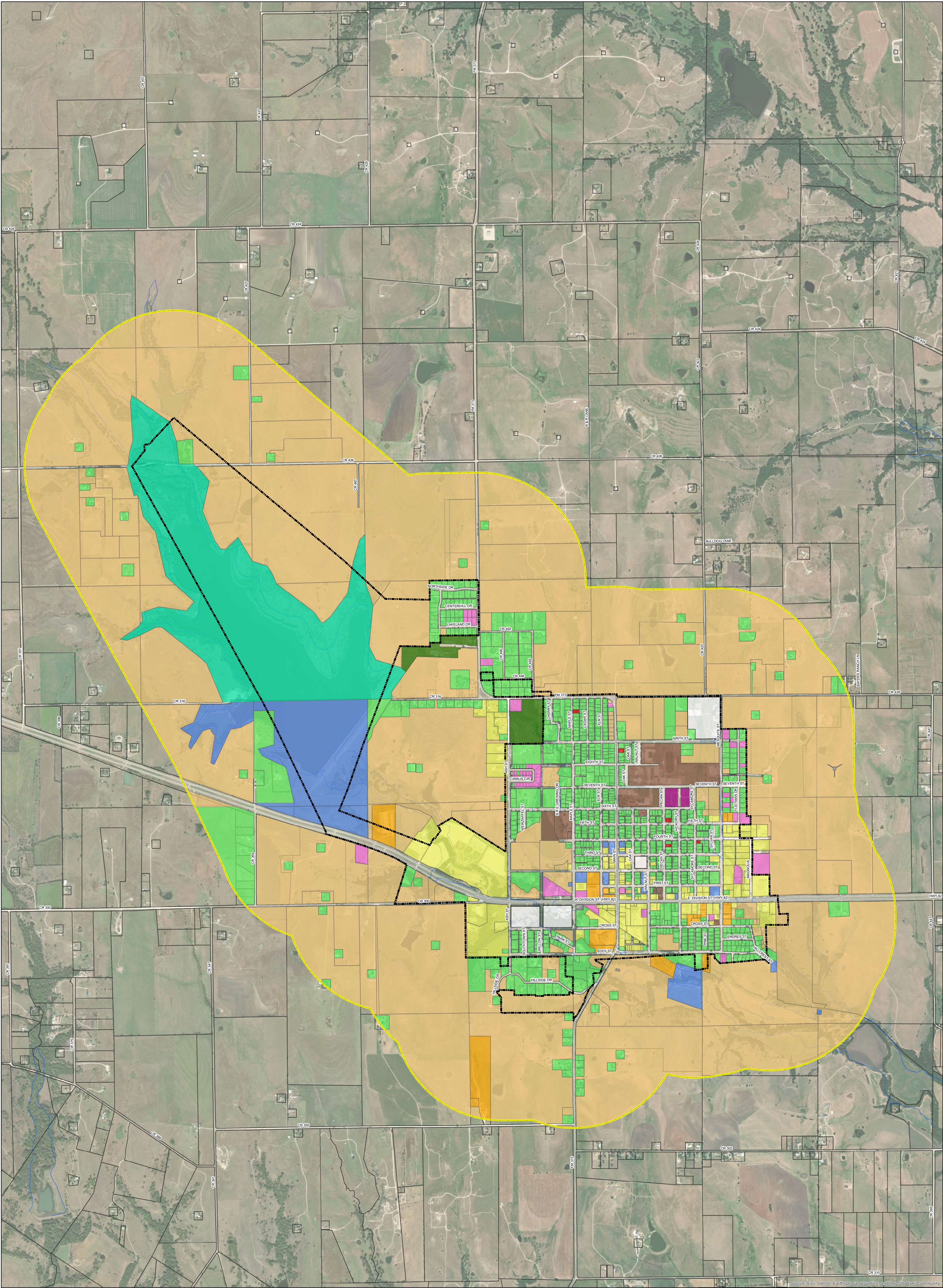
Legend

- CCN Boundary**

 - City of Muenster
 - City of Lindsay
 - Patterson Water Supply, LLC (Myra)
- Muenster ETJ
 - Muenster City Limits



Future Land Use Constraints		
2026 Capital Improvements Plan Muenster, Texas		
 Practical Infrastructure Solutions		Hayter Engineering, Inc. 4445 SE Loop 286 Paris TX 75460 www.haytereng.com TxEng F-315 TxSurv F-10028600
July 2026	PROJECT NO.:168006	EXHIBIT 1



Legend

Existing Land Use	Industrial	Cemetary	Muenster City Limits
Single-Family	AGP	Institutional	Muenster ETJ
Multi-Family	Agricultural	Utility	100-Year Floodplain
Commerical	Vacant	Water	
Public/Semi-Public	Recreational		

Existing Land Use	
2026 Capital Improvements Plan Muenster, Texas	
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EXHIBIT 2	

Street Study

Basis of Analysis and Standards

The characteristics of streets and roadways have a huge impact on the traffic flow and safety of its travelers. A roadway surface that is in poor condition will discourage use and redirect traffic to roadways of good condition, which might negatively affect the traffic flow through congestion. The width of a roadway will also influence its use by affecting the attraction of the various modes of transportation. For reasons such as these, this comprehensive plan includes an assessment of existing street conditions, leading to a plan of future street improvements.

A street system study was conducted by Hayter Engineering in 2025. That study included an existing conditions inventory analysis, and goals and objectives for the planning period.

This street system analysis was based on visually obtained on-site data collected during the inventory. City staff provided input regarding their observed traffic volumes and repair frequencies. The type of data collected included roadway surface material, condition, width, length, drainage, and apparent right-of-way width.

The Texas Department of Transportation publication, *Roadway Design Manual (November 2024): Urban Streets* establishes standards for arterial, collector, and residential streets. The State highways in Muenster are the City's arterial streets, with the city streets being either collector or local/residential streets. The minimum acceptable standard for residential areas is 10-foot wide travel lanes, or 20-foot wide for two lanes.

Street System Analysis

City streets can be classified into one of three broad functional groups; arterial, collector, or residential streets. General definitions for these street types are as follows:

Arterial: An arterial is a major street that serves to conduct traffic between highways and/or between major traffic generators such as the central business district. It is preferable that these be continuous across the City. Arterials are generally spaced from 1 to 3 miles apart. They bypass neighborhoods and are designed for traffic speeds from 35 mph and higher. In Muenster, the state-maintained highways constitute the arterials.

Collector: A collector street conducts less traffic than an arterial street but is still continuous through several residential districts. It connects these districts to arterials, major highways, or business districts. Collectors are generally spaced from 1/8 to 1/2 mile apart, and designed for speeds from 30 to 35 mph.

Residential: A residential street can also be termed "local" or "minor". The primary purpose of these streets is to carry traffic within the residential areas and to provide access to the abutting properties. They will generally connect the neighborhood to a collector street and carry relatively low traffic volumes, usually for trips under 1/2 mile in length. The traffic on these streets includes passenger vehicles, school buses, local destination commercial trucks, emergency vehicles, and waste collection vehicles.

During the street system analysis, each city street was driven, roadway widths were measured at several locations, and general observations were documented. Based on the data collected, each block of each street was assigned one of four surface condition classifications: Very Good, Good, Fair, and Poor. General definitions for each surface condition are as follows.

1. Very Good (A): Includes asphalt and concrete streets which are like-new, have curb and gutter or a defined ditch and may contain a well-defined shoulder on either side of the street.
2. Good (B): Includes asphalt, concrete, and chip seal streets which are in good condition and have no noticeable surface deterioration. These streets are wide enough to allow for two-way traffic. These streets have curb and gutter or defined ditches that are functional but may show signs of siltation.
3. Fair (C): Includes asphalt, rock, and dirt streets with minimal to no potholes, minor rutting; varying widths; grass encroachment; and/or surface washout. These streets may not have proper functional ditches. If curb and gutter is present, they are overgrown and/or silted in and no longer function as originally intended.
4. Poor (D): Includes asphalt, rock, and dirt streets with numerous potholes; significant surface washout; edge of pavement failure; rutting; ponding/poor drainage; and/or varying widths. In some cases, these streets are not wide enough to allow the passing of two-way traffic. These streets typically do not have proper functional ditches or curb and gutter. In general, the conditions of these streets are not, or are soon to not be conducive for safe driving conditions.

Street Inventory

An inventory of the pavement condition, material, curb and gutter, pavement width, and right-of-way width of each City street was conducted. The results of this inventory survey are presented in **Exhibit 5** and in **Table 5**.

The City's major arterial streets are U. S. Highway 82, Farm to Market (FM) 373 (Main Street), and County Road 428. The City's major collector streets are Ash Street, Eddy Street, Mesquite Street, and Seventh Street. This study does not consider the improvement needs of the State and County-maintained highways and roads. TxDOT traffic counts are available for U.S. Highway 82 and FM 373 as of 2024 and have annual average daily count of approximately 10,400 and 1,600 (respectively) in Muenster.

Table 5 – Street Inventory/Street System Study

Street Name	From	To	Length (ft)	Street Width (ft)	ROW Width (ft)	Curb/Gutter Rating	Street Material	Surface Condition	Priority Number
1 st St	N Mesquite St	N Sycamore St	648	50	80	Fair	Asphalt	C	3
1 st St	N Sycamore St	N Hickory St	379	50	80	Fair	Asphalt	C	3
1 st St	N Hickory St	N Pecan St	375	50	80	Poor	Asphalt	C	3
1 st St	N Pecan St	Walnut St	388	50	80	Fair	Asphalt	C	3
1 st St	Walnut St	N Oak St	375	50	80	Fair	Asphalt	C	3
1 st St	N Oak St	N Main St	394	46	80	Poor	Asphalt	C	3
1 st St	N Main St	Elm St	399	50	80	Fair	Asphalt	C	3
2 nd St	N Maple St	N Elm St	678	50	80	Fair	Asphalt	B	N/A
2 nd St	N Elm St	N Main St	397	50	80	Fair	Asphalt	D	2
2 nd St	N Main St	N Oak St	392	45	80	Fair	Concrete	B	N/A
2 nd St	N Oak St	Walnut St	371	50	80	Fair	Asphalt	D	2
2 nd St	Walnut St	N Pecan St	385	50	80	Fair	Asphalt	B	N/A
2 nd St	N Pecan St	N Hickory St	379	46	80	Fair	Asphalt	B	N/A
2 nd St	N Hickory St	N Sycamore St	378	50	80	Fair	Asphalt	C	3
2 nd St	N Sycamore St	N Mesquite St	650	50	80	Fair	Asphalt	C	3
3 rd St	N Mesquite St	N Sycamore St	644	50	80	Fair	Asphalt	B	N/A
3 rd St	N Sycamore St	N Hickory St	379	50	80	Fair	Asphalt	B	N/A
3 rd St	N Hickory St	N Pecan St	374	46	80	Fair	Asphalt	B	N/A
3 rd St	N Pecan St	N Walnut St	382	44	80	Fair	Asphalt	C	3
3 rd St	N Walnut St	N Oak St	375	42	80	Fair	Asphalt	C	3
3 rd St	N Oak St	N Main St	395	42	80	Poor	Asphalt	D	2
3 rd St	N Main St	N Elm St	388	41	80	Poor	Asphalt	C	3
3 rd St	N Elm St	N Maple St	683	40	50	Fair	Asphalt	C	3
4 th St	N Maple St	N Cedar	366	44	80	Fair	Asphalt	C	3
4 th St	N Cedar St	N Elm St	320	44	80	Fair	Asphalt	C	3
4 th St	N Elm St	N Main St	386	50	80	Fair	Asphalt	D	2
4 th St	N Main St	N Oak St	395	50	80	Fair	Asphalt	D	2
4 th St	N Oak St	N Walnut St	372	45	80	Fair	Asphalt	C	3

Street Name	From	To	Length (ft)	Street Width (ft)	ROW Width (ft)	Curb/Gutter Rating	Street Material	Surface Condition	Priority Number
4 th St	N Walnut St	N Pecan St	387	45	80	Fair	Asphalt	C	3
4 th St	N Pecan St	N Hickory St	370	50	80	Fair	Asphalt	C	3
4 th St	N Hickory St	N Sycamore St	384	50	80	Fair	Asphalt	C	3
4 th St	N Sycamore St	N Mesquite St	639	50	80	Fair	Asphalt	C	3
4 th St	N Mesquite St	Magnolia St	727	43	60	Good	Gravel	D	2
4 th St	Magnolia St	Dead End	424	39	60	Good	Gravel	D	2
5 th St	Fleitman Dr	N Mesquite St	435	40	60	N/A	Gravel	D	2
5 th St	N Mesquite St	N Sycamore St	641	50	80	Fair	Asphalt	B	N/A
5 th St	N Sycamore St	N Hickory St	381	50	80	Fair	Asphalt	C	3
5 th St	N Hickory St	N Pecan St	373	50	80	Fair	Asphalt	C	3
5 th St	N Pecan St	N Walnut St	384	50	80	Poor	Asphalt	D	2
5 th St	N Walnut St	N Oak St	377	47	80	Good	Asphalt	C	3
5 th St	N Oak St	N Main St	395	44	80	Fair	Asphalt	C	3
5 th St	N Main St	N Elm St	385	40	80	Fair	Asphalt	D	2
5 th St	N Elm St	N Cedar St	321	28	50	Fair	Asphalt	C	3
5 th St	N Cedar St	N Maple St	364	28	50	Fair	Asphalt	C	3
6 th St	N Ash St	Weinzapfel St	386	50	80	Fair	Asphalt	C	3
6 th St	Weinzapfel St	NRE Grewing Dr	855	25	80	N/A	Asphalt	C	3
6 th St	NRE Grewing Dr	N Maple St	343	50	80	Fair	Asphalt	C	3
6 th St	N Maple St	N Cedar St	357	50	80	Poor	Asphalt	C	3
6 th St	N Cedar St	N Elm St	320	50	80	Fair	Asphalt	C	3
6 th St	N Elm St	N Main St	385	50	80	Fair	Asphalt	C	3
6 th St	N Main St	N Oak St	395	50	80	Fair	Asphalt	C	1
6 th St	N Oak St	N Walnut St	373	50	80	Good	Asphalt	C	1
6 th St	N Walnut St	N Pecan St	390	50	80	Fair	Asphalt	C	1
6 th St	N Pecan St	N Hickory St	372	50	80	Fair	Asphalt	C	1
6 th St	N Hickory St	N Sycamore St	383	50	80	Fair	Asphalt	C	1
7 th St	Dead End	Fleitman Dr	205	45	80	Good	Concrete	B	N/A
7 th St	Fleitman Dr	Mesquite St	426	45	80	Good	Concrete	B	N/A

Street Name	From	To	Length (ft)	Street Width (ft)	ROW Width (ft)	Curb/Gutter Rating	Street Material	Surface Condition	Priority Number
7 th St	Mesquite St	Sycamore St	655	40	80	N/A	Asphalt	A	N/A
7 th St	N Sycamore St	N Hickory St	367	25	80	Fair	Asphalt	C	1
7 th St	N Hickory St	N Pecan St	386	40	80	Fair	Asphalt	C	1
7 th St	N Pecan St	N Oak St	913	40	80	Fair	Asphalt	C	1
7 th St	N Oak St	N Main St	240	54	80	Fair	Asphalt	C	1
7 th St	N Main St	N Elm St	383	45	80	Fair	Asphalt	C	3
7 th St	N Elm St	N Maple St	692	40	80	Fair	Asphalt	C	3
7 th St	N Maple St	NRE Grewing Dr	334	25	80	Fair	Gravel	D	2
8 th St	N Maple St	N Cedar St	365	50	80	Fair	Asphalt	C	3
8 th St	N Cedar St	N Elm St	347	50	80	Fair	Asphalt	C	3
8 th St	N Elm St	N Main St	359	50	80	Fair	Asphalt	D	2
8 th St	N Main St	N Oak St	349	50	80	Fair	Asphalt	D	2
8 th St	N Oak St	N Walnut St	206	50	80	Fair	Asphalt/Concrete	C/B	3
9 th St	Fleitman Dr	N Mesquite St	408	42	60	Good	Asphalt	B	N/A
9 th St	N Mesquite St	N Walnut St	2010	26	80	N/A	Asphalt	C	1
9 th St	N Walnut St	N Oak St	203	38	80	Fair	Asphalt	C	2
9 th St	N Oak St	N Main St	356	38	80	Fair	Asphalt	D	2
9 th St	N Main St	N Elm St	356	45	80	Fair	Asphalt	C	3
9 th St	N Elm St	N Cedar St	346	45	80	Fair	Asphalt	C	3
9 th St	N Cedar St	N Maple St	366	45	80	Fair	Asphalt	C	3
9 th St	N Maple St	Cherry Ln	368	45	80	Fair	Asphalt	D	2
Co Rd 428	N Main St	N Mesquite St	2608	25	60	N/A	Asphalt	C	3
Cross St	S Ash St	Southtown Dr	408	40	80	Fair	Asphalt	B	N/A
Cross St	Southtown Dr	S Willow St	375	40	80	Fair	Asphalt	B	N/A
Cross St	Maple St	S Main St	1067	26	80	N/A	Asphalt	D	2
Cross St	S Walnut St	S Hickory St	766	42	80	Fair	Asphalt	B	N/A
Cross St	S Hickory St	S Sycamore St	360	50	80	Poor	Asphalt	C	3
Cross St	S Sycamore St	S Pine St	315	50	80	Fair	Asphalt	C	3
Cross St	S Pine St	Mesquite St	353	50	80	Fair	Asphalt	C	3

Street Name	From	To	Length (ft)	Street Width (ft)	ROW Width (ft)	Curb/Gutter Rating	Street Material	Surface Condition	Priority Number
Cross St	Mesquite St	Hillcrest St	692	40	50	Fair	Asphalt	C	3
Endres St	S Mesquite St	Hillcrest St	767	40	60	Fair	Asphalt	C	3
W Eddy St	S Ash St	Southtown Dr	408	38	80	Poor	Asphalt	D	2
W Eddy St	Southtown Dr	S Willow St	379	32	80	Fair	Asphalt	D	2
W Eddy St	S Willow St	Park St	779	20	80	N/A	Asphalt	D	2
W Eddy St	Park St	S Main St	995	20	80	N/A	Asphalt	D	2
E Eddy St	S Main St	S Walnut St	857	34	80	N/A	Asphalt	C	2
E Eddy St	S Walnut St	S Hickory St	771	30	80	N/A	Asphalt	D	2
E Eddy St	S Hickory St	S Sycamore St	356	46	80	Poor	Asphalt	D	2
E Eddy St	S Sycamore St	S Pine St	319	46	80	Fair	Asphalt	C	3
E Eddy St	S Pine St	S Mesquite St	344	46	80	Fair	Asphalt	C	3
E Eddy St	S Mesquite St	Hillcrest St	831	40	60	Fair	Asphalt	C	3
Centerhill Dr	Lakecrest Dr	FM 373	956	36	60	Good	Asphalt	B	N/A
Lakecrest Dr	Northside Dr	Centerhill Dr	460	40	60	Good	Asphalt	B	N/A
Lakecrest Dr	Centerhill Dr	Lakeland Dr	456	36	60	Good	Asphalt	B	N/A
Lakecrest Dr	Lakeland Dr	Dead End	413	36	60	Good	Asphalt	B	N/A
Northside Dr	Fm 373	Lakecrest Dr.	930	40	60	Good	Asphalt	B	N/A
Lakeland Dr	Fm 373	Lakecrest Dr.	965	36	60	Good	Asphalt	B	N/A
Ash St	FM 373	Cirrus Cir	1752	26	80	Poor	Asphalt	D	1
Ash St	Cirrus Cir	6 th St	978	26	80	Poor	Asphalt	D	1
Ash St	6 th St	Hwy 82	2227	26	80	Fair	Asphalt	D	1
Ash St	Hwy 82	Cross St	623	26	80	N/A	Asphalt	D	1
Ash St	Cross St	W Eddy St	610	36	80	Fair	Asphalt	D	1
Cherry Ln	FM 373	9 th St	1218	38	65	Fair	Asphalt	D	2
NRE Grewing Dr	7 th St	W 6 th St	513	26	50	Poor	Rock	D	2
Southtown Dr	Cross St	W Eddy St	604	40	60	Good	Asphalt	C	3
S Willow St	Cross St	W Eddy St	604	50	80	Fair	Asphalt	D	2
Park St	Willow St	W Eddy St	1152	40	50	Fair	Asphalt	C	3
N Maple St	FM 373	9 th St	1096	50	80	Fair	Asphalt	C	3

Street Name	From	To	Length (ft)	Street Width (ft)	ROW Width (ft)	Curb/Gutter Rating	Street Material	Surface Condition	Priority Number
N Maple St	9 th St	8 th St	560	50	80	Fair	Asphalt	D	2
N Maple St	8 th St	7 th St	564	50	80	Poor	Asphalt	C	3
N Maple St	7 th St	6 th St	527	50	80	Poor	Asphalt	C	3
N Maple St	6 th St	5 th St	397	50	80	Fair	Asphalt	C	3
N Maple St	5 th St	4 th St	362	50	80	Fair	Asphalt	C	3
N Maple St	4 th St	3 rd St	379	50	80	Poor	Asphalt	C	3
N Maple St	3 rd St	2 nd St	385	46	80	Fair	Asphalt	C	3
N Maple St	2 nd St	Hwy 82	742	40	80	Fair	Asphalt	C	3
N Maple St	Hwy 82	W Cross St	564	52	80	Fair	Asphalt	C	3
N Cedar St	FM 373	9 th St	1099	40	60	Poor	Asphalt	D	2
N Cedar St	9 th St	8 th St	558	40	60	Fair	Asphalt	B	N/A
N Cedar St	6 th St	5 th St	396	28	60	Fair	Asphalt	C	3
N Cedar St	5 th St	4 th St	361	28	60	Fair	Asphalt	C	3
N Elm St	FM 373	9 th St	1096	40	60	Fair	Asphalt	D	2
N Elm St	9 th St	8 th St	559	30	80	Poor	Asphalt	D	2
N Elm St	7 th St	6 th St	523	44	80	Fair	Asphalt	C	3
N Elm St	6 th St	5 th St	391	44	80	Fair	Asphalt	C	3
N Elm St	5 th St	4 th St	370	50	80	Fair	Asphalt	C	3
N Elm St	4 th St	3 rd St	377	46	80	Fair	Asphalt	D	2
N Elm St	3 rd St	2 nd St	382	42	80	Poor	Asphalt	C	3
N Elm St	2 nd St	1 st St	382	42	80	Fair	Asphalt	C	3
N Oak St	9 th St	8 th St	563	28	40	Fair	Asphalt	C	3
N Oak St	8 th St	7 th St	547	62	80	Fair	Asphalt	C	1
N Oak St	6 th St	5 th St	376	48	80	Fair	Asphalt	C	3
N Oak St	5 th St	4 th St	384	48	80	Fair	Asphalt	C	3
N Oak St	4 th St	3 rd St	365	48	80	Fair	Asphalt	C	3
N Oak St	3 rd St	2 nd St	401	48	80	Fair	Asphalt	D	2
N Oak St	2 nd St	1 st St	369	48	80	Fair	Asphalt	C	3
N Oak St	1 st St	Hwy 82	358	48	80	Fair	Asphalt	C	3

Street Name	From	To	Length (ft)	Street Width (ft)	ROW Width (ft)	Curb/Gutter Rating	Street Material	Surface Condition	Priority Number
N Walnut St	9 th St	8 th St	565	40	80	Good	Concrete	B	N/A
N Walnut St	6 th St	5 th St	376	50	80	Fair	Asphalt	C	3
N Walnut St	5 th St	4 th St	385	50	80	Fair	Asphalt	C	3
N Walnut St	4 th St	3 rd St	382	50	80	Fair	Asphalt	C	3
N Walnut St	3 rd St	2 nd St	390	45	80	Poor	Asphalt	D	2
N Walnut St	2 nd St	1 st St	369	45	80	Fair	Asphalt	C	3
N Walnut St	1 st St	Hwy 82	354	45	80	Fair	Asphalt	C	3
N Walnut St	Hwy 82	E Cross St	586	45	80	Fair	Asphalt	C	3
N Walnut St	E Cross St	E Eddy St	649	45	80	Fair	Asphalt	C	3
N Pecan St	7 th St	6 th St	526	50	80	Fair	Asphalt	D	2
N Pecan St	6 th St	5 th St	379	46	80	Fair	Asphalt	D	2
N Pecan St	5 th St	4 th St	387	46	80	Fair	Asphalt	D	2
N Pecan St	4 th St	3 rd St	380	46	80	Fair	Asphalt	D	2
N Pecan St	3 rd St	2 nd St	393	43	80	Fair	Asphalt	D	2
N Pecan St	2 nd St	1 st St	369	50	80	Poor	Asphalt	D	2
N Pecan St	1 st St	Hwy 82	350	50	80	Fair	Asphalt	D	2
N Hickory St	6 th St	5 th St	380	46	80	Poor	Asphalt	C	3
N Hickory St	5 th St	4 th St	386	46	80	Fair	Asphalt	C	3
N Hickory St	4 th St	3 rd St	378	46	80	Poor	Asphalt	C	3
N Hickory St	3 rd St	2 nd St	386	46	80	Poor	Asphalt	C	3
N Hickory St	2 nd St	1 st St	376	50	80	Fair	Asphalt	C	3
N Hickory St	1 st St	Hwy 82	351	50	80	Poor	Asphalt	C	3
S Hickory St	Hwy 82	E Cross St	592	50	80	Poor	Asphalt	D	2
S Hickory St	E Cross St	E Eddy St	622	44	80	Fair	Asphalt	D	2
N Sycamore St	7 th St	6 th St	526	44	80	Good	Asphalt	C	2
N Sycamore St	6 th St	5 th St	381	44	80	Fair	Asphalt	C	3
N Sycamore St	5 th St	4 th St	383	44	80	Fair	Asphalt	C	3
N Sycamore St	4 th St	3 rd St	380	44	80	Poor	Asphalt	C	3
N Sycamore St	3 rd St	2 nd St	379	44	80	Fair	Asphalt	C	3

Street Name	From	To	Length (ft)	Street Width (ft)	ROW Width (ft)	Curb/Gutter Rating	Street Material	Surface Condition	Priority Number
N Sycamore St	2 nd St	1 st St	379	44	80	Poor	Asphalt	C	3
N Sycamore St	1 st St	Hwy 82	354	44	80	Fair	Asphalt	C	3
S Sycamore St	E Cross St	E Eddy St	617	28	80	Fair	Asphalt	C	3
S Pine St	Dead End	E Cross St	288	32	50	Fair	Asphalt	C	3
S Pine St	E Cross St	E Eddy St	617	32	50	Poor	Asphalt	C	3
N Mesquite St	CR 428	9 th St	1099	40	80	Good	Concrete	A	N/A
N Mesquite St	9 th St	7 th St	1127	40	80	Good	Concrete	A	N/A
N Mesquite St	7 th St	5 th St	906	40	80	Good	Concrete	A	N/A
N Mesquite St	5 th St	4 th St	380	40	80	Good	Concrete	A	N/A
N Mesquite St	4 th St	3 rd St	379	40	80	Good	Concrete	A	N/A
N Mesquite St	3 rd St	2 nd St	375	40	80	Good	Concrete	A	N/A
N Mesquite St	2 nd St	1 st St	388	44	80	Good	Concrete	A	N/A
N Mesquite St	1 st St	Hwy 82	348	44	80	Good	Concrete	A	N/A
Mesquite St	Hwy 82	E Cross St	607	44	80	Fair	Asphalt	C	3
Mesquite St	E Cross St	Endres St	320	44	80	Fair	Asphalt	C	3
Mesquite St	Endres St	E Eddy St	301	44	80	Fair	Asphalt	C	3
Hillcrest St	E Cross St	Endres St	327	40	50	Fair	Asphalt	C	3
Hillcrest St	Endres St	E Eddy St	327	40	50	Fair	Asphalt	C	3
Hillcrest St	E Eddy St	Dead End	420	40	50	Fair	Asphalt	C	3
Magnolia St	4 th St	Hwy 82	1470	38	75	N/A	Gravel	D	2
Weinzapfel St	6 th St	Dead End	441	40	60	Good	Asphalt	C	3
Cirrus Cir	Ash St	Ash St	1459	40	50	Good	Asphalt	A	N/A
Fleitman Dr	5 th St	7 th St	273	42	60	Good	Gravel	D	2
Fleitman Dr	5 th St	7 th St	650	42	60	Good	Concrete	B	N/A
Fleitman Dr	7 th St	9 th St	1116	42	60	Good	Asphalt	B	N/A
Fleitman Dr	9 th St	Dead End	254	42	60	Good	Asphalt	B	N/A

Condition Analysis

The city streets vary in width from 20-feet to 62-feet and right-of-way widths vary from 40-feet to 100-feet. City records were used for right-of-way widths on city streets, and supported by observation of indicators such as fence lines, power poles, and utility meters.

Asphalt surfaces make up approximately 89 percent of all city streets, while concrete streets make up 7 percent, and gravel roads make up the final 4 percent. The surface conditions of inventoried city streets varied from very good to poor. Most streets were classified as “fair” condition. The approximate breakdown of street conditions is:

Very Good	7 percent
Good	13 percent
Fair	52 percent
Poor	28 percent

Soil Conditions

Soils in Muenster range from loam to clay. Loamy soils are generally conducive for construction projects, resulting in good performance and low maintenance. This can be attributed to the fact that this type of soil is typically moderately well to well-drained, with minimal shrink-swell potential. Clay soils, on the other hand, tend to be on the opposite end of that spectrum, resulting in poor performance and high maintenance without soil reclamation, special design considerations and expensive installation procedures. This can be attributed to the fact that clay soils have a high shrink-swell potential, so when dry, they shrink in volume and when wet can expand dramatically. In addition, wet clays lose their cohesive strength and cannot support the same loads as when dry.

Methods to combat the shrink-swell of clay soils include curb and gutter and soil stabilizers. The cost of curb and gutter streets substantially exceeds that of streets with parallel roadside ditches. However, it is an effective method to help prevent runoff from seeping beneath the pavement as is commonplace with parallel roadside ditches. Lime or concrete stabilization of the soils beneath the street can be somewhat effective; however, if the roadside ditches are deeper than the stabilization, there can be shrink-swell below the stabilization limits. Concrete streets are less prone to movement than hot mix streets, but generally have associated increased construction and maintenance costs (difficult to repair utilities under concrete streets). On streets without extensive transverse utilities, it may be possible to stabilize the moisture condition underneath the street with a vertical moisture barrier along the edges. Geotextile and soil stabilization technology is improving constantly and in later years of the planning period, other alternatives may become available.

Due to the varying soil conditions throughout the City, it is highly recommended that a geotechnical investigation is performed prior to any roadway improvement project. This investigation will provide roadway design recommendations based on the soil conditions. In addition to design recommendations, the geotechnical investigation should provide the City with enough information to make an informed decision regarding soil stabilization methods.

List and Ranking of Problems

The City has been proactive in constructing and maintaining collector and residential roads. However, there are road improvements that are required and should take precedence over others. Ranked by order of importance, they are as follows:

1. Streets that serve as collectors for existing and anticipated developments
2. Streets that are around schools
3. Gravel streets
4. HMAC Streets that are rated as “poor” (D)
5. Streets around public facilities (e.g. parks, hospital, police department, fire department, library)
6. Select HMAC streets rated as “fair” (C) that are frequently traveled and have damaged or no curb and gutter.
7. All other HMAC Streets rated as “fair” (C).

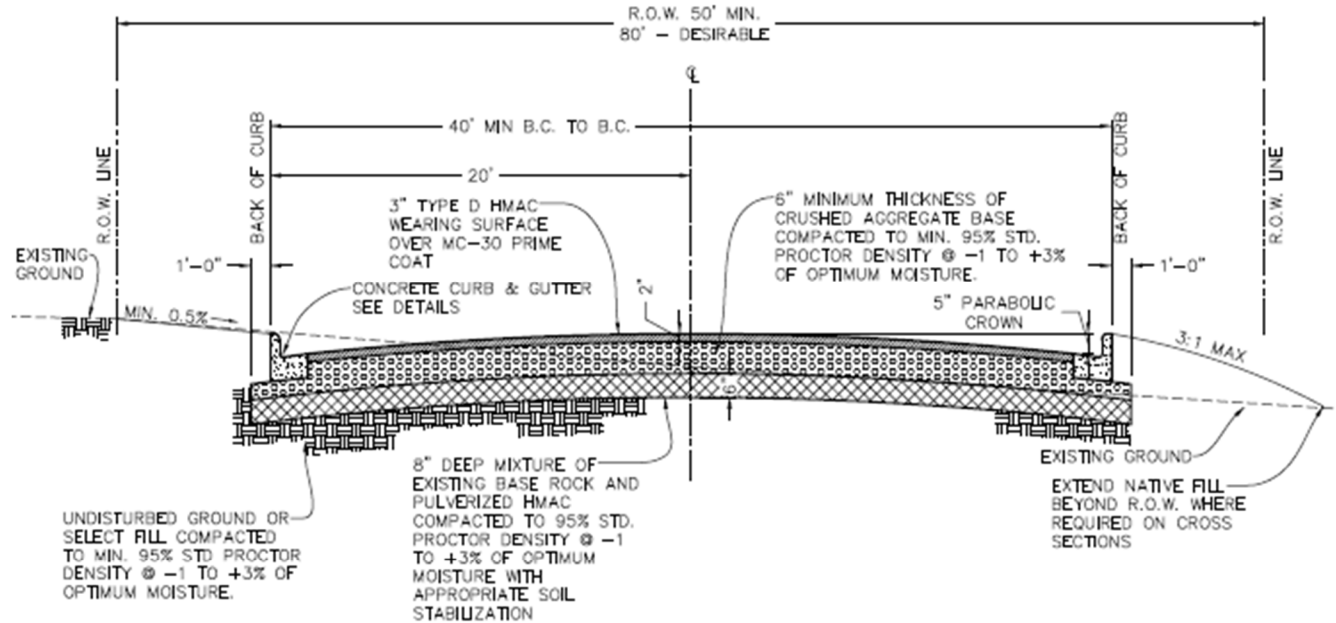
Adequacy of the System and Recommendations

Street conditions in Muenster are better than many cities of similar size, mainly due to proactive maintenance and design practices. Considering the growth projections in the population study, the State-maintained highways in the City will continue as arterials. Collector streets will need to be improved as development continues. Developers of new subdivisions should provide residential streets and for larger developments collector streets. The City should work towards adding an asphaltic surface to all gravel street sections, and to maintain the existing asphaltic surfaces. Newly paved streets and reconstructed streets, should be constructed to the minimum street standards shown in the street cross sections on subsequent pages. Street design may vary from the minimum standards if supported by a geotechnical report of the site.

Any residential or collector street replaced in the City limits should be constructed at a minimum of 40 feet back-of-curb to back-of-curb. Any existing street wider than 40 feet within the City limits shall be constructed to the existing width when replaced.

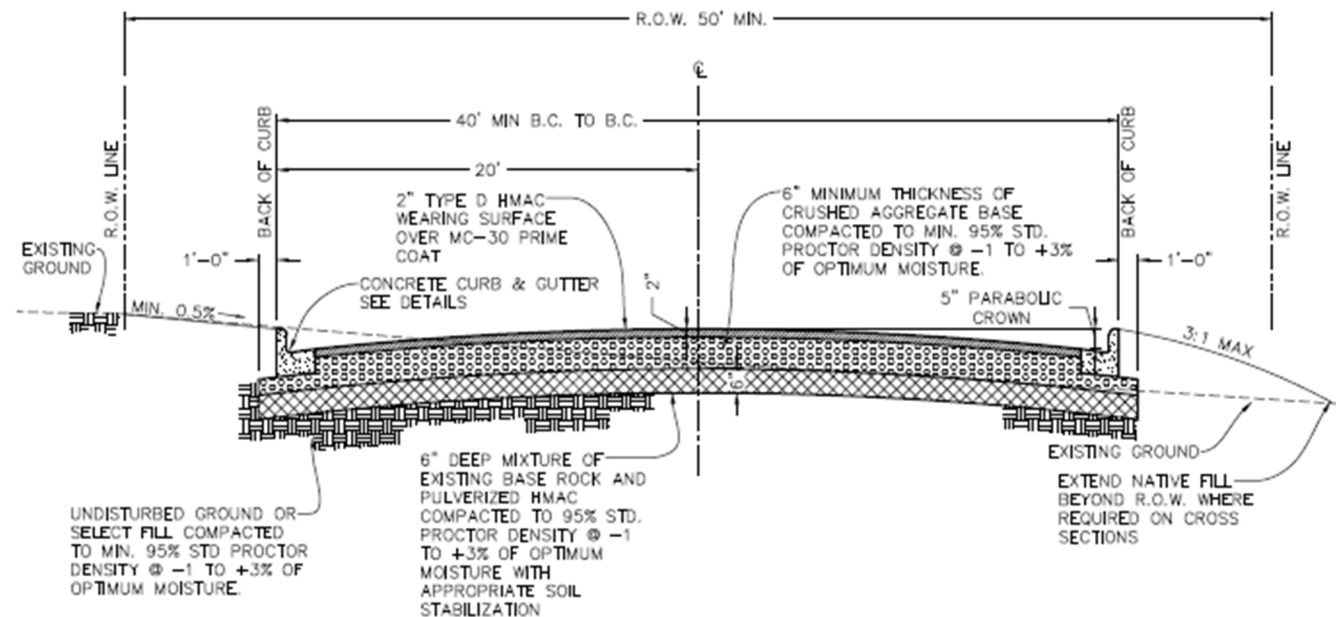
Where curb and gutter is present on a reconstructed street, it shall be replaced in kind regardless of condition to a six inch curb which positively drains to outlet channels. Curb and gutter is required on all new streets and any reconstructed street. Curb inlets and storm drains may be required to keep runoff below the top of curb.

Recommended roadway standards are provided on the next page. It is recommended that the Code of Ordinances be updated to reflect these standards at the City’s earliest convenience.



ASPHALT COLLECTOR STREET SECTION WITH CURB & GUTTER

SCALE: N.T.S.

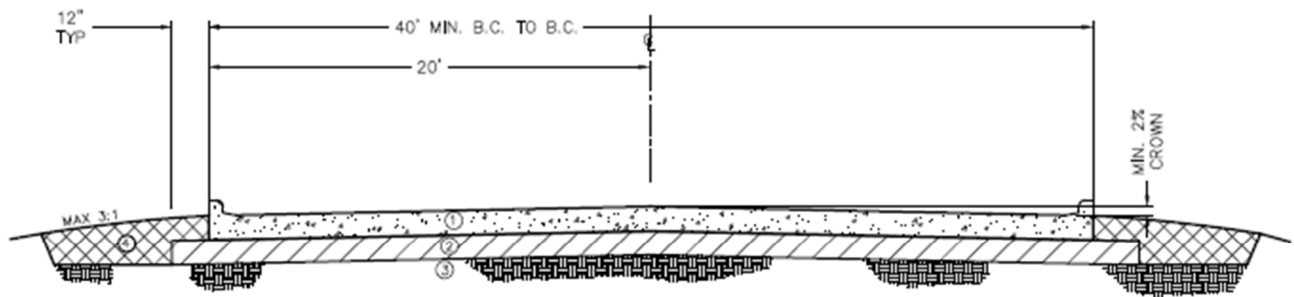


ASPHALT RESIDENTIAL STREET SECTION WITH CURB & GUTTER

SCALE: N.T.S.

NOTES

1. PRIOR TO INITIATING CUT/FILL OPERATIONS, GRASS-OFF MINIMUM 6" DEEP AREA STREET WIDTH +2' MINIMUM.
2. STRIPPED OVERBURDEN MAY BE USED IN FILL SECTIONS OUTSIDE OF CURB & GUTTER SECTION.
3. SEE "CURB AND GUTTER SECTION" STANDARD FOR THICKNESS OF BASE UNDER CURB.
4. THE RE-COMPACTED EXISTING MATERIAL AND THE COMPACTED CRUSHED BASE SHALL BOTH BE PROOF-ROLLED AFTER SUCCESSFUL DENSITY TESTING. THE PROOF ROLL SHALL BE DONE WITH A FULLY LOADED DUMP TRUCK OR WATER TRUCK WITH A SINGLE REAR AXLE. ANY PUMPING OR RUTTING AREAS SHALL BE REMOVED, RECOMPACTED, AND TESTED AGAIN UNTIL NO MORE RUTTING OR PUMPING OCCURS.

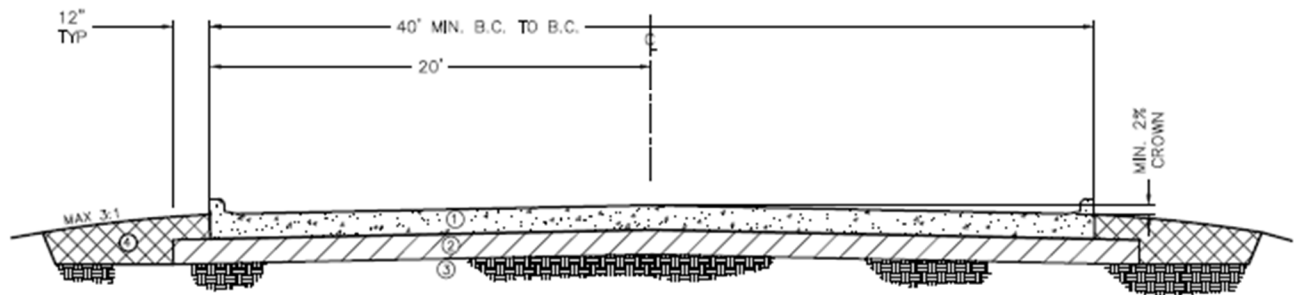


- ① 8" CLASS "A" CONCRETE
- ② PREPARED BASE
- ③ MIN. 6" UNDISTURBED SUBGRADE OR SELECT FILL AS REQUIRED COMPACTED IN MAX 8" LOOSE LIFTS TO MINIMUM 95% STD. PROCTOR DENSITY AT OPTIMUM MOISTURE AT -1 TO +3% OF OPTIMUM MOISTURE
- ④ NATIVE BACKFILL COMPACTED TO MINIMUM 90% STD. PROCTOR DENSITY AT OPTIMUM MOISTURE UP TO + 2% TOPPED W/ MIN. 2" TOPSOIL. REGRASS PER TECH. SPECS.

CONCRETE COLLECTOR STREET SECTION

WITH CURB & GUTTER

SCALE: N.T.S.



- ① 6" CLASS "A" CONCRETE
- ② PREPARED BASE
- ③ MIN. 6" UNDISTURBED SUBGRADE OR SELECT FILL AS REQUIRED COMPACTED IN MAX 8" LOOSE LIFTS TO MINIMUM 95% STD. PROCTOR DENSITY AT OPTIMUM MOISTURE AT -1 TO +3% OF OPTIMUM MOISTURE
- ④ NATIVE BACKFILL COMPACTED TO MINIMUM 90% STD. PROCTOR DENSITY AT OPTIMUM MOISTURE UP TO + 2% TOPPED W/ MIN. 2" TOPSOIL. REGRASS PER TECH. SPECS.

CONCRETE RESIDENTIAL STREET SECTION

WITH CURB & GUTTER

SCALE: N.T.S.



NOTE:
1. CURB AND GUTTER TO HAVE EXPANSION JOINTS ON 100' CENTERS; AT END OF ALL RADIUS POINTS, AND WHERE NEW CONCRETE TIES TO OLD CONCRETE, INSTALL SAWED CONTRACTION JOINTS ON 20' CENTERS.
2. SEE ROADWAY SECTION FOR SUBGRADE REQUIREMENTS

CURB AND GUTTER SECTION

SCALE: N.T.S.

Sources of Possible Funding

The sources of funding for street paving projects include loan and grant programs. Through the United States Department of Agriculture and Texas Department of Agriculture (USDA and TDA).

USDA Rural Development in Texas administers the community Facilities Direct Loan and Grant Program. This program provides affordable funding (grants are extremely limited) to develop essential community facilities, including streets, in rural areas. Low interest loans are available with interest rates set by Rural Development. Applications for funding are accepted year-round.

TDA offers a Community Development Block Grant (TXCDBG) Program for rural communities. This program aims to develop viable communities by providing decent housing and suitable living environments and expanding economic opportunities principally for persons of low to moderate income. This includes streets and drainage improvements. The current maximum grant that is available is \$750,000.00 and requires at least a 2 percent local match.

An alternative to these programs is the private markets. Loans can be obtained from banks at a somewhat higher interest rate, but with a less involved and much less expensive application process. Loan funds can generally be obtained from the private markets faster than through Rural Development. Unfortunately, unless the term of the loan is 20 years or less, the loan will not be paid off before the streets will require another major repair/reconstruction.

The City historically budgets approximately \$25,000 to \$200,000 per year for street repairs and \$100,000 to \$1,000,000 on capital street improvements. It is recommended that the City continue budgeting for street repairs and maintain their capital improvements fund which would receive a portion of the general fund revenues. As this account balance builds up, a contractor can be hired to perform street improvements/reconstruction projects.

Street Plan

A. Goals

Goals for the street system in priority order are as follows:

1. Replace streets that serve as collectors for existing and anticipated developments
2. Replace streets that are around schools
3. Replace all gravel streets
4. Replace all HMAC streets that are rated as “poor” (D)
5. Replace streets around public facilities (e.g. parks, hospital, police department, fire department, library)
6. Replace select HMAC streets rated as “fair” (C) that are frequently traveled and have damaged or no curb and gutter.
7. Replace all other HMAC Streets rated as “fair” (C).

The City should maintain the progress that has been made, by annually inspecting hot mix asphalt streets and apply crack sealant when deterioration begins. Routine maintenance is imperative if the City wishes to extend the life of reconstructed roadways and keep direct and indirect cost to a minimum.

Utilizing the priority system identified below, the goal is to bring all streets up to the minimum roadway standards outlined herein. Adequate storm drainage improvements must be installed in conjunction with the paving improvements. In addition, all planned improvements should be coordinated with any proposed water and wastewater projects, and communicated with the fiber optic cable, telephone, gas, and electric utilities to minimize disruption of the new pavement by subsequent utility repairs.

B. Objectives:

Since the City does not have the financial ability to improve all streets at once, priorities must be assigned. Considerations in a street priority process generally include 1) travel distance, 2) the existing surfacing type, 3) the existing surface condition, 4) estimated traffic volume, and 5)

condition of existing utilities beneath the pavement. Accordingly, the following prioritization has been established for a systematic approach to street improvements.

1. Priority 1 (2026 - 2031)
 - a. Upgrade or replace streets that serve as collectors for existing and anticipated developments, and streets that are around schools.
2. Priority 2 (2031 – 2036)
 - a. Replace all gravel streets and HMAC streets rated as “poor” (D)
3. Priority 3 (2036 – 2046)
 - a. Replace streets around public facilities (e.g. parks, hospital, police department, fire department, library) and select HMAC streets rated as “fair” (C) that are frequently traveled and have damaged or no curb and gutter.
 - b. Replace all other HMAC streets rated as “fair” (C).

Exhibit 6 depicts all proposed street improvement recommendations along with their assigned prioritization. All priority projects should be done by scheduling one or more blocks per year through a bond issue, loan, grant, taxes, or a combination thereof. In addition, all priority projects should consider the following objectives:

1. Establish and maintain close contact with the Texas Department of Transportation, to maximize assistance from TxDOT for drainage and paving improvements along state-maintained roads in the community.
2. Require development efforts in the community to conform to the street standards outlined herein, and to provide collector width streets when shown in the overall plan. Adherence to such standards may require the City to update its Subdivision Ordinance.
3. Continue to maintain a regular budget for street repairs and capital improvements.
4. Establish funding sources for Priority 1 Improvements through TDA - TXCDBG funds and local tax revenues. Other funding options will have to be considered if a TDA - TXCDBG is used for water and wastewater improvements during the same time period.

Table 6 through **Table 8** show the opinion of probable construction cost (OPCC) for Priority 1 through Priority 3 projects. The price per square yard used in these tables was derived from previous projects of similar scope and size and inflated to 2026 dollars. All projects listed in **Tables 6** through **8** assume construction of asphalt streets to the minimum street standards, previously outlined or the streets current width if it surpasses said minimum standards. In addition, the unit prices listed in **Tables 6** through **8** include curb and gutter, storm sewer, and inlets. The tables include channel crossing replacement as a separate line item.

Table 6 – Priority 1 (Immediate) Improvements

Street Name	From	To	Estimated Length (LF)	Estimated Width (LF)	Proposed Width (LF)	Estimated Area (SY)	\$/SY	Total Price
6 th St	N Main St	N Sycamore St	1,913	50	50	10,628	\$ 220	\$ 2,338,111
7 th St	N Sycamore St	N Hickory St	367	25	40	1,631	\$ 220	\$ 358,844
7 th St	N Hickory St	N Oak St	1,299	40	40	5,773	\$ 220	\$ 1,270,133
7 th St	N Oak St	N Main St	240	54	54	1,440	\$ 220	\$ 316,800
9 th St	N Mesquite St	N Walnut St	2,010	26	40	8,933	\$ 220	\$ 1,965,333
Ash St	FM 373	Cross St	5,580	26	40	24,800	\$ 220	\$ 5,456,000
Ash St	Cross St	W Eddy St	610	36	40	2,711	\$ 220	\$ 596,444
N Oak St	8 th St	7 th St	547	62	62	3,768	\$ 220	\$ 829,009
Channel Crossing Culverts								\$ 230,676
Sub-Total								\$ 13,361,352
Contingency (10%)								\$ 1,336,135
Design Surveying								\$ 118,920
Design Engineering								\$ 1,149,080
Bidding & Contract Execution								\$ 120,260
Construction Engineering								\$ 766,950
Construction Testing								\$ 80,170
Inspection								\$ 384,810
Warranty Review								\$ 52,110
Total								\$ 17,369,787

Table 7 – Priority 2 Improvements

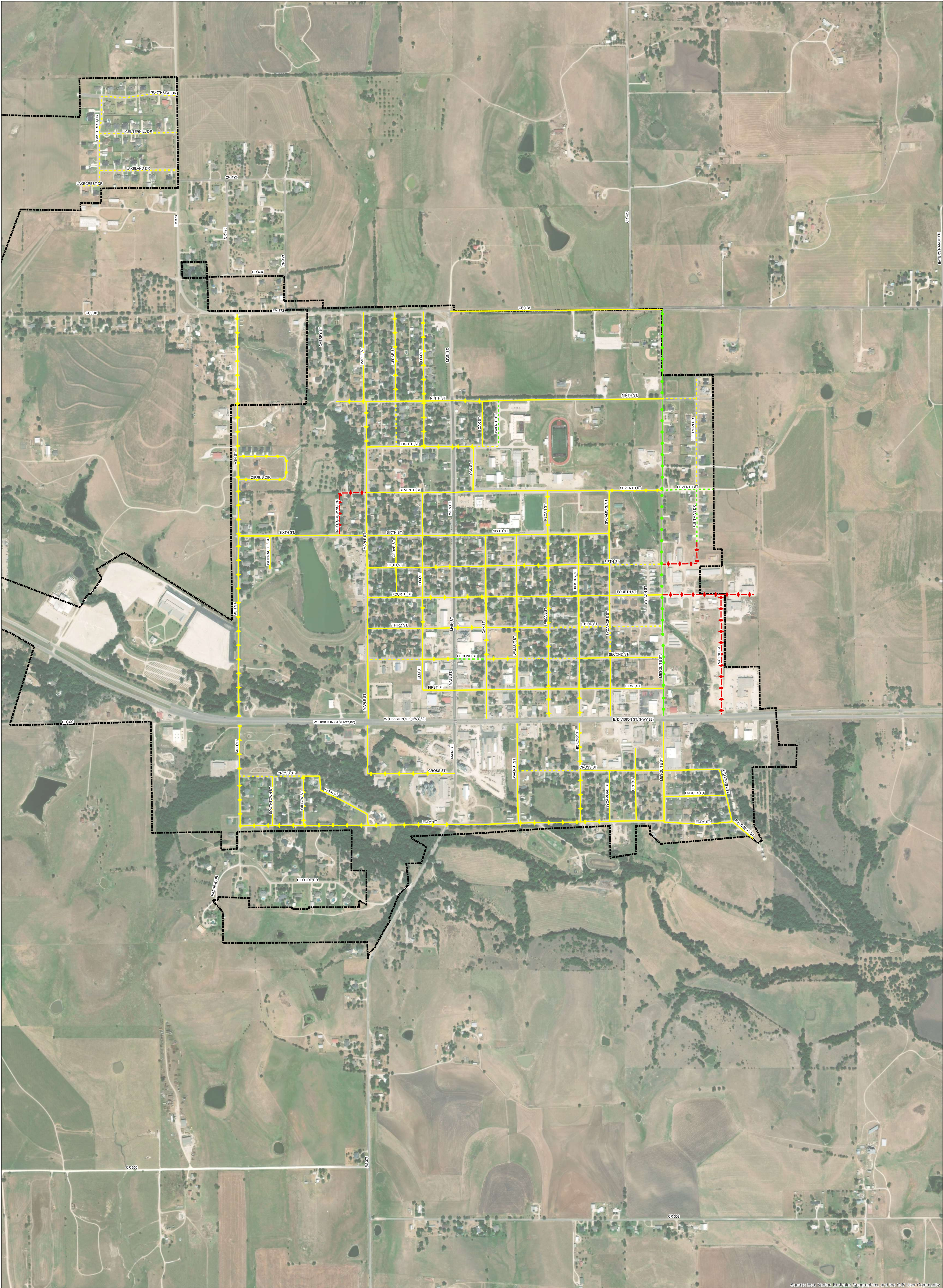
Street Name	From	To	Estimated Length (LF)	Estimated Width (LF)	Proposed Width (LF)	Estimated Area (SY)	\$/SY	Total Price
2 nd St	N Elm St	N Main St	397	50	50	2,206	\$ 220	\$ 485,222
2 nd St	N Oak St	Walnut St	371	50	50	2,061	\$ 220	\$ 453,444
3 rd St	N Oak St	N Main St	395	42	42	1,843	\$ 220	\$ 405,533
4 th St	N Elm St	N Oak St	781	50	50	4,339	\$ 220	\$ 954,556
4 th St	N Mesquite St	Dead End	1,151	43	43	5,499	\$ 220	\$ 1,209,829
5 th St	Fleitman Dr	N Mesquite St	435	40	40	1,933	\$ 220	\$ 425,333
5 th St	N Pecan St	N Walnut St	384	50	50	2,133	\$ 220	\$ 469,333
5 th St	N Main St	N Elm St	385	40	40	1,711	\$ 220	\$ 376,444
7 th St	N Maple St	NRE Grewing Dr	334	25	40	1,484	\$ 220	\$ 326,578
8 th St	N Elm St	N Oak St	708	50	50	3,933	\$ 220	\$ 865,333
9 th St	N Walnut St	N Main St	559	38	40	2,484	\$ 220	\$ 546,578
9 th St	N Maple St	Cherry Ln	368	45	45	1,840	\$ 220	\$ 404,800
Cross St	Maple St	S Main St	1,067	26	40	4,742	\$ 220	\$ 1,043,289
Eddy St	S Ash St	S Hickory St	4,189	20	40	18,618	\$ 220	\$ 4,095,911
E Eddy St	S Hickory St	S Sycamore St	356	46	46	1,820	\$ 220	\$ 400,302
Cherry Ln	FM 373	9 th St	1,218	38	38	5,143	\$ 220	\$ 1,131,387
NRE Grewing Dr	7 th St	W 6 th St	513	26	40	2,280	\$ 220	\$ 501,600
S Willow St	Cross St	W Eddy St	604	50	50	3,356	\$ 220	\$ 738,222
N Maple St	9 th St	8 th St	560	50	50	3,111	\$ 220	\$ 684,444
N Cedar St	FM 373	9 th St	1,099	40	40	4,884	\$ 220	\$ 1,074,578
N Elm St	FM 373	8 th St	1,655	40	40	7,356	\$ 220	\$ 1,618,222
N Elm St	4 th St	3 rd St	377	46	46	1,927	\$ 220	\$ 423,916
N Oak St	3 rd St	2 nd St	401	48	48	2,139	\$ 220	\$ 470,507
N Walnut St	3 rd St	2 nd St	390	45	45	1,950	\$ 220	\$ 429,000
N Pecan St	7 th St	6 th St	526	50	50	2,922	\$ 220	\$ 642,889
N Pecan St	6 th St	3 rd St	1,146	46	46	5,857	\$ 220	\$ 1,288,613
N Pecan St	3 rd St	2 nd St	393	43	43	1,878	\$ 220	\$ 413,087
N Pecan St	2 nd St	Hwy 82	719	50	50	3,994	\$ 220	\$ 878,778
S Hickory St	Hwy 82	E Cross St	592	50	50	3,289	\$ 220	\$ 723,556
S Hickory St	E Cross St	E Eddy St	622	44	44	3,041	\$ 220	\$ 668,996
N Sycamore St	7 th St	6 th St	526	44	44	2,572	\$ 220	\$ 565,742
Magnolia St	4 th St	Hwy 82	1,470	38	40	6,533	\$ 220	\$ 1,437,333
Fleitman Dr	5 th St	7 th St	273	42	42	1,274	\$ 220	\$ 280,280
Channel Crossing Culverts								\$ 218,983

Sub-Total	\$ 26,652,619
Contingency (10%)	\$ 2,665,262
Design Surveying	\$ 237,210
Design Engineering	\$ 2,292,130
Bidding & Contract Execution	\$ 239,880
Construction Engineering	\$ 1,529,870
Construction Testing	\$ 159,920
Inspection	\$ 767,600
Warranty Review	\$ 103,950
Total	\$ 34,648,440

Table 8 – Priority 3 Improvements

Street Name	From	To	Estimated Length (LF)	Estimated Width (LF)	Proposed Width (LF)	Estimated Area (SY)	\$/SY	Total Price
1 st St	N Mesquite St	Elm St	2,958	50	50	16,433	\$ 220	\$ 3,615,333
2 nd St	N Hickory St	N Mesquite St	1,028	50	50	5,711	\$ 220	\$ 1,256,444
3 rd St	N Pecan St	N Oak St	757	44	44	3,701	\$ 220	\$ 814,196
3 rd St	N Main St	N Maple St	1,071	40	40	4,760	\$ 220	\$ 1,047,200
4 th St	N Maple St	N Elm St	686	44	44	3,354	\$ 220	\$ 737,831
4 th St	N Oak St	N Pecan St	759	45	45	3,795	\$ 220	\$ 834,900
4 th St	N Pecan St	N Mesquite St	1,393	50	50	7,739	\$ 220	\$ 1,702,556
5 th St	N Sycamore St	N Pecan St	754	50	50	4,189	\$ 220	\$ 921,556
5 th St	N Walnut St	N Main St	772	47	47	4,032	\$ 220	\$ 886,942
5 th St	N Elm St	N Maple St	685	28	40	3,044	\$ 220	\$ 669,778
6 th St	N Ash St	N Main St	2,646	50	50	14,700	\$ 220	\$ 3,234,000
7 th St	N Main St	N Maple St	1,075	45	45	5,375	\$ 220	\$ 1,182,500
8 th St	N Maple St	N Elm St	712	50	50	3,956	\$ 220	\$ 870,222
8 th St	N Oak St	N Walnut St	206	50	50	1,144	\$ 220	\$ 251,778
9 th St	N Main St	N Maple St	1,068	45	45	5,340	\$ 220	\$ 1,174,800
Co Rd 428	N Main St	N Mesquite St	2,608	25	40	11,591	\$ 220	\$ 2,550,044
Cross St	S Hickory St	Mesquite St	1,028	50	50	5,711	\$ 220	\$ 1,256,444
Cross St	Mesquite St	Hillcrest St	692	40	40	3,076	\$ 220	\$ 676,622
Endres St	S Mesquite St	Hillcrest St	767	40	40	3,409	\$ 220	\$ 749,956
E Eddy St	S Sycamore St	S Mesquite St	663	46	46	3,389	\$ 220	\$ 745,507
E Eddy St	S Mesquite St	Hillcrest St	831	40	40	3,693	\$ 220	\$ 812,533
Southtown Dr	Cross St	W Eddy St	604	40	40	2,684	\$ 220	\$ 590,578
Park St	Willow St	W Eddy St	1,152	40	40	5,120	\$ 220	\$ 1,126,400
N Maple St	FM 373	3 rd St	3,325	50	50	18,472	\$ 220	\$ 4,063,889

Street Name	From	To	Estimated Length (LF)	Estimated Width (LF)	Proposed Width (LF)	Estimated Area (SY)	\$/SY	Total Price
N Maple St	3 rd St	2 nd St	385	46	46	1,968	\$ 220	\$ 432,911
N Maple St	2 nd St	Hwy 82	742	40	40	3,298	\$ 220	\$ 725,511
N Maple St	Hwy 82	W Cross St	564	52	52	3,259	\$ 220	\$ 716,907
N Cedar St	6 th St	4 th St	757	28	40	3,364	\$ 220	\$ 740,178
N Elm St	7 th St	5 th St	914	44	44	4,468	\$ 220	\$ 983,058
N Elm St	5 th St	4 th St	370	50	50	2,056	\$ 220	\$ 452,222
N Elm St	3 rd St	1 st St	764	42	42	3,565	\$ 220	\$ 784,373
N Oak St	9 th St	8 th St	563	28	40	2,502	\$ 220	\$ 550,489
N Oak St	6 th St	3 rd St	1,125	48	48	6,000	\$ 220	\$ 1,320,000
N Oak St	2 nd St	Hwy 82	727	48	48	3,877	\$ 220	\$ 853,013
N Walnut St	6 th St	3 rd St	1,143	50	50	6,350	\$ 220	\$ 1,397,000
N Walnut St	2 nd St	E Eddy St	1,958	45	45	9,790	\$ 220	\$ 2,153,800
N Hickory St	6 th St	2 nd St	1,530	46	46	7,820	\$ 220	\$ 1,720,400
N Hickory St	2 nd St	Hwy 82	727	50	50	4,039	\$ 220	\$ 888,556
N Sycamore St	6 th St	Hwy 82	2,256	44	44	11,029	\$ 220	\$ 2,426,453
S Sycamore St	E Cross St	E Eddy St	617	28	40	2,742	\$ 220	\$ 603,289
S Pine St	E Eddy St	Dead End	905	32	40	4,022	\$ 220	\$ 884,889
Mesquite St	Hwy 82	E Eddy St	1,228	44	44	6,004	\$ 220	\$ 1,320,782
Hillcrest St	E Cross St	Dead End	1,074	40	40	4,773	\$ 220	\$ 1,050,133
Weinzapfel St	6 th St	Dead End	441	40	40	1,960	\$ 220	\$ 431,200
Channel Crossing Culverts								\$ 127,698
Sub-Total								\$ 52,334,871
Contingency (10%)								\$ 5,233,487
Design Surveying								\$ 465,790
Design Engineering								\$ 4,500,800
Bidding & Contract Execution								\$ 471,020
Construction Engineering								\$ 3,004,030
Construction Testing								\$ 314,010
Inspection								\$ 1,507,250
Warranty Review								\$ 204,110
Total								\$ 68,035,368



Source: Esri, Garmin, Earthstar Geographics, and the GIS User Community

Legend			Existing Street Conditions		
Street Material & Condition			2026 Capital Improvements Plan Muenster, Texas		
Asphalt, Very Good	Concrete, Very Good		Muenster City Limits	HAYTER ENGINEERING Practical Infrastructure Solutions	
Asphalt, Good	Concrete, Good				
Asphalt, Fair	Gravel, Fair		Hayter Engineering, Inc. 4445 SE Loop 286 Paris TX 75460 www.haytereng.com TxEng F-315 TxSurv F-10028600		
Asphalt, Poor	Gravel, Poor				
			July 2026	PROJECT NO.:168006	EXHIBIT 5

Water System Study

The City owns and operates its own drinking water supply, consisting of five deep wells, two high service pump stations, one elevated storage tank, three ground storage tanks, and 25 miles of distribution network ranging in size from 1-inch to 12-inch diameter. The water system serves the City of Muenster and its Extraterritorial Jurisdiction (ETJ) which is mostly rural residential with minimal commercial and light industrial customers. The distribution network contains approximately 832 active meters. The TCEQ Public Water System (PWS) identifier for Muenster is #0490002, and the City's Certificate of Convenience Number (CCN) is #20876.

Summary of Water System

The City receives 100-percent of its water from wells (*Table 9*). The City's wells are located in the Antlers sand formation of the Trinity Aquifer and are pumped into the three ground storage tanks with a combined storage capacity of 500,000 gallons. From there, high service pumps supply water to the distribution system and the City's 200,000-gallon elevated storage tank (124 feet tall).

Table 9 – Well Inventory

Description	Drilled (year)	Depth (ft)	Aquifer	Rated Capacity (gpm)
Well #1	1913	618	Trinity	Inactive
Well #2	1951	672	Trinity	Inactive
Well #3	1945	712	Trinity	Inactive
Well #4	1953	683	Trinity	142
Well #5	1971	660	Trinity	85
Well #6	1981	625	Trinity	137
Well #7	1996	615	Trinity	205
Well #8	2009	630	Trinity	160

A summary of the water system facilities is provided in *Table 10*.

Table 10 – Water System Facilities Capacity

Description	Water System Capacity
First Street High Service Pump #1	550 gpm
First Street High Service Pump #2	550 gpm
Hillcrest High Service Pump #1	500 gpm
Hillcrest High Service Pump #2	500 gpm
Hillcrest High Service Pump #3	500 gpm
Hillcrest High Service Pump #4	500 gpm
Elevated Storage	200,000 gal
Hillcrest Ground Storage	100,000 gal
Hillcrest Ground Storage	200,000 gal
First Street Ground Storage	200,000 gal
Well Capacity	729 gpm

Distribution System

The water distribution system is centered around a 12-inch transmission main connecting the First Street Pump Station, Hillcrest Pump Station, and the elevated storage tank. From this 12-inch main, 8-inch and 6-inch mains extend toward the outer portions of the System, with smaller diameter lines branching off to serve individual meters. A summary of the line sizes in the distribution system as well as the linear footage (LF) is provided in **Table 11**.

Table 11 – Summary of Distribution System Lines

Pipe Diameter (Inches)	Total Length (LF)
1	1,143
1.5	521
2	33,573
2.5	197
3	402
4	691
6	42,876
8	39,901
10	297
12	13,318
Total	135,499

Minimum waterline sizes for domestic flows are based on TCEQ Chapter 290 – Public Drinking Water, published by TCEQ in January 2019. Note that minimum waterline sizes are based strictly on the number of connections served and do not consider fire flows. A summary of these sizes and the maximum allowable connections for each is presented in **Table 12**.

Table 12 – TCEQ Minimum Line Sizes

Minimum Line Size (Inches)	Maximum Number of Connections
2	10
3	25
3	50
4	100
5	150
6	250
8 And Larger	>250

Although not included in our scope of work, the City should make every effort to ensure that the number of connections on existing and future lines do not exceed the TCEQ requirements.

System Facilities

The minimum public water system capacity requirements are based on TCEQ Chapter 290.45 (b)(1)(D) – Public Drinking Water, published by TCEQ in January 2019 and are as follows:

1. Two or more wells having a total capacity of 0.6 gallons per minute (gpm) per connection.
2. A total storage capacity of 200 gallons per connection.
3. An elevated storage capacity of 100 gallons per connection.
4. Two or more pumps that have a total capacity of 2.0 gallons per minute per connection or have at least 1,000 gallons per minute and the ability to meet peak hourly demands with the largest pump out of service, whichever is less, at each pump station or pressure plane. For systems which provide an elevated storage of 200 gallons per connection, two service pumps with a minimum combined capacity of 0.6 gpm per connection are required at each pump station or pressure plane.
5. Emergency power for systems which serve more than 250 connections and do not meet the elevated storage requirement. Sufficient emergency power must be provided to deliver a minimum of 0.35 gpm per connection to the distribution system in the event of the loss of normal power supply.

TCEQ 291.93 requires that once a public water system reaches 85% of its capacity, the system shall submit a preliminary engineering report that explains how the water system will provide the expected service demands. Once this 85% capacity is exceeded, the facility in question should be considered deficient and plans should be made to expand system capacities as appropriate. **Table 13** below provides a summary of the existing facilities, as well as system capacity requirements based on anticipated meter connections as outlined in **Table 4**.

Note, when the elevated storage capacity exceeds 200 gallons/connection, the production capacity for the high service pump stations are only required to be 0.6 gpm/connection.

Table 13 – TCEQ Minimum System

TCEQ Requirements	Existing Facility Capacity	85% Existing Facility Capacity	2026 Water System Capacity Requirements	2031 Water System Capacity Requirements	2036 Water System Capacity Requirements	2046 Water System Capacity Requirements
1	729 gpm	620 gpm	499	570	652	851
2	700,000 gal	595,000 gal	166,400	190,106	217,224	283,636
3	200,000 gal	170,000 gal	83,200	95,053	108,612	141,818
4	3,100 gpm	2,635 gpm	499*	570*	2,172 ⁺	2,836 ⁺

* 0.6 gpm/connection

+ 2.0 gpm/connection

The City will exceed 85% capacity for the well pumps in 2036 and will exceed 100% capacity prior to 2046. As such, the City should begin planning for additional well pump capacity in 2036, and complete construction by 2040. Hayter Engineering recommends the new wells and facilities be installed on the north side of Muenster to match expected growth.

By 2046, the City will have exceeded 85% capacity for high service pumps. At that time, the City should begin planning to address this issue. This issue can be addressed by adding additional pumping capacity or additional elevated storage capacity.

Water Model

Computer modeling is a method by which flows, pressures and headloss in a water system can be mathematically estimated and compared to TCEQ minimum standards. If the modeling results shows deficiencies in the water system, based on TCEQ minimum standards, the deficient facilities are noted and a plan to correct them is formulated. Modeling is a means to perform an evaluation of the existing system, as well as to determine the impact of growth on the system. The water system analysis for the City of Muenster was performed using Bentley WaterCAD.

A. Mapping

The City of Muenster provided Hayter Engineering with ArcGIS shapefiles of the existing water system (waterlines, elevated tanks, meters, ground storage tanks, valves, pumps, and fire hydrants.) These shapefiles were developed by the City as part of a 2024 planning effort with GrantWorks. This mapping served as the GIS basis for the development of the hydraulic model.

B. Water Model Overview

Hayter Engineering imported the shapefiles (lines, pumps, storage and meters) into WaterCAD to debug and analyze the water system model. Modeling was performed on all lines, pump stations, storage tanks, and meters.

As per TCEQ's Chapter 290 – Public Drinking Water, the system must be designed to maintain a minimum pressure of 35 pounds per square inch (psi) at all points within the distribution network at a flow rate of 1.5 gpm per connection. With 832 connections in the system and a flowrate of 1.5 gpm per connection, the total existing system demand is 1,248 gpm.

C. Water Model Results

This section discusses the modeling results of the existing and future system and required upgrades for the City. Required upgrades are based on deficiencies found in the water system models and what it will take to bring the system up to the minimum TCEQ standards for water distribution systems.

The existing conditions scenario applied 1.5 gpm to all connections and utilized the existing pipe network previously discussed. Based on this configuration, pressures were determined at various nodes in the system. **Exhibit 7** shows the results of this scenario.

The lowest pressure identified in this scenario is located along Northside Drive with 36 psi. The highest pressure, 93 psi, is located along Eddy Street in the southern portion of the system. For existing conditions, no areas within the water system were found to be below the TCEQ minimum required pressure of 35 psi. Therefore, no existing conditions water system improvements are recommended at this time.

A second scenario was created based on where the City anticipates development to occur over the next 5 years. **Exhibit 4** shows the location of the anticipated developments. A demand of 1.5 gpm was applied to each connection. This water model utilized the existing pipe network previously

discussed. Note that the lines to serve the developments were modeled as 8-inch pipe. **Exhibit 8** shows the results of this scenario.

The lowest pressure identified in this scenario is at the northern-most extent of the proposed 23-acre development along FM 373, with a 26 psi reading. The highest pressure, 87 psi, remains along Eddy Street in the southern portion of the system. The low pressure on the proposed 23-acre development is not a result of undersized water mains. Rather, it is the result of this area's high elevation compared to the rest of the system. When the City's water tower was built, it was not intended to provide pressure to this area. As such, simply upsizing existing pipes will not address this deficiency.

When this proposed 23-acre development is constructed, another pressure source may be required. Hayter Engineering recommends that property be acquired on the north side of town for the construction of a new booster pump station, hydrotank, and a 100,000 gallon GST. The existing 8" waterline on 9th Street, N Maple Street, and FM 373 will need to be upsized to a 12". This addition will allow the City to serve this proposed 23-acre development as well as future development in the northern portion of the City's system.

A third scenario was then created applying the proposed line size upgrades to the existing pipe network and modeling the additional pump station adjacent to the 23-acre proposed development. A demand of 1.5 gpm per connection was applied. **Exhibit 9** shows the results of this scenario. No areas with pressures less than 35 psi were identified.

The lowest pressure identified in this scenario is 39 psi and is located at Elm Street and FM 373. The highest pressure, 87 psi, is located along Eddy Street in the southern portion of the system.

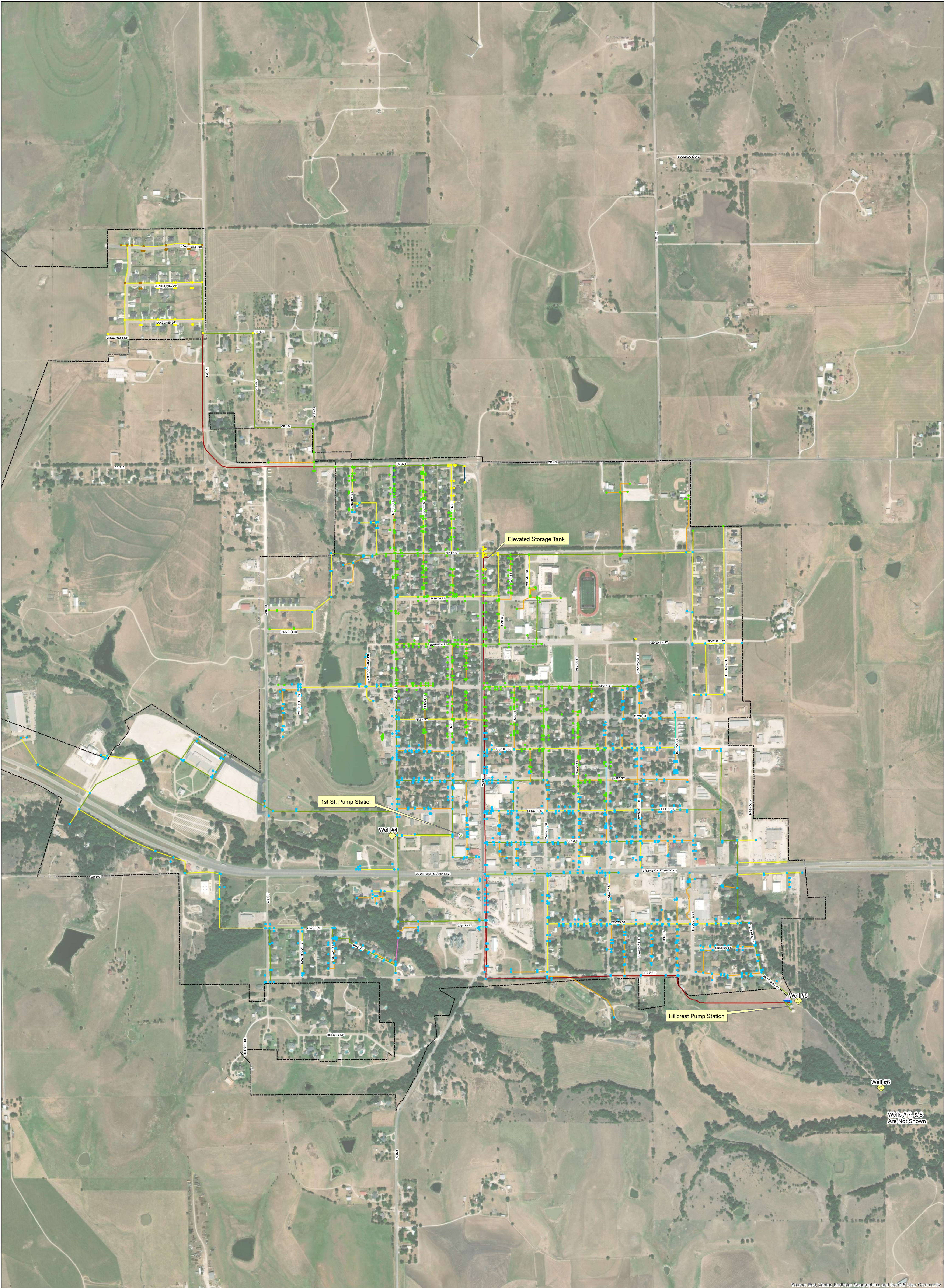
A fourth scenario was created based on where future development is expected to occur over the 6-to-10 years. **Exhibit 4** shows the location of the anticipated developments. A demand of 1.5 gpm was applied to each connection. This water model utilized the required line size upgrades in scenario 3. **Exhibit 10** shows the results of this scenario.

The lowest pressure identified in this scenario is 39 psi and is located at Elm Street and FM 373. The highest pressure, 87 psi, is located along Eddy Street in the southern portion of the system. No areas with pressures less than 35 psi were identified. As a result, no additional upgrades are required for this scenario to meet TCEQ minimum requirements.

Exhibit 9 and **Table 14** show the recommended projects to accommodate the anticipated developments. The prices used in this table were derived from previous projects of similar scope and size and inflated to 2026 dollars.

Table 14 – Prices of Water Line Upgrades with Developments

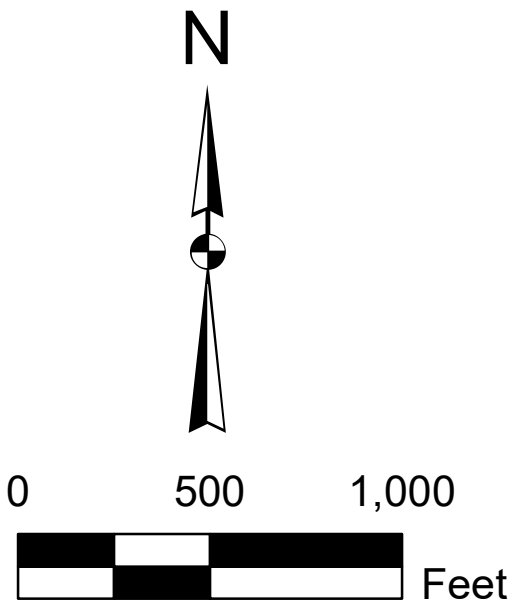
Description	Quantity	Estimated Price Per Unit	Total Price
Upsizing existing waterline to 12"	4,235 LF	\$ 193	\$ 817,355
10,000 gallon hydropneumatic tank	1 LS	\$ 275,000	\$ 275,000
100,000 gallon ground storage tank	1 LS	\$ 350,000	\$ 350,000
Booster pump facility (two pumps)	1 LS	\$ 350,000	\$ 350,000
Sub-Total			\$ 1,792,355
Contingency (10%)			\$ 179,240
Design Surveying			\$ 15,960
Design Engineering			\$ 154,150
Bidding & Contract Execution			\$ 16,140
Construction Engineering			\$ 102,890
Construction Testing			\$ 10,760
Inspection			\$ 51,620
Warranty Review			\$ 7,000
Total			\$ 2,330,115



Source: Esri, Garmin, Earthstar, Geographics, and the GIS User Community

Legend

Pressure (psi)	Waterline Size	4"	Well
<35	1"	6"	Well
<40	1.5"	8"	Muenster City Limits
<50	2"	10"	
<65	2.5"	12"	
≥65	3"		



Existing Conditions Results

**2026 Capital Improvements Plan
Muenster, Texas**

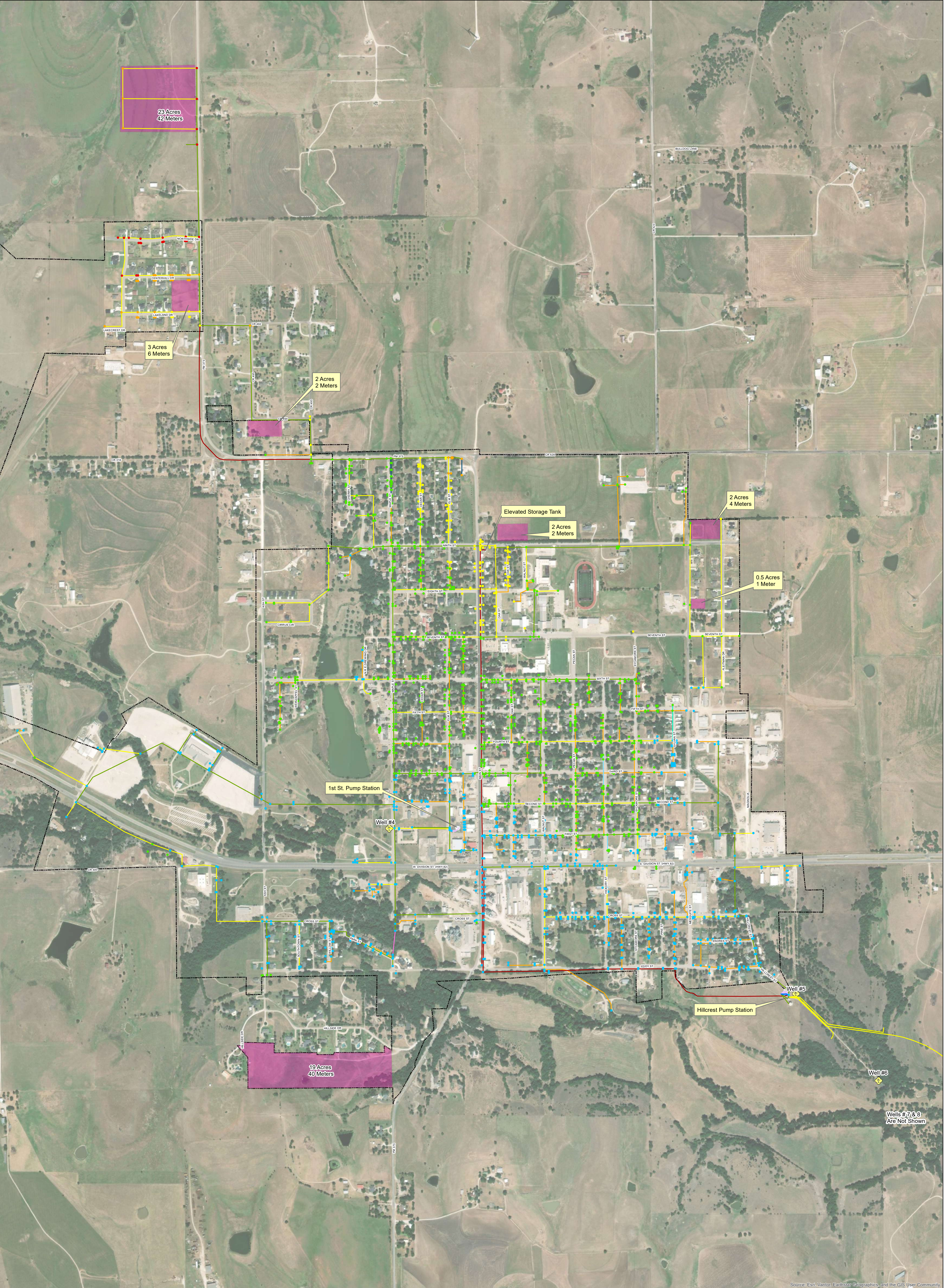


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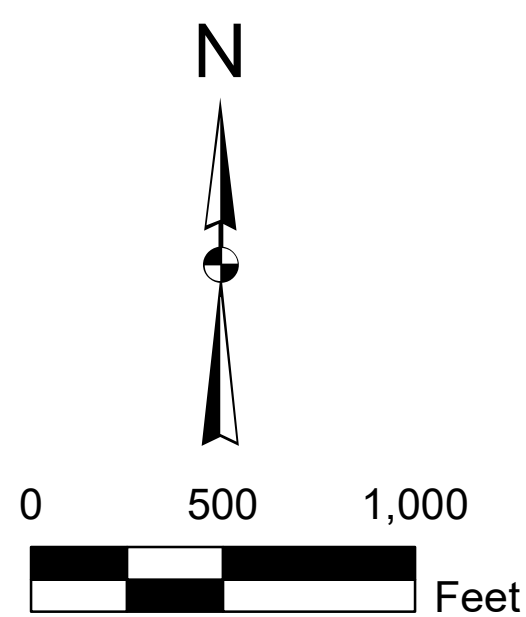
PROJECT NO.:168006

EXHIBIT 7



Legend

Pressure (psi)	Waterline Size		
• <35	1"	— 4"	Well
• <40	1.5"	— 6"	Anticipated Development
• <50	2"	— 8"	Muenster City Limits
• <65	2.5"	— 10"	
• ≥65	3"	— 12"	



Anticipated Development Results

**2026 Capital Improvements Plan
Muenster, Texas**

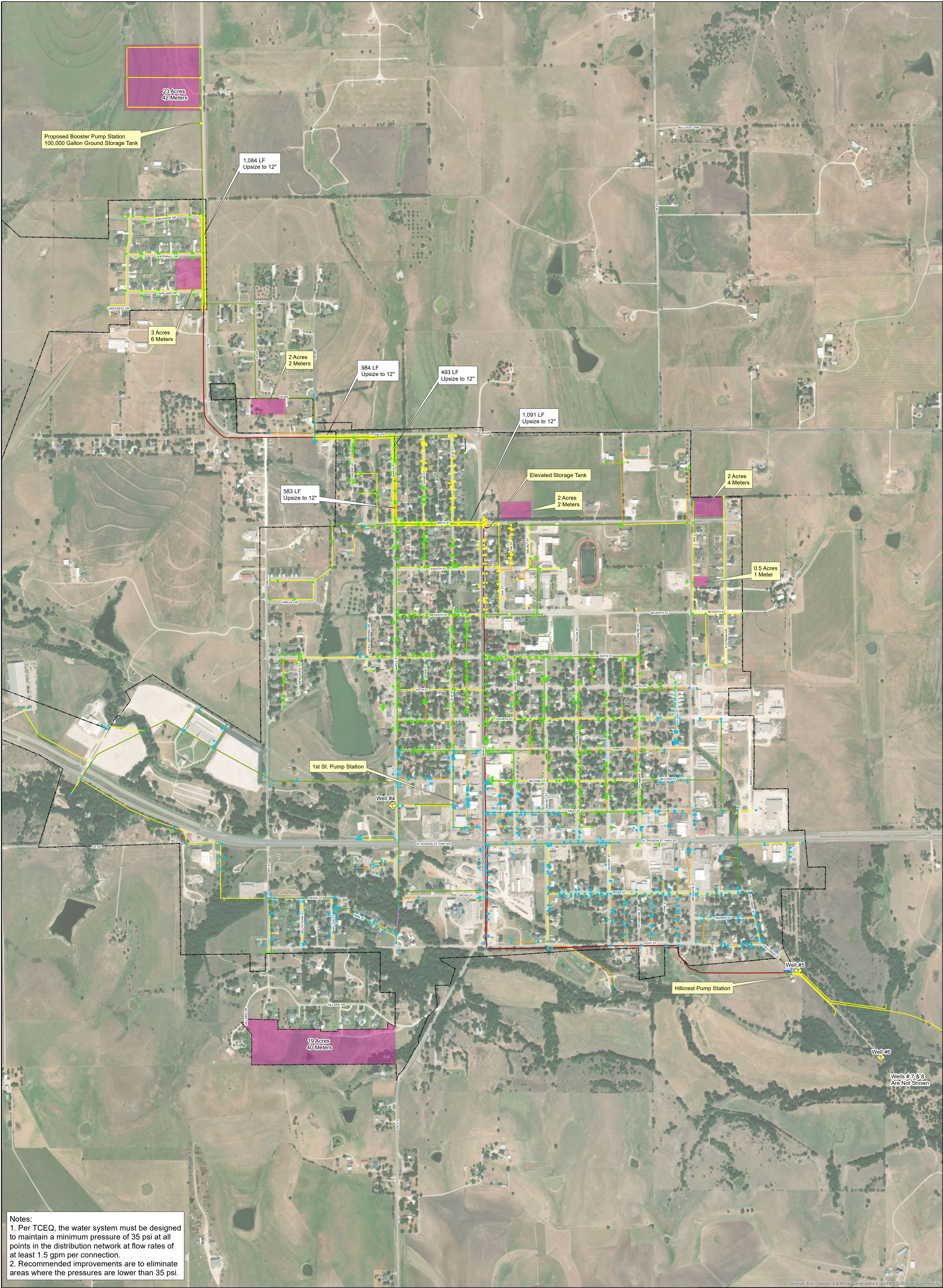


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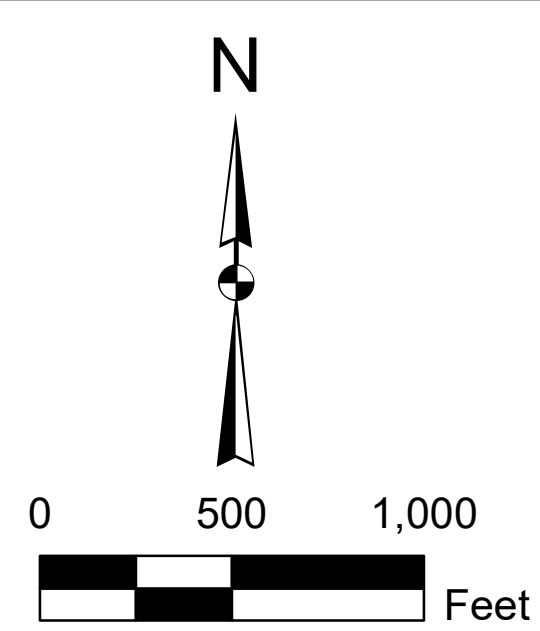
EXHIBIT 8



Notes:
1. Per TCEQ, the water system must be designed to maintain a minimum pressure of 35 psi at all points in the distribution network at flow rates of at least 1.5 gpm per connection.
2. Recommended improvements are to eliminate areas where the pressures are lower than 35 psi.

Legend

Pressure (psi)	Waterline Size		
• <35	1"	4"	Well
• <40	1.5"	6"	Recommended Projects
• <50	2"	8"	Anticipated Development
• <65	2.5"	10"	Muenster City Limits
• ≥65	3"	12"	



Anticipated Development
Water System Improvements
2026 Capital Improvements Plan
Muenster, Texas

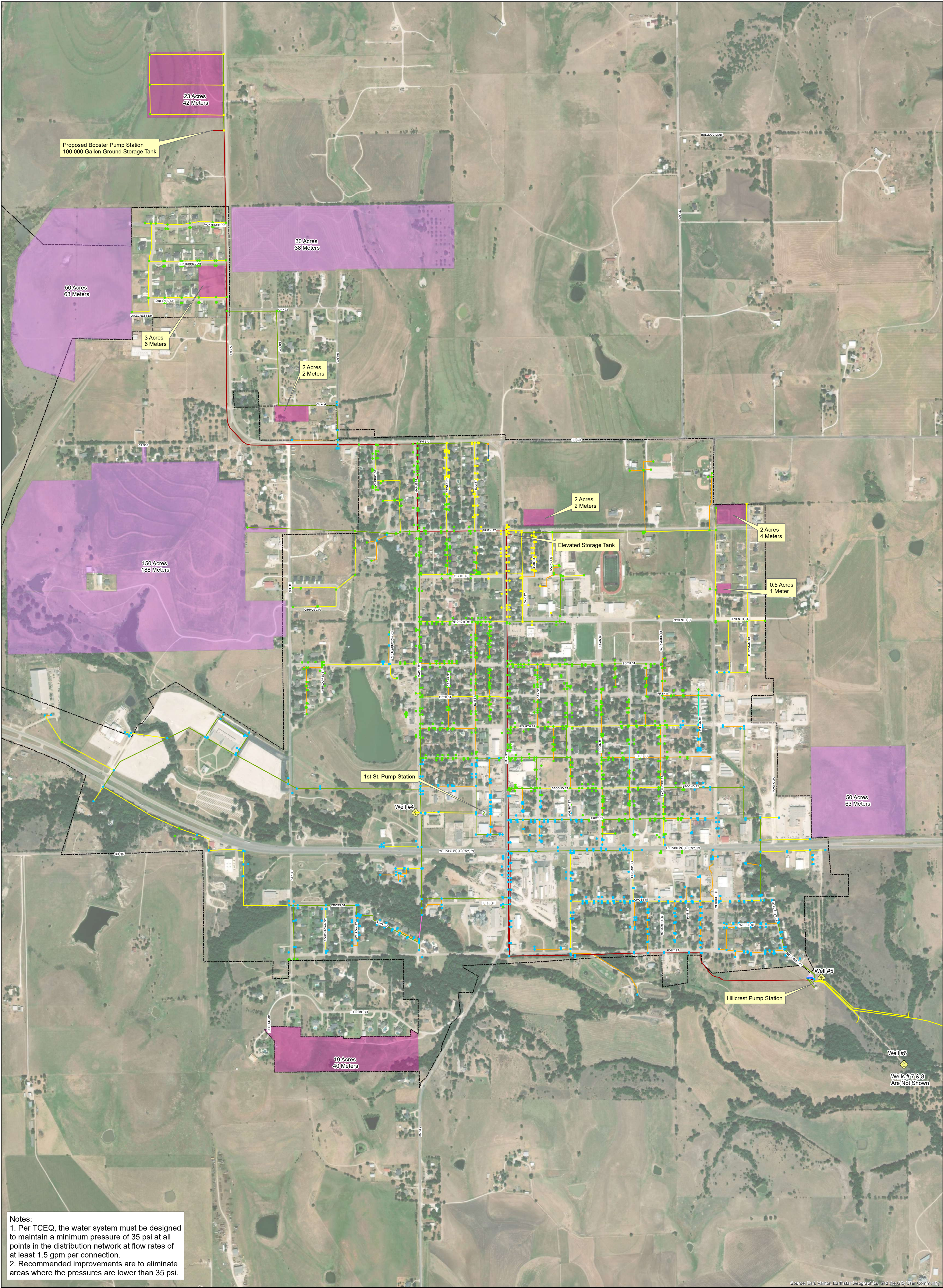
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EXHIBIT 9



Legend

Pressure (psi)	Waterline Size	Well
<35	1"	4"
<40	1.5"	6"
<50	2"	8"
<65	2.5"	10"
≥65	3"	12"

Well

Anticipated Development

Future Development

Muenster City Limits

0 500 1,000 Feet

N

Future Development Results		
2026 Capital Improvements Plan Muenster, Texas		
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July 2026	PROJECT NO.:168006	EXHIBIT 10

Wastewater System Study

Existing Wastewater System

The Muenster wastewater treatment plant (WWTP) is a conventional activated sludge treatment facility. The WWTP currently consists of an influent flow meter, bar screens, one oxidation ditch, a pump station, one final clarifier, an in-plant pump station, two chlorine contact chambers, an effluent flow meter, and three sludge drying beds.

The plant was originally constructed in 1950. In 2002, the WWTP was expanded from a permitted average daily flow capacity of 0.207 million gallons per day (MGD) to 0.341 MGD, with a peak flow capacity of 1.023 MGD. The expansion included construction of a new clarifier, pump improvements, wedge-type drying beds, flow metering equipment, and electrical system upgrades to support the increased capacity. Current Texas Commission on Environmental Quality (TCEQ) permit limitations include effluent concentrations of 10 mg/L biochemical oxygen demand (BOD) and 15 mg/L total suspended solids (TSS), with a permitted peak flow of 710 gallons per minute.

Based on historical influent data, the current average wastewater generation rate is estimated at approximately 135 gallons per capita per day (gpcd), which was used for capacity evaluations and future population projections presented in this report.

Wastewater Capacity Analysis

In accordance with Texas Commission on Environmental Quality (TCEQ) requirements, when the average daily flow (ADF) for three consecutive months reaches 75% of the permitted WWTP capacity, the City must initiate planning for expansion of the treatment facility and/or reduction of inflow and infiltration (I/I) within the collection system. Additionally, when the average daily flow reaches 90% of the permitted capacity, construction of the required improvements must be initiated. These requirements are commonly referred to as the “75/90 Rule.”

Table 15, below, shows the ADF of the existing WWTP based on current and projected populations.

Table 15-Existing Treatment Capacity

Year	Population	Unit Flow (gpcd)	ADF (MGD)	Year	Population	Unit Flow (gpcd)	ADF (MGD)
2026	1804	135	0.243	2037	2419	135	0.326
2027	1852	135	0.250	2038	2484	135	0.335
2028	1902	135	0.257	2039	2551	135	0.344
2029	1954	135	0.264	2040	2620	135	0.354
2030	2007	135	0.271	2041	2691	135	0.363
2031	2061	135	0.278	2042	2763	135	0.373
2032	2117	135	0.286	2043	2838	135	0.383
2033	2174	135	0.293	2044	2915	135	0.394
2034	2233	135	0.301	2045	2994	135	0.404
2035	2293	135	0.310	2046	3075	135	0.415
2036	2355	135	0.318				

Based on projected wastewater flows, the WWTP is anticipated to reach approximately 75% of its permitted average daily flow capacity by 2028 (indicated by yellow), at which time planning for expansion should begin in accordance with TCEQ requirements. The facility is projected to reach 90% of permitted capacity by 2035 (indicated by orange), triggering initiation of construction activities for required improvements. Under current growth projections, the WWTP is expected to reach full permitted capacity by approximately 2039 (indicated by red).

Due to anticipated long-term growth, expansion of the WWTP is recommended. Additional capacity may be required beyond this planning horizon depending on actual development patterns and inflow/infiltration conditions. Since planning and construction must occur within the next 10 years, the expansion of the WWTP will be included in the calculated impact fee.

Existing Sanitary Sewer System Analysis

Hayter Engineering utilized Bentley's SewerCAD to perform an analysis of the City's existing gravity sanitary sewer collection system (**Exhibit 11**). The City provided Hayter Engineering system-wide linework and manhole data including location, pipe diameter, pipe material and pipe length. Manhole rim elevations were assigned through SewerCAD based on USGS contours at each manhole location. Manning's n-values were assigned to each pipe based on pipe material and age. Due to the limited availability of as-built data, Hayter Engineering took a conservative approach and assigned TCEQ minimum slopes to all gravity sewer lines.

Wastewater loading inputs were developed from influent flow data from the WWTP. Monthly influent records for 2025 were analyzed to establish representative system conditions. Based on 2025 flows, the average annual daily flow was approximately 0.243 MGD. The highest monthly average daily flow of approximately 0.608 MGD occurred in May 2025 and was assumed to represent peak hydraulic loading conditions. This elevated value is likely influenced by seasonal rainfall and inflow/infiltration (I/I) within the collection system.

Industrial and commercial users were assigned demand estimates based on water meter records and historical water use. The remaining system flow was distributed across residential connections, resulting in an average demand of 0.485 gallons per minute per connection. This demand rate was applied to existing and future residential connections in the model, which also accounts for daily flow variations and peak demand conditions. Together, these assumptions provide a conservative representation of wastewater flows throughout the collection system.

Existing conditions modeling results can be seen in **Exhibit 12**. Sewer mains were considered deficient where modeled peak flows exceed the available pipe capacity. Many of the identified deficiencies occur along trunk lines receiving cumulative upstream flows from multiple service areas. Under existing conditions, the analysis identified approximately 7,173 linear feet (LF) of sewer mains that are deficient in capacity and require upsizing (**Exhibit 12**).

Proposed Sanitary Sewer System Analysis

Hayter Engineering updated the existing system SewerCAD model to include the recommended existing conditions improvements as well as the wastewater flows from anticipated developments (**Exhibit 4**). Based on this analysis, approximately 4,936 LF of sewer mains were deemed to be deficient and in need of improvements (**Exhibit 13**). Additionally, based on the projected growth,

permitting and design of the WWTP expansion should be underway by 2031 to support the anticipated increase in system capacity.

A third analysis updated the model to include the anticipated development improvements as well as the wastewater flows from future developments (*Exhibit 4*). Based on this analysis, approximately 6,443 LF of additional sewer mains were deemed to be deficient and in need of an upgrade (*Exhibit 14*). To accommodate the projected increase in wastewater flows, construction of the WWTP expansion should begin by 2035.

Exhibit 12 and *Table 16* show the improvements that need to happen regardless of development. *Exhibit 13* and *Table 17* show the projects that need to happen if the anticipated development occurs. *Exhibit 14* and *Table 18* show the projects that would need to happen for any future developments. Furthermore, the projects resulting from the anticipated and future developments assume the projects from *Exhibit 12* and *Table 16* have been constructed.

Table 16 – Estimated Wastewater Improvement Cost for Existing Conditions

Line (Proposed Size)	Estimated Length (LF)	Estimated Price Per Linear Foot	Total Price
Line A (8")	190	\$ 140	\$ 26,600
Line A (10")	185	\$ 160	\$ 29,600
Line A (12")	1,445	\$ 180	\$ 260,100
Line B (12")	1,271	\$ 180	\$ 228,780
Line C (8")	977	\$ 140	\$ 136,780
Line D (10")	2,263	\$ 160	\$ 362,080
Line E (8")	560	\$ 140	\$ 78,400
Line F (6")	282	\$ 121	\$ 34,122
Subtotal =			\$ 1,156,000
Contingency (10%) =			\$ 116,000
Engineering/Surveying/Construction Admin (20%) =			\$ 231,000
Total =			\$ 1,503,000

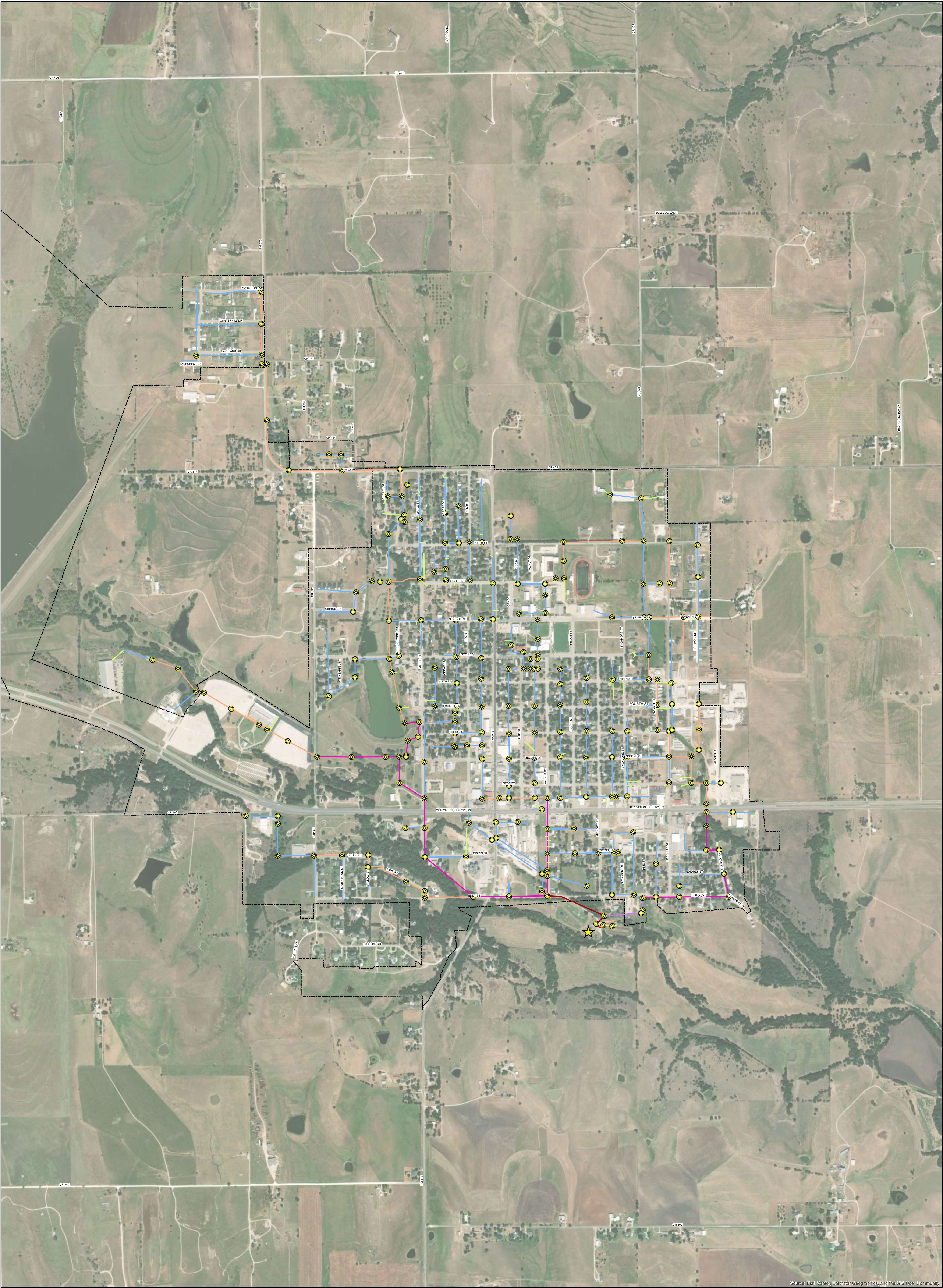
Table 17 – Estimated Wastewater Improvement Cost with Anticipated Developments

Line (Proposed Size)	Estimated Length (LF)	Estimated Price Per Linear Foot	Total Price
Line B (12")	1,434	\$ 180	\$ 258,120
Line D (10")	546	\$ 160	\$ 87,360
Line G (12")	2,013	\$ 180	\$ 362,340
Line H (10")	943	\$ 160	\$ 150,880
Subtotal =			\$ 859,000
Contingency (10%) =			\$ 86,000
Engineering/Surveying/Construction Admin (20%) =			\$ 172,000
Total =			\$ 1,117,000

Table 18 – Estimated Wastewater Improvement Cost with Future Developments

Line (Proposed Size)	Estimated Length (LF)	Estimated Price Per Linear Foot	Total Price
Line G (15")	3,695	\$ 199	\$ 735,305
Line H (8")	1,444	\$ 140	\$ 202,160
Line H (10")	1,136	\$ 160	\$ 181,760
Line I (21")	168	\$ 309	\$ 51,912
Subtotal =			\$ 1,171,000
Contingency (10%) =			\$ 117,110
Engineering/Surveying/Construction Admin (20%) =			\$ 234,230
WWTP Expansion (Includes Engineering) =			\$ 11,295,350
Total =			\$ 12,817,827

Note: Line G in Table 17 and Line G in Table 18 represent the same sewer segment. To accommodate future buildout, construction of the 15-inch line shown in Table 18 is recommended during the anticipated development phase.



Legend

Sewer Lines

10"

12"

15"

18"

4"

6"

8"

Manhole

Wastewater Treatment Plant

Muenster City Limits

N

0

600

1,200

Feet

Existing Sanitary Sewer System

2026 Capital Improvements Plan
Muenster, Texas

HAYTER
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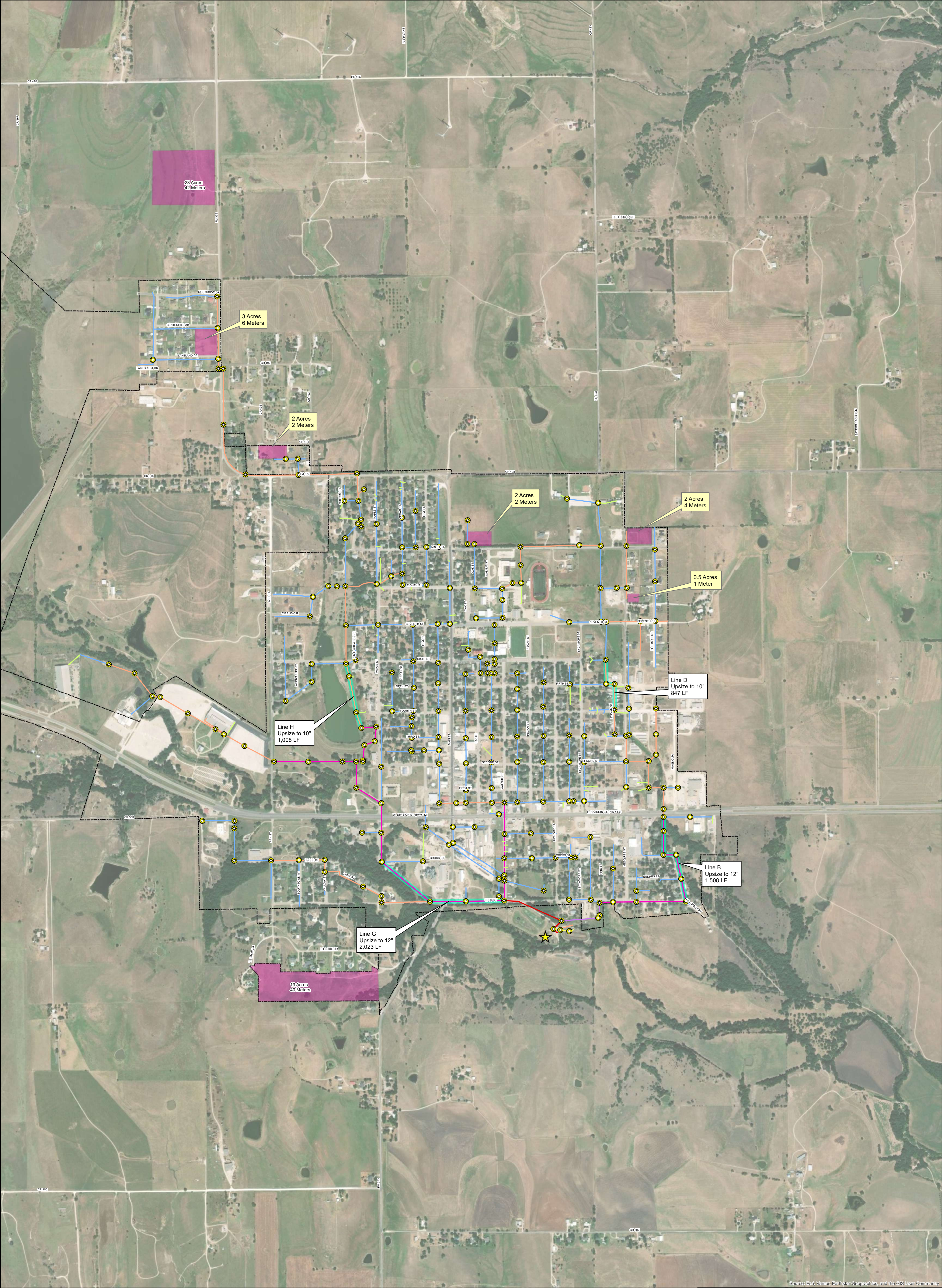
Practical Infrastructure Solutions

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July 2026

PROJECT NO.:168006

EXHIBIT 11



Source: Esri, Vantor, Earthstar Geographics, and the GIS User Community

Legend

Sewer Line Size

4"

6"

8"

10"

12"

15"

18"

Manhole

Recommend Projects

Wastewater Treatment Plant

Anticipated Development

Muenster City Limits

0

600

1,200

Feet

N

Anticipated Development

Sanitary Sewer Improvements

2026 Capital Improvements Plan

Muenster, Texas

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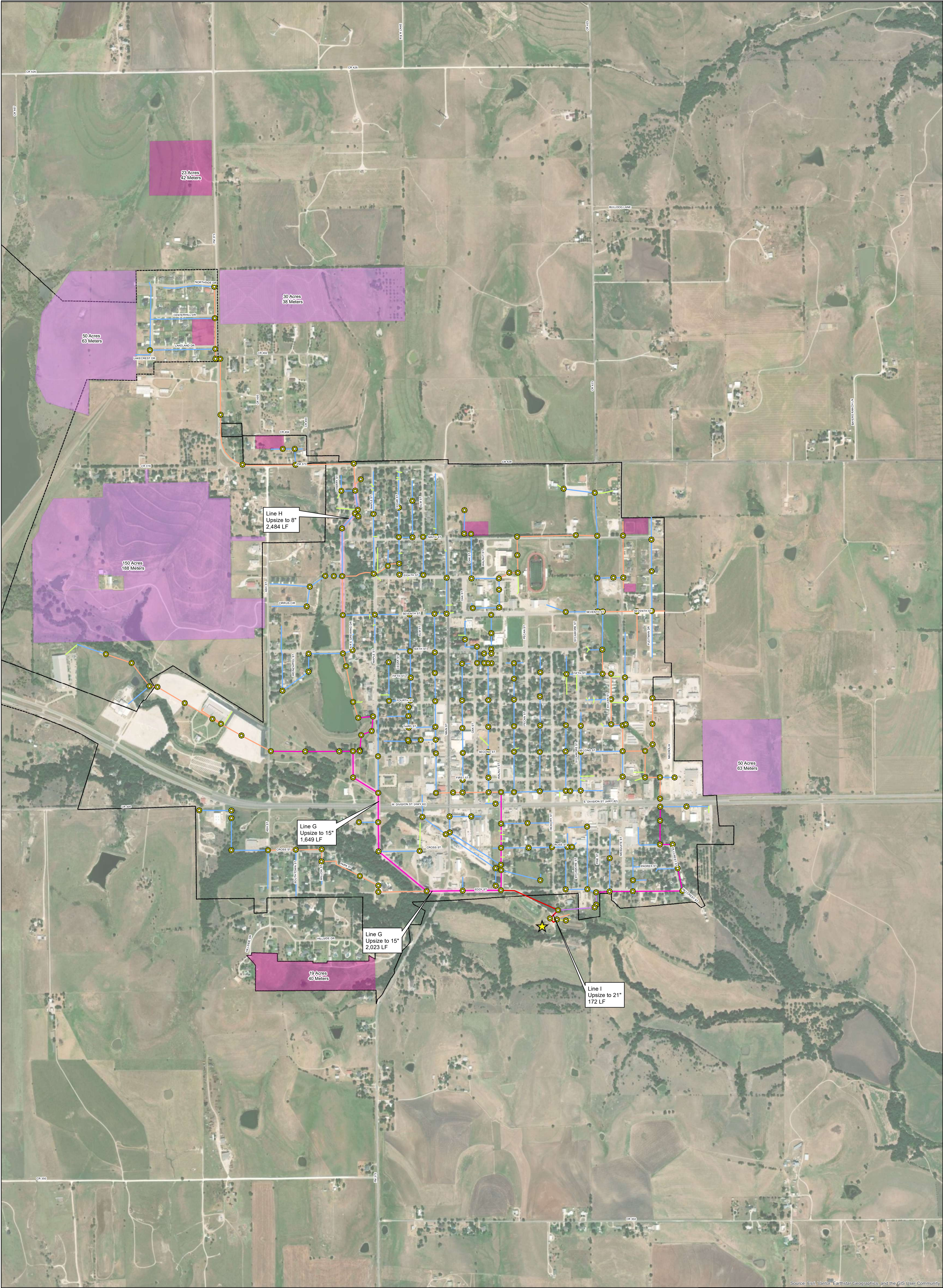
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EXHIBIT 13



Source: Esri, Vector, Earthstar Geographics, and the GIS User Community

Legend

Sewer Lines

10"

12"

15"

18"

4"

6"

8"

Manhole

Wastewater Treatment Plant

Recommend Projects

Anticipated Development

Future Development

Muenster City Limits

N

0

600

1,200

Feet

Future Development
Sanitary Sewer Improvements
2026 Capital Improvements Plan
Muenster, Texas

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EXHIBIT 14

Storm Drainage System Study

Storm Drainage Inventory

A. Existing Drainage Facilities

Cities rely on their drainage system to help mitigate property damage from flooding during rainfall events. As such, it is imperative that a city's existing drainage system is properly sized and maintained. A pedestrian and vehicular survey of the City was conducted to identify drainage courses and existing drainage facilities. These existing drainage facilities included roadway culverts and concrete drainage channels. Structures affecting main drainageways and patterns are included in this inventory; individual driveway culverts are not. **Exhibit 15** and the associated table depict the existing drainage system and information collected during the survey.

Storm Drainage Analysis

A. Introduction

Soils in Muenster range from moderately permeable loams to clay-rich soils with low infiltration capacity. Loamy soils generally allow rainfall to infiltrate into the ground more readily, reducing surface runoff and lessening demands on the drainage system. Clay soils, on the other hand, tend to have very slow infiltration rates due to their dense structure and the presence of restrictive layers such as caliche. As a result, rainfall is more likely to become surface runoff, increasing the volume and rate of stormwater conveyed through ditches, culverts, channels, and storm sewer systems. The United States Department of Agriculture Hydrologic Soil Group Survey suggests that the majority of soils underlying the City have a "very slow" infiltration rate with high runoff potential, making effective stormwater conveyance an important consideration in drainage system design.

Average rainfall in Muenster is approximately 38 inches per year, with the wettest months typically being May and June, with approximately 5.0 inches and 4.2 inches of rainfall, respectively. The driest months are typically January and December, with approximately 1.8 and 2.5 inches of rainfall, respectively. According to the "Rainfall Frequency Atlas of the United States," the 10-year, 24-hour rainfall would be 5.8 inches and the 100-year, 24-hour rainfall 9.4 inches. The climate in the Muenster area is humid sub-tropical, with hot summers and surges of cooler continental air. These cooler surges are associated with frequent thunderstorms, with about 30 to 60 of these occurring annually. On average, the City will encounter a rainfall event of 1-inch or greater on approximately 2 days per month.

B. Topography

The City of Muenster lies within the Brushy Elm Creek watershed, a tributary to the Elm Fork Trinity River. Brushy Elm Creek feeds Muenster Lake on the west side of town and then proceeds southeast along the southern boundary of the City. In general, the City drains from north to south. Brushy Elm Creek Tributaries 1 and 2 run north to south through the City before their confluences with Brushy Elm Creek south of Muenster. In general, the City drains from north to south with runoff conveyed through a series of overland drainage elements (e.g. curb and gutter, swales, flumes, etc.) before discharging into one of the three open channels mentioned above.

Topography is gently rolling throughout the area, with elevations ranging from approximately 940 to 1,115 feet above mean sea level (MSL). The highest elevations are located in the northern and southwestern portions of the city. Topography generally slopes toward Brushy Elm Creek.

Depth to bedrock varies, but can be as shallow as 3 to 4 feet, and could be an impediment to construction. The soils are considered low to moderately erosive, and terrain is generally flat with isolated gently rolling areas.

C. Development of the Community

Stormwater runoff is conveyed via curb and gutter, vegetated swales, open channels, and the TxDOT stormwater collection system. These drainage features direct runoff to two primary tributaries that traverse the City, providing the principal surface water conveyance network before discharging downstream.

As Muenster continues to grow and develop, additional impervious surfaces such as rooftops, parking lots, and roadways will increase stormwater runoff volumes and peak flow rates. Because runoff from higher elevations in the northern and southwestern portions of the City must be conveyed through developed areas before reaching Brushy Elm Creek, future development should account for the capacity of existing drainage infrastructure and downstream conveyance systems. The City should remain mindful of existing drainage deficiencies and incorporate appropriate stormwater management practices to ensure that future growth does not adversely impact drainage conditions or increase flood risk within the community.

D. Analysis

Muenster's existing storm drainage system consists primarily of surface conveyance facilities located within roadway rights-of-way, including vegetated swales, gutter systems, and culverts where surface runoff crosses roadways. The drainage analysis conducted as part of this study focused on the City's channel crossings and associated drainage features that convey runoff through the community. While other drainage infrastructure exists within the study area, it was not included in the analysis.

The City has implemented improvements on an as-needed basis to address localized drainage concerns. Field observations and drainage analyses indicate that numerous existing culverts and drainage channels throughout the City are undersized for the drainage areas they serve. These conditions accelerate deterioration of roadway pavement and subgrade materials, increase maintenance requirements, and contribute to localized flooding concerns throughout the City.

E. Runoff Analysis

Following completion of the existing drainage inventory, all channel crossings were evaluated in greater detail (*Exhibit 15*). Contributing drainage areas for each culvert were delineated. The analysis incorporated existing topography, land use, soil conditions, impervious cover, drainage area characteristics, and a 25-year design storm to estimate peak runoff rates for each drainage area.

Once peak runoff rates were established, the hydraulic capacity of each existing culvert was evaluated using Manning's Equation. A longitudinal slope of 1 percent was assumed for all culverts. Existing culvert capacities were then compared to the estimated peak runoff rates to

identify locations where drainage infrastructure is unable to adequately convey stormwater runoff during the design storm. Where deficiencies were identified, proposed culvert improvements were developed to provide sufficient conveyance capacity for the design storm events. *Exhibit 16* depicts the culverts identified for upsizing and their proposed sizes.

F. Drainage Problems

The primary drainage issue facing Muenster is the presence of undersized roadway culverts throughout the community. A secondary concern is the limited storm sewer infrastructure and the lack of storm sewer inlets in portions of the City, which restricts the efficient collection and conveyance of stormwater runoff. Together, these deficiencies cause stormwater runoff to leave established drainage channels and follow less desirable flow paths through the City, including along roadways and across private property. These conditions contribute to accelerated deterioration of roadway pavement, base, and subgrade materials and may result in property damage. In addition, runoff flowing along unintended flow paths, inadequate drainage facilities can restrict the City's ability to convey stormwater during significant rainfall events. When drainage systems lack sufficient capacity, stormwater may pond in streets, yards, and potentially even structures, increasing the risk of localized flooding. Undersized or poorly maintained drainage facilities may also impede emergency vehicle access during heavy rainfall events by causing roadway overtopping or flooding at critical crossings.

Nineteen roadway culverts were identified during the existing conditions drainage inventory. Of those, eleven were determined to be undersized and in need of improvement (*Exhibit 16*).

Storm Drainage Plan

A. Use of the Plan

The purpose of this Storm Drainage Plan is to analyze the existing storm drainage structures and present an improvements plan for the replacement of deteriorated and undersized drainage structures within the City. The plan is intended to provide the City with a list of existing culverts and improvement recommendations as well as be a starting point for review of future subdivisions and developments in the community. It is not, however, intended to be the final word with respect to drainage facilities design within future developments. Rather, it should be supplemented by detailed engineering studies for each proposed development. The City should strongly consider requiring all future developments to construct detention ponds to ensure post-development runoff flows do not exceed pre-development flows.

B. Goals and Objectives

Goal: To provide relief to flood prone areas thus eliminating potential hazards to the public and/or property damage.

Objectives:

1. Adopt and enforce subdivision regulations which mandate adequate drainage facilities within new developments that have been designed by a registered Professional Engineer in the state of Texas;
2. Maintain current maintenance programs for existing culverts to maximize their efficiency; and

3. Implement the improvements recommended in this study.

C. Recommendations

Certain limitations were imposed in developing our recommendations:

1. All pipe diameter recommendations are based upon HDPE pipe with a smooth interior wall. If CMP is installed, the diameter should generally be increased one size to account for the turbulence due to the corrugations. However, CMP is prone to rusting over time, unlike HDPE pipe.
2. NOTE: IT IS REQUIRED TO INSTALL ALL PROPOSED CULVERTS AT A MINIMUM 1 PERCENT SLOPE UNLESS OTHERWISE SPECIFIED IN ORDER TO HANDLE THE CALCULATED FLOWS.
3. Twelve inches is the minimum culvert diameter recommended – smaller size culverts are unduly prone to plugging.
4. Where existing CMP culverts are determined to be deficient, this report proposes replacing the existing culvert with an HDPE culvert. However, this is a high-level analysis for budgeting purposes. Final size, material, and configuration of the proposed culverts should be optimized during design.

Results of the analysis (i.e. proposed culvert sizes) are shown in **Exhibit 16** and associated table. If the City chooses to replace roadway culverts outside of a recommended street improvement project (**Tables 6-8**), the estimated cost of the proposed culverts according to their size is shown in **Table 19**.

Table 19 – Proposed Culvert Pricing

Size of HDPE Culvert	Unit Price per LF
24"	\$596.00
36"	\$699.00
42"	\$744.00
48"	\$789.00
60"	\$825.00

Culverts determined to have a reduced capacity either due to silt, vegetation, and/or damage should be cleared and/or replaced. It is strongly recommended that whenever roadway culvert improvements are made, the associated drainage conveyance features are evaluated to ensure they are properly sized. In addition, if the City plans on roadway improvements for a certain street or block, it would be an ideal time to also make any necessary drainage improvements for that area. All recommended street improvements listed in **Tables 6** through **8** include the costs associated with improving channel crossings and constructing storm sewer facilities.

This study identifies existing drainage deficiencies and provides recommendations for improving stormwater conveyance throughout the City. Currently problems do exist; not only can these problems cause damage to public and private property, but more importantly they can also endanger the public safety and welfare. Poor drainage contributes to deterioration of City streets and, in some locations, may contribute to inflow and infiltration within the wastewater collection

system. An unnecessary burden is placed on emergency vehicles and emergency personnel when flooding occurs because of inadequately constructed facilities. Finally, improper drainage can impact the value of adjacent lands.

The City of Muenster should consider developing and adopting drainage design construction standards as part of their Subdivision Ordinance or other applicable regulations. Establishing formal drainage criteria would provide guidance for future development and help ensure that stormwater impacts are evaluated and appropriately addressed. Items to consider during the development of drainage requirements may include:

1. Detention requirements:
 - a. Detention can ensure post-development flows do not exceed pre-development flows.
 - b. Increased runoff from new developments can negatively impact areas downstream. Requiring detention ponds can drastically limit this downstream impact.
2. Downstream assessments:
 - a. Ensure new developments are not overwhelming existing areas downstream of the development.
 - b. This is particularly important when new development occurs within an area of the City that has already been developed or the new development is upstream of an area that has already been developed.
3. Storm drainage design standards:
 - a. Establish minimum design standards for storm drainage facilities, including curb and gutter, channel crossings, storm sewers and inlets, and other stormwater conveyance features.
 - b. State the required design storm event(s).
 - c. Requirements of the development's design engineer regarding stormwater runoff calculations.
4. Erosion control measures during construction:
 - a. Silt fence
 - b. Hay bales
 - c. Seeding/sodding

In summary, recommendations for the City of Muenster are as follows:

1. Develop and adopt drainage design requirements and update applicable ordinances to address stormwater management for future development.
2. Clean silted culverts and replace/repair damaged culverts.
3. Through annual budgeting, prioritize maintenance and improvements of existing drainage infrastructure, including channel crossings and other stormwater conveyance features, while evaluating the need for storm sewer improvements in select areas.
4. Implement and complete the upsizing of all identified deficient culverts. It is

recommended to begin making improvements downstream and then progress upstream so downstream culverts do not become overwhelmed.

Sources of Possible Funding

Traditionally, storm drainage has been funded through the general fund in Texas cities, with improvements to newly developed areas being funded by the developer. Where major capital projects were undertaken, general obligation bonds have been issued.

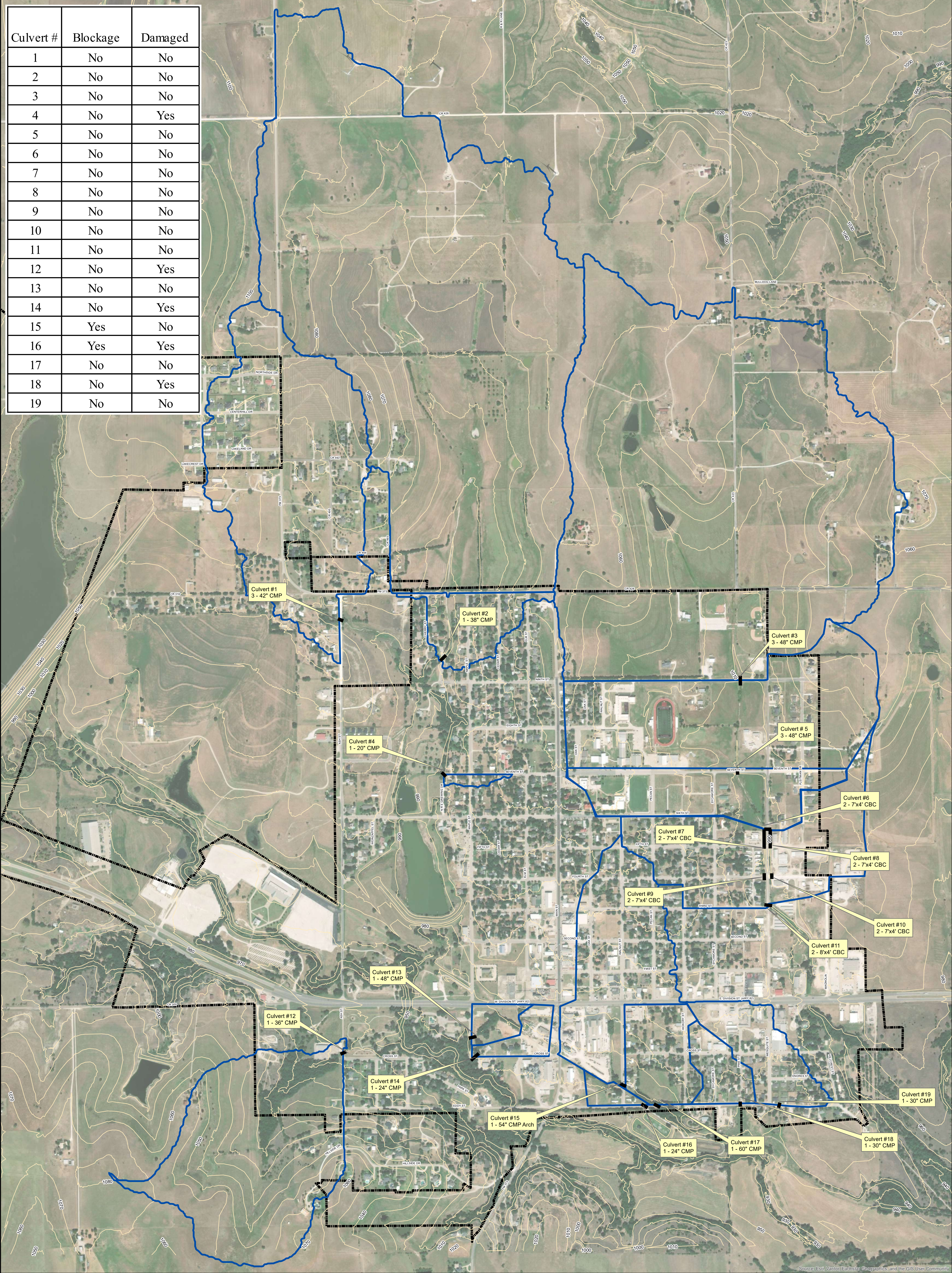
In September 1989, the Texas Legislature authorized municipalities to establish drainage utility systems and this authority was further refined in early 1991. Cities now have the authority to assess charges to the owner or occupant of benefitted property and to discontinue all utility service if drainage charges are unpaid. A stormwater utility fee is a monthly user fee designed to fund maintenance, best management practices, improvements to stormwater infrastructure, enhancements to water quality and mitigation for future flooding events and their impacts. This fee is similar to other utility fees for water, sewer, and garbage. Implementing a transparent, self-sustaining stormwater utility fee is critical today as leveraging project money from the City's general fund becomes more difficult. The user-fee system can thus provide a stable revenue stream for addressing long-term comprehensive needs and offer greater flexibility in financing options for stormwater improvements.

Typically, to develop a storm water utility fee, the City would adopt a storm water ordinance. This ordinance would establish duties within the existing departmental structure, establish a legal operating framework and establish the stormwater utility fees. This step would be supported by public hearings and an education effort to explain the need and the advantages of this approach. Institutional and technical coordination and public opinion are all visible, effective, fundamental parts of any viable stormwater management program. A citizen's advisory council may be helpful in the early stages to broaden community support, particularly since a vote of the citizens is required before any such fee can be implemented. After the ordinance is adopted and the drainage utility system is established, the City begins phasing out general fund expenditures for storm drainage purposes. These functions are then financed through the established stormwater utility fee and perhaps, a developer contribution.

A disadvantage to this approach, however, is that planning, and engineering expertise must be provided, as well as staff to manage and administer billing of the fees.

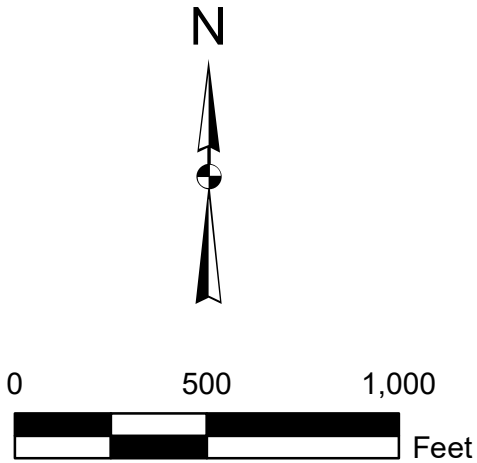
In the case of Muenster, the projected funding required for drainage improvements is minimal when compared with the costs of recommended street repairs detailed elsewhere in this comprehensive plan. In lieu of more traditional means of fund raising, such as selling bonds, we recommend that drainage improvements be performed in conjunction with proposed street improvements, or, that general maintenance funds be used to upgrade drainage over a period of time before the street improvements are made in a given area.

Culvert #	Blockage	Damaged
1	No	No
2	No	No
3	No	No
4	No	Yes
5	No	No
6	No	No
7	No	No
8	No	No
9	No	No
10	No	No
11	No	No
12	No	Yes
13	No	No
14	No	Yes
15	Yes	No
16	Yes	Yes
17	No	No
18	No	Yes
19	No	No



Legend

- Drainage Areas
- Contours
- City Limits

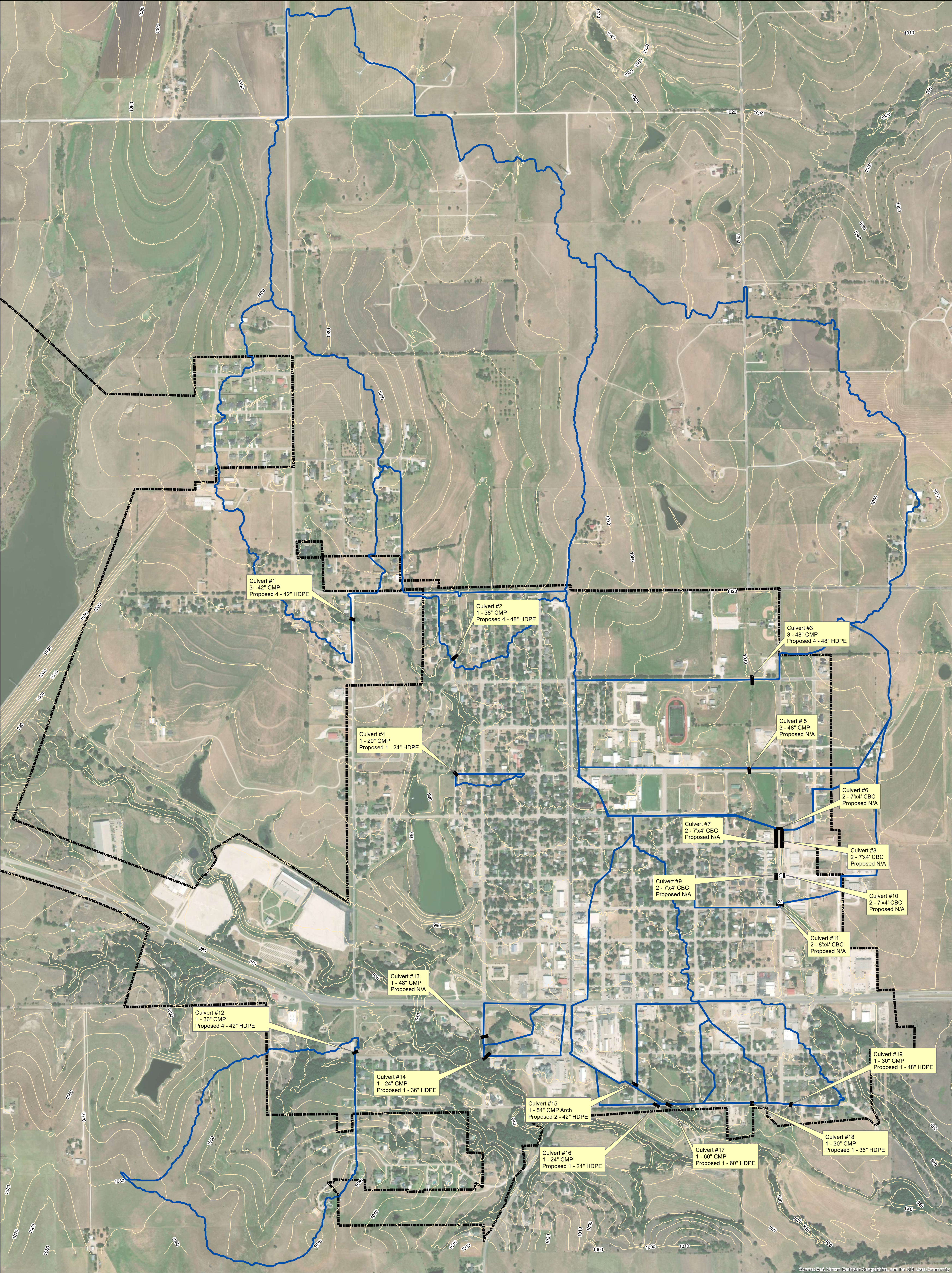


Existing Channel Crossings

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Muenster, Texas**



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Legend

-  Drainage Areas
-  Contours
-  City Limits

Proposed Channel Crossing Improvements

**2026 Capital Improvements Plan
Muenster, Texas**



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Impact Fees

Local government code §395.014(a)(1-7) spells out exactly what must be included in the Capital Improvements Plan (CIP). Items 1 and 2 have been covered in previous sections. Items 3 through 7 will be covered in the subsequent sections.

§395.001(5) defines Land Use Assumptions as follows: *includes a description of the service area and projections of the changes in land uses, densities, intensities, and population in the service area over at least a 10-year period.* Since projections for capital improvements and facility expansion cannot exceed 10 years, the Land Use Assumptions for this CIP will cover a 10-year period from 2026 to 2036. All capital improvements and facility expansions proposed below, will be based on the 2036 population projection and will be necessary in order to meet the Future Land Use Projections discussed in an earlier section of the CIP.

The Capital Improvements Advisory Committee identified seven areas they anticipate development over the next five years. These areas are depicted in **Exhibit 4**. The City also identified four areas they believed were primed for development over the next 10 years. These four areas are also depicted in **Exhibit 4**. The infrastructure improvements shown in **Exhibits 9, 12, 13, 14, 16, and 17** will be necessary to accommodate the projected growth over the next 10 years in the identified areas. The impact fees attributable to the 10-year development will be due to the projected growth as shown in **Table 20**.

Table 20 - Future (2036) Level of Usage

Description	Residential	Commercial	Industrial	Institutional	Public/Semi Public	Agricultural	Vacant	Lake	Total
2036 Population	2,355	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,355
2036 Meters	1,162	88	12	19	N/A	N/A	N/A	N/A	1,281
2036 (Acres)	946	208	63	63	455	3,380	32	621	5,768
Density (Meters/Acre)	1.23	0.42	0.19	0.30	N/A	N/A	N/A	N/A	0.22
% Meters by Land Use	90.71%	6.87%	0.94%	1.48%	N/A	N/A	N/A	N/A	100.00%

The proposed increase in land use areas is the difference between the Existing Level of Usage (**Table 2**) and the Future (2036) Level of Usage (**Table 20**) and is shown in **Table 21**. These areas have been determined with existing population and population projections, not based upon a constant density, and stay within the City's ETJ. Utilities (water or sewer) and streets can now be sized based upon expected flows and traffic derived from areas that are increased due to the new developments.

Table 21 - Increased Level of Usage (2026-2036)

Description	Residential	Commercial	Industrial	Institutional	Public/Semi Public	Agricultural	Vacant	Lake	Total	Increase
Population Increase	551	N/A	N/A	N/A	N/A	N/A	N/A	N/A	551	31%
Increased Meters	449	N/A	N/A	N/A	N/A	N/A	N/A	N/A	449	54%
Increased Area (Ac)	331.5	N/A	N/A	N/A	N/A	-325	-6.5	N/A	0	0%

The year 2036 total increase in number of meters is 449 meters. The total development cost will be evenly distributed among these new proposed meters to determine the impact fee per meter.

Calculated Impact Fee

The spreadsheets showing the calculations for the streets and drainage as well as the water and sewer system impact fees can be found in the Appendix and are summarized in **Table 22**, below.

Table 22 - Impact Fee Calculation Summary

	Capital Improvement Plan (\$)	2036 Projected New Meters	Calculated Impact Fee (\$)	Maximum Impact Fee (\$)
Water System	\$2,330,115.00	449	\$ 4,914.56	\$ 2,457.28
Sewer System	\$15,075,487.00	449	\$ 7,990.24	\$ 3,995.12
Streets & Drainage	\$52,018,227.12	449	\$ 8,248.69	\$ 4,124.35
Total Impact Fee	\$69,423,829.12	449	\$21,153.48	\$ 10,576.74

Local Government Code Chapter 395, §395.015 states that the impact fee per service unit may not exceed the amount determined in column four from **Table 22** above, less a credit for valorem taxes paid on the new development. The credit may be determined through calculation of the ad valorem tax, or by reducing the column four fee by one-half. This second approach is recommended for simplicity, resulting in the maximum impact fees shown in column five from **Table 22** above.

Service Unit Equivalent

This study is based upon growth in the number of standard ¾" meters, independent of land use. Thus, the service unit equivalent is a single ¾" meter. However, if it were necessary to supply a larger meter, say, for example, a shopping center, adjusting the fee for the increased size of meter would be justified. **Table 23** represents equivalent fees recommended for various meter sizes.

Table 23- Service Unit Equivalencies

Meter Size	Equivalency Factor	Water	Sewer	Streets & Drainage	Total
¾"	1.00	\$2,457.28	\$3,995.12	\$4,124.35	\$10,576.74
1"	1.67	\$4,103.65	\$6,671.85	\$6,887.66	\$17,663.16
1 ½"	3.33	\$8,182.74	\$13,303.74	\$13,734.07	\$35,220.55
2"	5.33	\$13,097.29	\$21,293.98	\$21,982.76	\$56,374.03
3"	10.00	\$24,572.78	\$39,951.18	\$41,243.46	\$105,767.42
4"	16.67	\$40,962.82	\$66,598.62	\$68,752.85	\$176,314.29
6"	33.33	\$81,901.08	\$133,157.28	\$137,464.45	\$352,522.81

Table 24 (Impact Fees in Other Cities), provides a reference point to compare the impact fee calculated herein with that of other cities.

Table 24 - Impact Fees in Other Cities

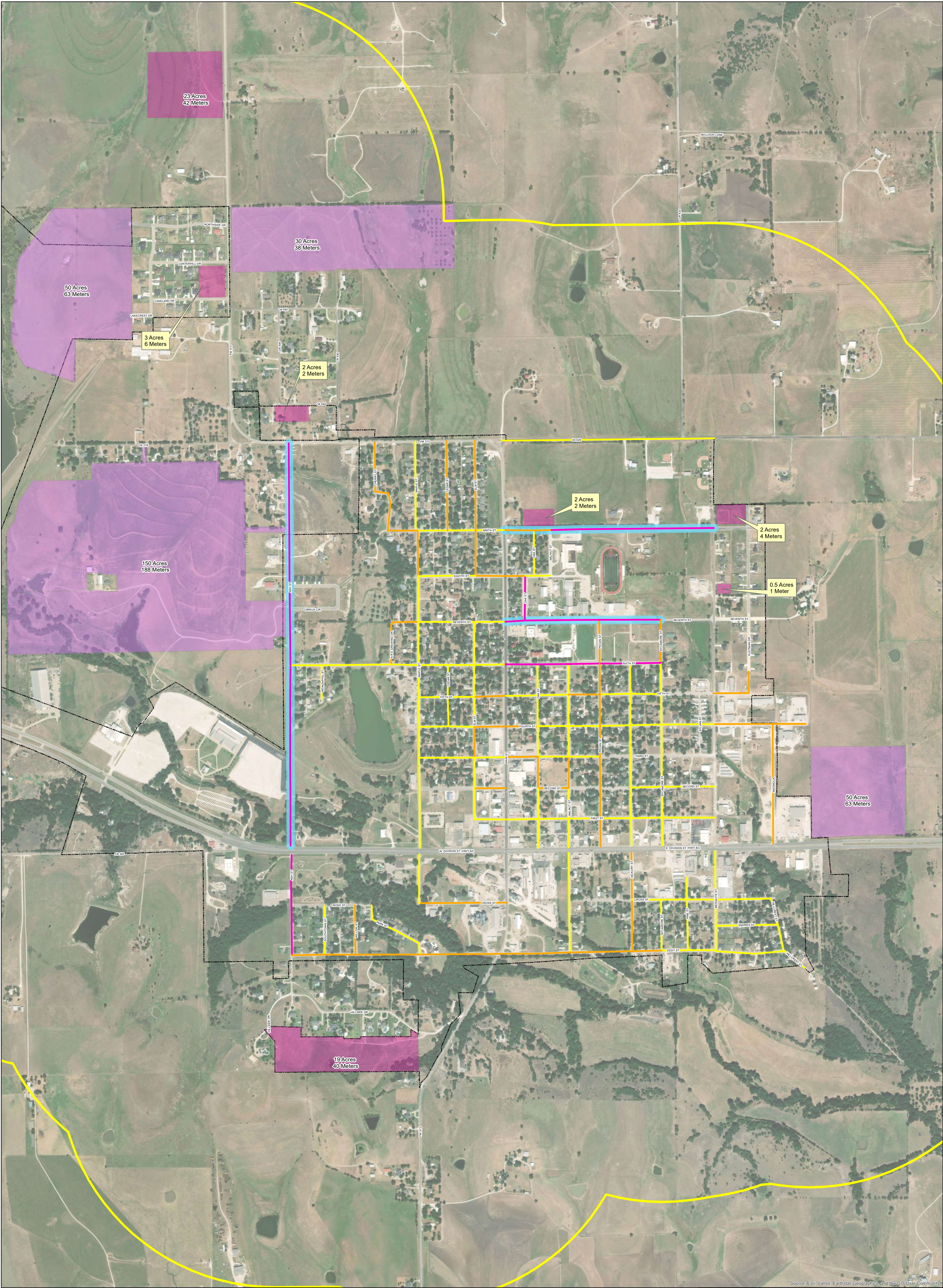
City	Year Fee Established	Population	Service Unit (meter)	Water Impact Fee	Sewer Impact Fee	Streets & Drainage Impact Fee	Total
Muenster *	2026	1,804	¾"	\$2,457.28	\$3,995.12	\$4,124.35	\$10,576.74
Allen	2022	111,620	⅝"	\$3,137.90	\$1,989.69	\$1,673.60	\$6,801.19
Aubrey	2022	8,267	⅝"	\$5,820.00	\$10,586.00	\$4,177.83	\$20,583.83
Celina	2021	43,317	¾"	\$2,750.00	\$3,250.00	\$18,359.00	\$24,359.00
Frisco	2021	225,007	1"	\$3,036.00	\$3,401.00	\$4,257.00	\$10,694.00
McKinney	2020	213,509	¾"	\$1,294.70	\$162.14	\$3,438.00	\$4,894.84
Gainesville	2026	17,394	⅝"	\$6,466.00	\$1,243.00	\$3,202.00	\$10,911.00
Sherman	2022	42,168	¾"	\$6,807.00	\$2,149.00	\$3,713.00	\$12,669.00
Denton	2025	152,350	¾"	\$11,442.00	\$14,107.00	\$3,673.00	\$29,222.00
Tioga	2023	1,583	¾"	\$1,764.93	\$2,524.34	\$2,542.91	\$6,832.18

* Proposed Impact Fees

Annual Reporting

Chapter 395.082 of the Local Government Code requires that a City imposing impact fees will submit a written certificate annually to the Attorney General, verifying compliance with Chapter 395. Wording for this verification should be prepared by the City Attorney.

In addition, the Capital Improvements Advisory Committee is to monitor and evaluate implementation of the Capital Improvements Plan and advise the Council of the need to update or revise the Land Use assumptions, Capital Improvements Plan, and Impact Fee on an annual basis.



Source: Esri, Vector, Earthstar Geographics, and the GIS User Community

Legend			
CIP, Priority		Anticipated Development	
1		Future Development	
2		Extraterritorial Jurisdiction	
3		Muenster City Limits	
CIP Improvement Streets			

0 500 1,000 Feet

North Arrow

Street Projects Capital Improvements		
2026 Capital Improvements Plan Muenster, Texas		
HAYTER ENGINEERING Practical Infrastructure Solutions	Hayter Engineering, Inc. 4445 SE Loop 286 Paris TX 75460 www.haytereng.com TxEng F-315 TxSurv F-10028600	
June 2026	PROJECT NO.:168006	EXHIBIT 17