



EXECUTIVE SUMMARY

This study was performed to update the City of Montgomery’s (the City) Water and Wastewater System Impact Fees. Water and wastewater system improvements necessary to serve the 10-year (2033) build-out and ultimate system needs were evaluated. Based on the City’s 10-year growth projections and the associated demand (consumption) values, 3,571 additional service units will need water and wastewater service by the year 2033. Based on the additional service units and the recoverable capital improvements plans, the City may assess a maximum of \$3,988.00 per ESFC for water and sanitary sewer combined.

UPDATES:

1. We have updated the timing of projects based on upcoming and active developments within the City.
2. Updated estimated project costs based on current pricing.
3. Total costs for Water Improvements is **\$18,860,506**.
4. Total costs for Wastewater Improvements is **\$21,502,000**.
5. Major Changes/Project Updates:
 - a. Water Plant No. 4
 - b. Water Plant No. 2 Improvements
 - c. Town Creek Wastewater Treatment Plant Expansion (.3MGD Upsizing)
 - d. Wastewater Treatment Plant Expansion to Ultimate (Town Creek to 0.6 MGD or Stewart Creek to .8 MGD)
 - e. Water Plant No. 3 Improvements (Completed)
 - f. Downtown Waterline Replacement PH I (Completed)

Meter Size	Existing Maximum Assessable Water Fee (\$/ESFC)	Proposed Maximum Assessable Water Fee (\$/ESFC)	Existing Maximum Assessable Wastewater Fee (\$/ESFC)	Proposed Maximum Assessable Wastewater Fee (\$/ESFC)	Existing Maximum Assessable Fee (\$/ESFC)	Proposed Maximum Assessable Fee (\$/ESFC)	Increase to Maximum Assessable Fee (\$/ESFC)	Increase to Maximum Assessable Fee (%/ESFC)
5/8"	1,126	2,054	2,513	1,934	3,639	3,988	349	9%
3/4"	1,881	3,430	4,198	3,231	6,079	6,660	581	9%
1"	3,001	5,483	6,711	5,165	9,712	10,648	936	9%
1 1/2"	9,006	16,429	20,103	15,476	29,109	31,905	2,796	9%
2"	12,755	23,267	28,471	21,918	41,226	45,185	3,959	9%
3"	26,264	47,910	58,626	45,131	84,890	93,042	8,152	9%
4"	44,942	82,144	100,517	77,379	145,459	159,523	14,064	9%
6"	90,064	164,288	201,035	154,758	291,099	319,046	27,947	9%
8"	135,096	246,432	301,552	232,137	436,648	478,569	41,921	9%

City of Montgomery, Texas
Water and Wastewater Impact Fee Analysis 2023
Update
(DRAFT)

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EXECUTIVE SUMMARY

This study was performed to update the City of Montgomery's (the City) Water and Wastewater System Impact Fees. Water and wastewater system analyses and the Water and Wastewater System Master Plans are important tools for facilitating orderly growth of the water and wastewater systems and for providing adequate facilities that promote economic development in the City of Montgomery. The implementation of impact fees shifts the financial burden of new infrastructure to the developers and new users, and away from the existing customer base.

Elements of the water and wastewater systems, including storage facilities, pumping facilities, treatment facilities, and the distribution and collection network itself, were evaluated against industry standards as outlined in the Design Criteria section of this report.

Water and wastewater system improvements necessary to serve the 10-year (2033) build-out and ultimate system needs were evaluated. Typically, infrastructure improvements are sized beyond the 10-year requirements; however, Texas' impact fee law (Chapter 395) only allows recovery of costs to serve the 10-year planning period. For example, the projected cost to serve the ultimate water and wastewater system needs is \$18,860,506 of which, \$21,502,000 is projected to be eligible for recovery through impact fees within the next 10 years. A portion of the remainder can be assessed as the planning window extends beyond 2033 and as the impact fees are updated in the future.

The impact fee law defines a service unit as follows: "Service Unit means a standardized measure of consumption attributable to an individual unit of development calculated in accordance with generally accepted engineering or planning standards, and based on historical data and trends applicable to the political subdivision in which the individual unit of development is located during the previous 10 years." Therefore, the City of Montgomery defines a *service unit* as an Equivalent Single-Family Connection (ESFC) that consumes an amount of water requiring a standard 5/8" meter. For a development that requires a different size meter, a service unit equivalent is established at a multiplier based on its capacity with respect to the 5/8" meter. The equivalency factor and associated impact fee by meter size is shown in **Table 1**.

Based on the City's 10-year growth projections and the associated demand (consumption) values, **3,571** additional service units will need water and wastewater service by the year 2033. Based on the additional service units and the recoverable capital improvements plans, the City may assess a maximum of **\$3,988.00** per ESFC.

Table 1 – Proposed Maximum Assessable Impact Fee for Commonly Used Meters

Meter Size	Maximum Flow (GPM)	Equivalent Single-Family Connection (ESFC)	Maximum Assessable Water Fee (\$/ESFC)	Maximum Assessable Wastewater Fee (\$/ESFC)	Maximum Assessable Fee (\$/ESFC)
5/8"	15	1.00	2,054	1,934	3,988
3/4"	25	1.67	3,430	3,231	6,660
1"	40	2.67	5,483	5,165	10,648
1 1/2"	120	8.00	16,429	15,476	31,905
2"	170	11.33	23,267	21,918	45,185
3"	350	23.33	47,910	45,131	93,042
4"	600	40.00	82,144	77,379	159,523
6"	1,200	80.00	164,288	154,758	319,046
8"	1,800	120.00	246,432	232,137	478,569

Table 2 - Proposed change in Maximum Assessable Impact Fee for Commonly Used Meters

Meter Size	Maximum Flow (GPM)	Equivalent Single-Family Connection (ESFC)	Increase to Maximum Assessable Water Fee (\$/ESFC)	Increase to Maximum Assessable Wastewater Fee (\$/ESFC)	Increase to Maximum Assessable Fee (\$/ESFC)
5/8"	15	1.00	928	(579)	349
3/4"	25	1.67	1,549	(967)	581
1"	40	2.67	2,482	(1,546)	936
1 1/2"	120	8.00	7,423	(4,627)	2,796
2"	170	11.33	10,512	(6,553)	3,959
3"	350	23.33	21,646	(13,495)	8,152
4"	600	40.00	37,202	(23,138)	14,064
6"	1,200	80.00	74,224	(46,277)	27,947
8"	1,800	120.00	111,336	(69,415)	41,921

1. INTRODUCTION

Ward, Getz & Associates, PLLC has served as the City's Engineer since May 2021 and was recently authorized to prepare a report analyzing and updating the impact fees for the water and wastewater system improvements required to serve new development. These fees are developed and updated in accordance with Chapter 395 of the Texas Local Government Code (impact fees), which requires a city imposing impact fees to update the land-use assumptions and capital improvements plan upon which the fees are calculated at a minimum of every five (5) years.

The purpose of this report is to satisfy the requirements of the law and provide the City with an updated impact fee capital improvements plan and associated updated impact fees.

For convenience and reference, the following is excerpted from Chapter 395.014 of the code:

- A. The political subdivision shall use qualified professionals to prepare the capital improvements plan and to calculate the impact fee. The capital improvements plan must contain specific enumeration of the following items:*
- 1) a description of the existing capital improvements within the service area and the costs to upgrade, update, improve, expand, or replace the improvements to meet existing needs and usage and stricter safety, efficiency, environmental, or regulatory standards, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;*
 - 2) an analysis of the total capacity, the level of current usage, and commitments for usage of capacity of the existing capital improvements, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;*
 - 3) a description of all or the parts of the capital improvements or facility expansions and their costs necessitated by and attributable to new development in the service area based on the approved land use assumptions, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;*
 - 4) a definitive table establishing the specific level or quantity of use, consumption, generation, or discharge of a service unit for each category of capital improvements or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including but not limited to residential, commercial, and industrial;*
 - 5) the total number of projected service units necessitated by and attributable to new development within the service area based on the approved land use assumptions and calculated in accordance with generally accepted engineering or planning criteria;*
 - 6) the projected demand for capital improvements or facility expansions required by new service units projected over a reasonable period of time, not to exceed 10 years; and*

7) *a plan for awarding:*

- *a credit for the portion of ad valorem tax and utility service revenues generated by new service unit during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or*
- *in the alternative, a credit equal to 50 percent of the total project cost of implementing the capital improvements plan.*

The update process was comprised of four tasks:

- **LAND USE ASSUMPTIONS**

This task involved reviewing the City's current growth, land planning and projected development for the next 10 years.

- **EVALUATION OF THE WATER AND WASTEWATER SYSTEM**

This task involved reviewing the current water and wastewater system, existing capacities and usage, projected growth and demand, and further analyzing historical data provided by the City's contract utility operator. The demand projections were then used to determine the additional service units the City is expected to experience.

- **IMPACT FEE CAPITAL IMPROVEMENTS PLAN**

This task involved evaluation of the water and wastewater capital improvement projects depicted in the City's 15-year Capital Improvement Plan and discussion with City staff to identify projects that will be built in the 10-year planning window and meet the design criteria.

- **IMPACT FEE ANALYSIS AND REPORT**

This task included calculating the additional service units, service unit equivalents, and credit reduction. These values were then used to determine the impact fee per service unit and the maximum assessable impact fee by meter size.

2. WATER SYSTEM DESIGN CRITERIA

WATER TRANSMISSION LINES

Water lines within the system shall be sized to maintain the following pressure requirements:

- Peak hour demand with a minimum pressure of 35 psi;
- Peak day demand plus fire flow with a minimum pressure of 20 psi.

STORAGE TANKS

The Texas Commission on Environmental Quality (TCEQ) and the State Board of Insurance (SBI) have established criteria for ground and elevated storage. These criteria address volume and height requirements only. The layout of the distribution system, location of the storage facilities, and the interaction with the high service and booster pumps affect the amount of storage necessary for the most efficient and reliable operation of the system.

1) GROUND STORAGE

Ground storage serves two functions:

- Equalization for differing feed rates between the water supply and pumping to the system; and
- Emergency capacity in the event of temporary loss of water supply.

Generally, ground storage facilities are located at water supply points or at each pump station within the water distribution system. Suggested storage capacities are established based on several criteria. There are specific requirements of the TCEQ. Which are detailed later in this section. Although ground and elevated storage facilities perform separate functions within the system, both are aimed at decreasing the impact of demand fluctuations. Their capacities are established based on knowledge of how demand varies seasonally and daily.

2) ELEVATED STORAGE

Elevated storage serves three purposes:

- Functionally, elevated storage equalizes the pumping rate to compensate for daily variations in demand and to maintain a constant pumping rate (usually referred to as operational storage), or a pumping rate that conforms to the requirements of the electrical rate structure.
- Provides pressure maintenance and protection against surges created by instantaneous demand, such as fire flow and main breaks, and instantaneous change in supply, such as pumps turning on and off.

- Maintains a reserve capacity for fire protection and pressure maintenance in case of power failure to one or more pump stations. Sufficient storage should be maintained to provide four hours of fire flow demand during a loss of power to the pump station.

Suggested storage capacities are established by the TCEQ. Adequate operational storage is established by determining the required volume to equalize daily fluctuations in flow during the maximum day demand, plus the reserve volume required for fire protection.

The minimum requirements for storage, according to Chapter 290 of the Texas Administrative Code, are as follows:

- Total Storage - Equal to 200 gallons per connection.
- Elevated Storage - Equal to 100 gallons per connection for systems with more than 2,500 physical connections; or
- Elevated Storage - Equal to 200 gallons per connection for a firm pumping capacity reduction from 2.0 gallons per connection to 0.6 gallons per connection.

3) PUMP STATIONS

Pumping capacities must provide the maximum demand, or the peak hour demand required by the water system, or the suggested capacities established by the TCEQ. Pumping capacity should supply the maximum demand with sufficient redundancy to allow for the largest pump at the pump station to be out of service. This is known as firm pumping capacity.

Each pump station or pressure plane must have two or more pumps that have a total capacity of 2.0 gallons per minute per connection or have a total capacity of at least 1,000 gallons per minute and the ability to meet peak hour demand with the largest pump out of service, whichever is less. If the system provides elevated storage capacity of at least 200 gallons per connection, two service pumps with a minimum combined capacity of 0.6 gpm per connection are required.

4) WATER DEMAND

The criteria used for projecting the water demands for the water system were derived from historical data provided by the City’s contract utility operator and anticipated water usage provided by developers in the City. Table 3 shows the projected average day demand by land use type.

Table 3 - Water Demand by Land Use Type

Land Use Type	Demand gpd/ac	Demand gpd/dwelling unit
Single-Family Residential	N/A	225
Commercial	2,000	N/A
Multi-family Residential	N/A	225

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3. WASTEWATER SYSTEM DESIGN CRITERIA

WASTEWATER COLLECTION LINES

Wastewater collection lines shall be sized to maintain the following requirements:

- Capacity for four times the Average Daily Flow (ADF);
- Minimum velocity of 2.0 feet per second.

LIFT STATIONS

The TCEQ has established criteria for the design of lift stations. These criteria address location, volume, controls, flood protection, and ventilation. In addition to meeting the capacity requirements, lift stations will be designed with a six-hour run time to sustain the ADF, and allow a 4x peaking factor.

FORCE MAINS

Force main lines shall be sized to maintain the following requirements:

- Capacity for maximum pumping capacity of the lift station;
- Maintain velocity between 3.0 and 7.0 feet per second.

WASTEWATER TREATMENT PLANT (WWTPs)

The criteria used for designing WWTPs is stated in TCEQ Chapter 217. The wastewater demands for the system were derived from historical data provided by the City's contract utility operator and anticipated wastewater demand provided by developers in the City. **Table 4** shows the projected average day demand by land use type.

Table 4 - Wastewater Demand by Land Use Type

Land Use Type	Demand gpd/ac	Demand gpd/dwelling unit
Single Family Residential	N/A	150
Commercial	1,600	N/A
Multi-Family Residential	N/A	150

4. WATER IMPACT FEE CAPITAL IMPROVEMENTS PLAN

The City commissioned Jones|Carter to complete a Water System Analysis and Master Plan utilizing Bentley WaterGEMS (v8i) in 2015. The purpose of the water master plan was to provide the City with a strategy for upgrading and expanding its water distribution system to accommodate future growth and for addressing existing system deficiencies.

Following the completion of the analysis and master plan, the City has consistently and closely monitored growth trends and projected demands to create an updated plan that is suitable for the City's current size and reasonably anticipated growth.

The following sixteen (16) projects are determined to be partially or entirely eligible for recoverable cost through impact fees over the next 10 years. The total cost of these projects is **\$18,860,506**. The projected total recoverable cost through impact fees is **\$14,668,000**. After the credit calculation and 50% reduction is completed, **\$7,334,000** is recoverable through impact fees to serve the 10-year system needs.

PROJECT DESCRIPTIONS (15)

- 1. WATER PLANT No. 4**
The design of Water Plant No. 4 with a 1000-gpm Jasper water well, booster pumps, a 500,000-gallon elevated storage tank, and general sitework.
Estimated Project Cost **\$6,573,000**
- 2. WATER PLANT No. 2 IMPROVEMENTS**
Recoat tanks and pumps, generator addition, and replace and upsize the well rework to improve water quality and extend the life of existing facilities.
Estimated Project Cost **\$1,232,000**
- 3. ABNER LANE WATERLINE EXTENSION**
Closes loop from Lone Star Parkway to Estates of Lake Creek Village at Abner Lane.
Estimated Project Cost **\$240,000**
- 4. CB STEWART AND BUFFALO SPRINGS WATERLINE EXTENSION (12")**
Closes loops from Estates of Lake Creek Village to SH 105 via CB Stewart Dr. and Buffalo Springs Dr.
Estimated Project Cost **\$678,000**
- 5. DOWNTOWN WATERLINE REPLACEMENT PH II (POND TO PRAIRIE)**
Upsize the existing 8" waterline to a 12" waterline along SH 105 from Pond Street to Prairie Street.
Estimated Project Cost **\$559,000**
- 6. EAST LONE STAR PARKWAY WATERLINE EXTENSION**
Closes the loop from Town Creek Crossing Section 1 to FM 149
Estimated Project Cost **\$740,000**

- 7. HOUSTON ST. WATERLINE REPLACEMENT**
Upsize the existing 8" waterline to a 12" waterline from SH 105 to Water Plant No. 2.
Estimated Project Cost **\$463,000**
- 8. OLD PLANTERSVILLE RD. WATERLINE EXTENSION**
Install 12" waterline from Womack Cemetery W to SH-105 along Old Plantersville Rd and Old Dobbin Plantersville Rd.
Estimated Project Cost **\$980,000**
- 9. POND STREET WATERLINE REPLACEMENT (SH 105 TO MONTGOMERY ELEMENTARY)**
Upsize the existing 8" waterline to a 12" waterline from SH 105 to Montgomery Elementary.
Estimated Project Cost **\$1,089,000**
- 10. SH-105 WATERLINE EXTENSION**
Extension of existing 12" waterline from Buffalo Springs to CB Stewart, via SH-105.
Estimated Project Cost **\$425,000**
- 11. WEST LONE STAR PARKWAY WATERLINE (12")**
Closing the loop from Hills of Town Creek subdivision to the existing 12" line along Lone Star Parkway east of Town creek.
Estimated Project Cost **\$1,302,000**
- 12. McCOWN AND CAROLINE WATERLINE REPLACEMENT**
Replace existing 4" and 6" waterlines with an 8" waterline east of FM 149.
Estimated Project Cost **\$370,000**
- 13. OLD PLANTERSVILLE ROAD WATERLINE REPLACEMENT (SH 105 TO WOMACK CEMETERY)**
Upsize the existing 8" waterline to a 12" waterline along Old Plantersville Rd from SH 105 to Womack Cemetery.
Estimated Project Cost **\$1,988,000**
- 14. WATER PLANT No. 3 EXPANSION**
Booster pump addition and misc. improvements.
Estimated Project Cost **\$120,000**
- 15. WATER PLANT No. 3 IMPROVEMENTS (COMPLETED)**
210,000-gallon GST addition, 600 gpm cooling tower, generator addition, and misc. site work.
Estimated Project Cost **\$1,001,622**
- 16. DOWNTOWN WATERLINE REPLACEMENT PH I (COMPLETED)**
Upsize the existing 4" and 6" waterlines to a 12" waterline along SH-105, Pond St. and FM 149 to Berkeley Dr.
Estimated Project Cost **\$1,099,884**

5. WASTEWATER IMPACT FEE CAPITAL IMPROVEMENTS PLAN

In 2015 the City commissioned Jones|Carter to complete a Wastewater System Analysis and Master Plan. The purpose of the wastewater master plan was to provide the City with a strategy for upgrading and expanding its wastewater collection and treatment systems to accommodate future growth and for addressing existing system deficiencies.

Following the completion of the analysis and master plan, the City has consistently and closely monitored growth trends and projected flows to create an updated plan that is suitable for the City's current size and reasonably anticipated growth. Within the next 10 years we are anticipating improvements to the City's lift stations, however we are assuming that any major improvements to any single lift station triggered by development would be paid by the developer and would be identified at the time of feasibility.

The following ten (10) wastewater projects are determined eligible for recoverable cost through impact fee over the next 10 years. The total cost of these projects is **\$36,986,000**. The projected total recoverable through impact fees is **\$34,402,000**. After the credit calculation and 50% reduction is completed, **\$17,201,000** is recoverable through impact fees serving the 10-year system needs.

PROJECT DESCRIPTIONS (10)

- 1. TOWN CREEK WWTP IMPROVEMENTS**
LS2 and 0.4 MGD WWTP (Town Creek).
Estimated Project Cost **\$8,500,000**
- 2. 2023 SANITARY SEWER PHASE I (PIPE BURSTING)**
Rehab and repair of gravity sanitary sewer system overall.
Estimated Project Cost **\$200,000**
- 3. GSA 1 GRAVITY SYSTEM IMPROVEMENTS**
Replace existing 10" sanitary sewer line with 18" sanitary sewer from SH 105 to just north of Grandview Dr along Lone Star Parkway.
Estimated Project Cost **\$2,657,000**
- 4. GSA 12 GRAVITY SYSTEM IMPROVEMENTS**
Extend 8" gravity sanitary sewer along SH-105 from Buffalo Springs to CB Stewart to abandon Lift Station No. 12.
Estimated Project Cost **\$353,000**
- 5. GSA NO. 2S GRAVITY SYSTEM IMPROVEMENTS**
Upsize existing 8" and 10" sanitary sewer lines to a 12" sanitary sewer line from SH-105 to College St.
Estimated Project Cost **\$578,000**
- 6. GSA NO. 5 SYSTEM IMPROVEMENTS**
Extends 8" gravity sanitary sewer from Lift Station No. 5 past Lift Station B to abandon Lift Station B.
Estimated Project Cost **\$259,000**

7. LIFT STATION No. 3 FORCE MAIN REROUTE

Abandons existing 4" force main along FM 149 to SH-105 and reroutes flow along SH-105 to Stewart Creek Wastewater Treatment Plant.

Estimated Project Cost **\$350,000**

8. WWTP UPSIZING TO ULTIMATE

Upsizing of either Stewart Creek WWTP and Lift Station No. 1 or Town Creek WWTP and Lift Station No. 2 to 0.8 MGD depending on future city development.

Estimated Project Cost **\$6,500,000**

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6. WATER IMPACT FEE CALCULATIONS

Chapter 395 of the Local Government Code defines a service unit as follows, “‘Service Unit’ means a standardized measure of consumption attributable to an individual unit of development calculated in accordance with generally accepted engineering or planning standards and based on historical data and trends applicable to the political subdivision in which the individual unit of development is located during the previous 10 years.” Therefore, the City of Montgomery defines a *service unit* as an Equivalent Single-Family Connection (ESFC) that consumes the amount of water requiring a standard 5/8” meter. For a development that requires a different size meter, a service unit equivalent is established at a multiplier based on its capacity with respect to the 5/8” meter. The equivalency factor and associated impact fee by meter size is shown in **Table 1** earlier in this report.

Additional Service Units and Water Impact Fee Calculation

Based on the City’s 10-year growth projections and the resulting water demand projections, water service will be required for an additional 3,571 service units by 2033. The calculation is as follows:

- A service unit, which is a unit of development that consumes approximately 225 gallons per day (GPD), is an equivalent single-family connection that uses a 5/8” meter. **Table 5** outlines the future water demand projections and its relationship to the additional service units projected for the next 10-years.

Table 5 - 10-year Additional Service units Calculation

Year	Average Day Demand (Gallons)	Service Unit Demand (GPD)	Equivalent Single-Family Connections (ESFC)
2023	481,238	225	2,139
2028	1,022,429	225	4,544
2033	1,286,879	225	5,710
10-year Additional ESFC's			3,571

Impact fee law allows for a credit calculation to credit back to the development community based on the utility revenues or ad valorem taxes that are allocated for paying a portion of future capital improvements. The intent of this credit is to prevent the City from double charging development for future capital improvements via impact fees and utility rates. If the City chooses not to undertake a financial analysis to determine the credit value, they are required by law to reduce the recoverable cost by 50 percent. The City has chosen not to perform a financial analysis. The maximum recoverable cost for impact fee is shown below.

Table 6 - Maximum Recoverable Cost (Water)

Projects	Project Cost (\$)	Allowed Recoverable	Allowed Recoverable (\$)
WATER PLANT NO. 4	\$6,573,000	100%	\$6,573,000
WATER PLANT NO 2 IMPROVEMENTS	\$1,232,000	26%	\$320,320
ABNER LANE WATERLINE EXTENSION	\$240,000	100%	\$240,000
CB STEWART AND BUFFALO SPRINGS WATERLINE EXTENSION	\$678,000	100%	\$678,000
DOWNTOWN WATERLINE REPLACEMENT PH II (POND TO PRAIRIE)	\$559,000	56%	\$313,040
EAST LONE STAR PARKWAY WATERLINE EXTENSION	\$740,000	100%	\$740,000
HOUSTON ST. WATERLINE REPLACEMENT	\$463,000	56%	\$259,280
OLD PLANTERSVILLE ROAD TO SH 105 WATERLINE EXTENSION (REDBIRD MEADOWS DEVELOPMENT)	\$980,000	100%	\$980,000
POND STREET TO MONTGOMERY ELEMENTARY WATERLINE REPLACEMENT	\$1,089,000	75%	\$816,750
SH-105 WATERLINE EXTENSION	\$425,000	100%	\$425,000
WEST LONE STAR PARKWAY WATERLINE EXTENSION	\$1,302,000	100%	\$1,302,000
McCOWN and CAROLINE WATERLINE REPLACEMENT	\$370,000	19%	\$70,300
WOMACK CEMETERY RD. TO SH 105 WATERLINE REPLACEMENT	\$1,988,000	56%	\$1,104,444
WATER PLANT NO. 3 EXPANSION	\$120,000	33%	\$40,019
WATER PLANT NO. 3 IMPROVEMENTS (COMPLETED)	\$1,001,622	44%	\$438,210
DOWNTOWN WATERLINE REPLACEMENT PH I (COMPLETED)	\$1,099,884	33%	\$366,798
Summation	\$18,860,506		\$14,668,000

A calculation of the 10-year recoverable costs and the associated impact fee per service unit is as follows:

$$\begin{aligned}
 \text{Impact fee per service unit} &= \frac{10 - \text{year recoverable costs}}{10 - \text{year additional service units}} = \frac{\$14,668,000}{3,571} \\
 \text{50\% Reduction} & \qquad \qquad \qquad \text{50\% x \$} & \qquad \qquad \qquad = \$2,054
 \end{aligned}$$

Therefore, the maximum assessable water impact fee per service unit is \$2,054.

For a development that requires a different size meter, an equivalent single-family connection (ESFC) is established at a multiplier based on its capacity with respect to the 5/8" meter. The maximum impact fee that could be assessed for other meter sizes is based on the value shown on **Table 7**, ESFC Table for Commonly Used Meters.

Table 7 - ESFC Table for Commonly Used Meters (Water)

Meter Size	Maximum Continuous Operating Capacity (GPM)	ESFC	Maximum Assessable Water Fee (\$)
5/8"	15	1.00	2,054
3/4"	25	1.67	3,430
1"	40	2.67	5,483
1 1/2"	120	8.00	16,429
2"	170	11.33	23,267
3"	350	23.33	47,910
4"	600	40.00	82,144
6"	1,200	80.00	164,288
8"	1,800	120.00	246,432

7. WASTEWATER IMPACT FEE CALCULATIONS

Based on the City’s 10-year growth projections and the resulting water demand projections, wastewater service will be required for an additional 5,885 service units. For simplicity, the average daily flow for wastewater is compared to the meter size used for water service. The calculation is as follows:

- A service unit, which is a unit of development that produces approximately 150 gallons per day (GPD), is an equivalent single-family connection that uses a 5/8" meter. **Table 8** outlines the future wastewater demand projections and their relationship to the additional service units projected for the next 10 years.

Table 8 - 10-year Additional Service Units Calculation

Year	Average Day Demand (Gallons)	Service Unit Demand (GPD)	Equivalent Single Family Connections (ESFC)
2023	187,100	150	1,247
2028	695,000	150	4,060
2033	923,000	150	4,834
10-year Additional ESFC's			3,586

Impact fee law allows for a credit calculation to credit back to the development community based on the utility revenues or ad valorem taxes that are allocated for paying a portion of future capital improvements. The intent of this credit is to prevent the City from double charging development for future capital improvements via impact fees and utility rates. If the City chooses not to do a financial analysis to determine the credit value, they are required by law to reduce the recoverable cost by 50 percent. The City has chosen not to perform a financial analysis. The maximum recoverable cost for impact fee is shown below.

Table 9 - Maximum Recoverable Cost (Wastewater)

Projects	Project Cost (\$)	Allowed Recoverable	Allowed Recoverable (\$)
Town Creek WWTP Improvements	\$8,500,000	100%	\$8,500,000
Sanitary Sewer Rehabilitation Phase I	\$200,000	31%	\$62,000
GSA 1 Gravity System Improvements	\$2,657,000	56%	\$1,487,920
GSA 12 Gravity System Improvements	\$353,000	100%	\$353,000
GSA 2S Gravity System Improvements	\$200,000	57%	\$114,000
GSA 5 Gravity System Improvements	\$259,000	100%	\$259,000
Lift Station No. 3 Force Main Reroute	\$350,000	31%	\$108,500
WWTP Upsizing to Ultimate	\$6,500,000	50%	\$3,250,000
Summation	\$21,502,000		\$13,875,920

A breakdown of the 10-year recoverable costs and the associated impact fee per service unit is as follows:

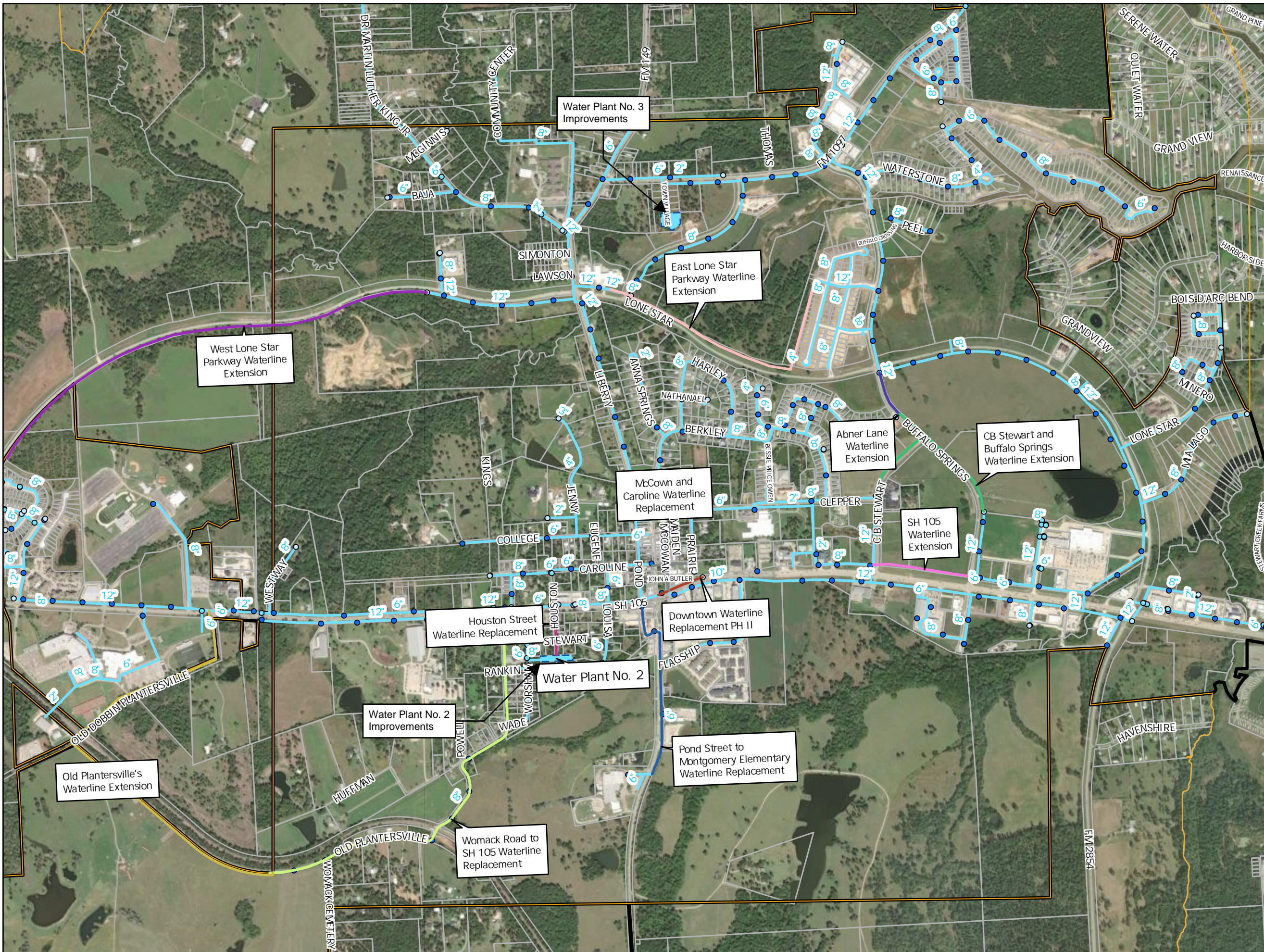
$$\begin{aligned}
 \text{Impact fee per service unit} &= \frac{10 - \text{year recoverable costs}}{10 - \text{year additional service units}} = \frac{\$13,875,920}{3,586} \\
 \text{50\% Reduction} & \qquad \qquad \qquad \text{50\% x \$} & \qquad \qquad \qquad = \$1,934
 \end{aligned}$$

Therefore, the maximum assessable impact fee per service unit is \$1,934.

As stated above, the wastewater demand is compared to meter sizes as used for water service to a development. For a development that requires a different size meter, an equivalent single-family connection (ESFC) is established at a multiplier based on its capacity with respect to the 5/8" meter. The maximum impact fee that could be assessed for other meter sizes is based on the value shown on **Table 10**, ESFC Table for Commonly Used Meters.

Table 10 - ESFC Table for Commonly Used Meters (Wastewater)

Meter Size	Maximum Continuous Operating Capacity (GPM)	ESFC	Maximum Assessable Wastewater Fee (\$)
5/8"	15	1.00	1,934
3/4"	25	1.67	3,231
1"	40	2.67	5,165
1 1/2"	120	8.00	15,476
2"	170	11.33	21,918
3"	350	23.33	45,131
4"	600	40.00	77,379
6"	1,200	80.00	154,758
8"	1,800	120.0	232,137



- Legend**
- Jurisdictional Boundaries
 - Parcel Boundary
 - City Limits
 - Montgomery ETJ
 - Water Infrastructure
 - Water Plant Boundary
 - wMain
 - wHydrant
 - wFittings
 - wControlValve
 - Proposed Capital Projects
 - Abner Lane Waterline Extension
 - CB Stewart and Buffalo Springs Waterline Extension
 - Downtown Waterline Replacement PH II
 - East Lone Star Parkway Waterline Extension
 - Houston Street Waterline Replacement
 - McCown and Caroline Waterline Replacement
 - Old Plantersville's Waterline Extension
 - Pond Street to Montgomery Elementary Waterline Replacement
 - SH 105 Waterline Extension
 - West Lone Star Parkway Waterline Extension
 - Womack Road to SH 105 Waterline Replacement

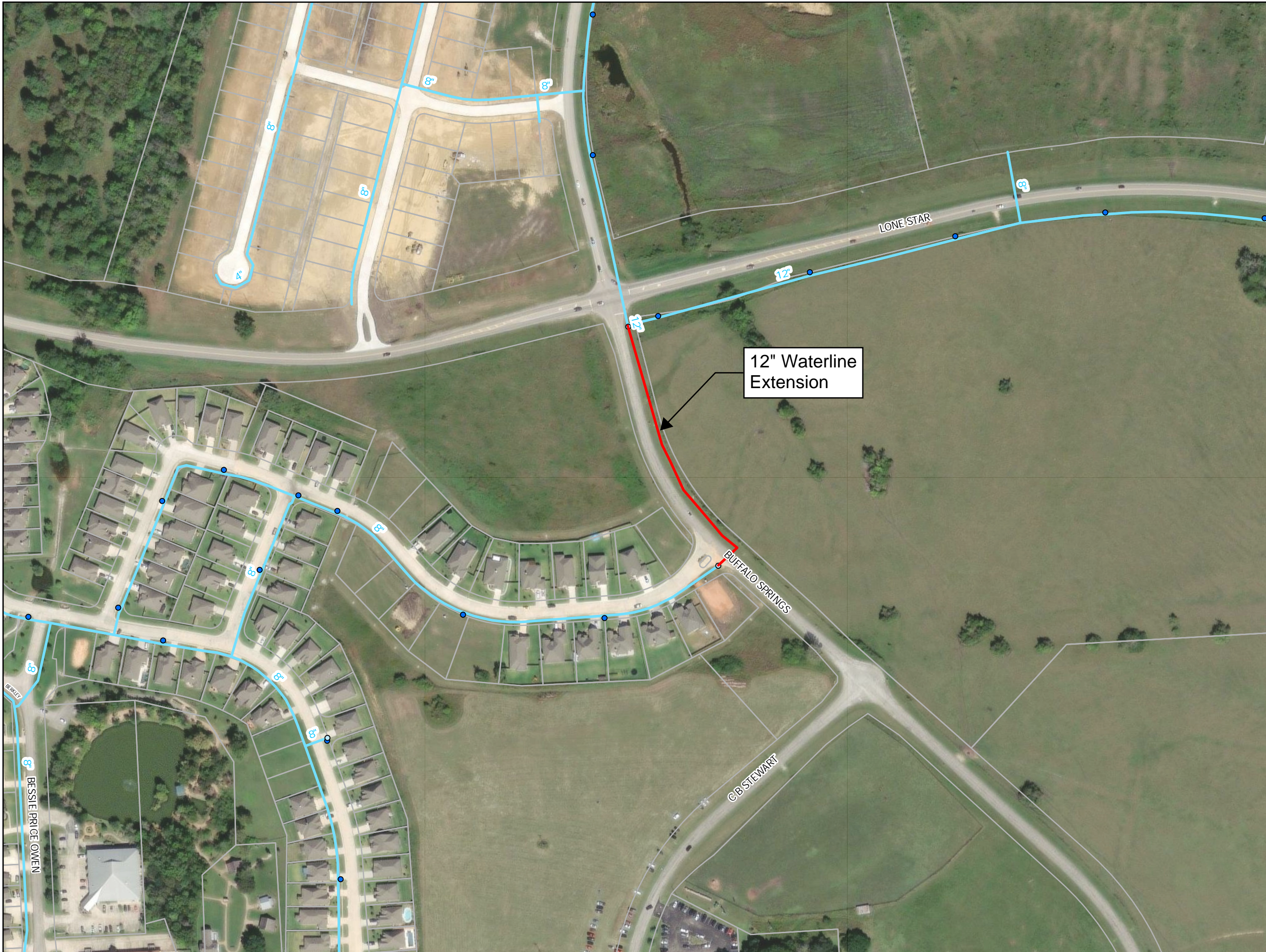
Exhibit No. 1

Water Impact Fee Overall Project Map



Disclaimer: This product is offered for graphical purposes only and may not be suitable for legal, engineering, or surveying purposes. The information shown on this exhibit represents the approximate location of property, municipal boundaries or facilities.





Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Water Infrastructure

- Water Plant Boundary
- wMain
- wHydrant
- wFittings
- wControlValve

Proposed Capital Projects

- Abner Lane Waterline Extension

Exhibit No. 1A

Abner Lane Waterline Extension



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Water Infrastructure

- Water Plant Boundary
- wMain
- wHydrant
- wFittings
- wControlValve

Proposed Capital Projects

- CB Stewart and Buffalo Springs Waterline Extension

12" Waterline Extension

Exhibit No. 1B

CB Stewart and Buffalo Springs Waterline Extension



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Water Infrastructure

- Water Plant Boundary
- wMain
- wHydrant
- wFittings
- wControlValve

Proposed Capital Projects

- Downtown Waterline Replacement PH II

Exhibit No. 1C

Downtown Waterline Replacement PH II



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Water Infrastructure

- Water Plant Boundary
- wMain
- wHydrant
- wFittings
- wControlValve

Proposed Capital Projects

- East Lone Star Parkway Waterline Extension

Exhibit No. 1D

East Lone Star Parkway Waterline Extension



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- Legend**
- Jurisdictional Boundaries**
- Parcel Boundary
 - City Limits
 - Montgomery ETJ
- Water Infrastructure**
- Water Plant Boundary
 - wMain
 - wHydrant
 - wFittings
 - wControlValve
- Proposed Capital Projects**
- Houston Street Waterline Replacement

Exhibit No. 1E

Houston Street Waterline Replacement



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Water Infrastructure

- Water Plant Boundary
- wMain
- wControlValve
- wFittings
- wHydrant

Proposed Capital Projects

- Old Plantersville's Waterline Extension

12" Waterline Extension

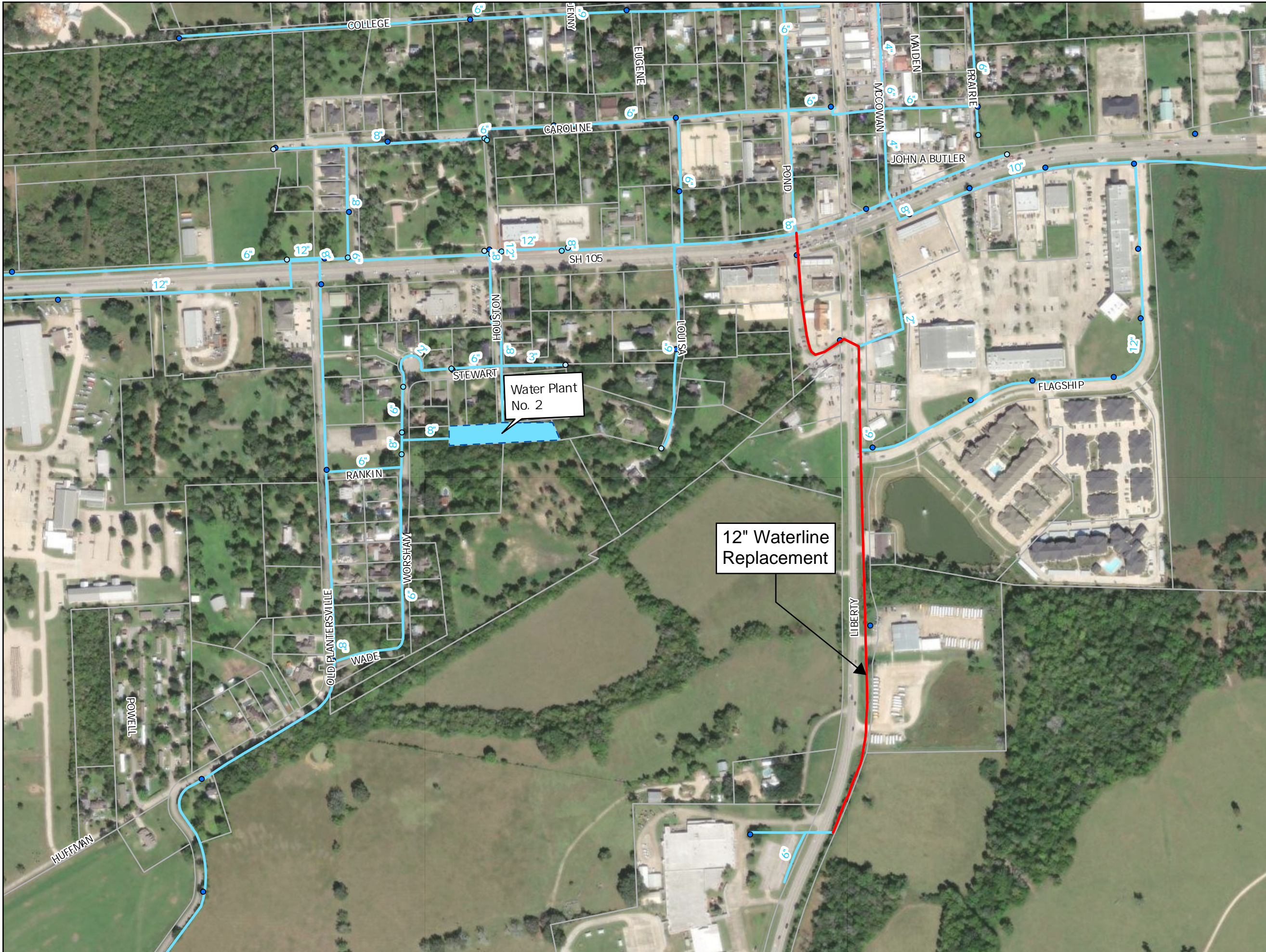
Exhibit No. 1F

Old Plantersville Road Waterline Extension



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- Legend**
- Jurisdictional Boundaries**
- Parcel Boundary
 - City Limits
 - Montgomery ETJ
- Water Infrastructure**
- Water Plant Boundary
 - w/in
 - w/hydrant
 - w/fittings
 - w/control valve
- Proposed Capital Projects**
- Pond Street to Montgomery Elementary Waterline Replacement

Exhibit No. 1G

Pond Street to Montgomery Elementary Waterline Replacement



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Water Infrastructure

- Water Plant Boundary
- wMain
- wHydrant
- wFittings
- wControlValve

Proposed Capital Projects

- SH 105 Waterline Extension

Exhibit No. 1H

SH 105 Waterline Extension



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Water Infrastructure

- Water Plant Boundary
- wMain
- wHydrant
- wFittings
- wControlValve

Proposed Capital Projects

- West Lone Star Parkway Waterline Extension

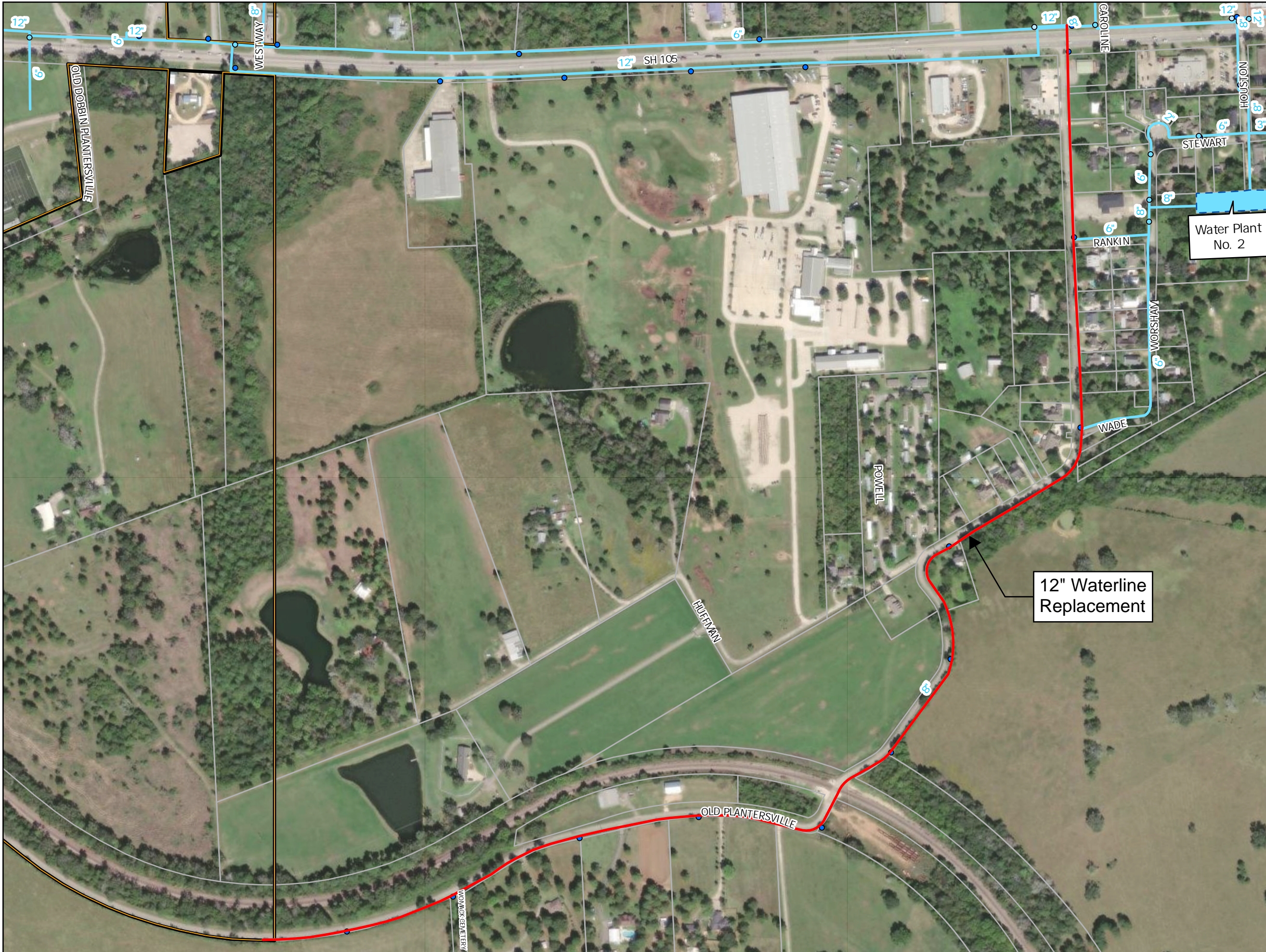
Exhibit 11

West Lone Star Parkway Waterline Extension



Disclaimer: This product is offered for graphical purposes only and may not be suitable for legal, engineering, or surveying purposes. The information shown on this exhibit represents the approximate location of property, municipal boundaries or facilities.





Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Water Infrastructure

- Water Plant Boundary
- wMain
- wHydrant
- wFittings
- wControlValve

Proposed Capital Projects

- Womack Road to SH 105 Waterline Replacement

12" Waterline Replacement

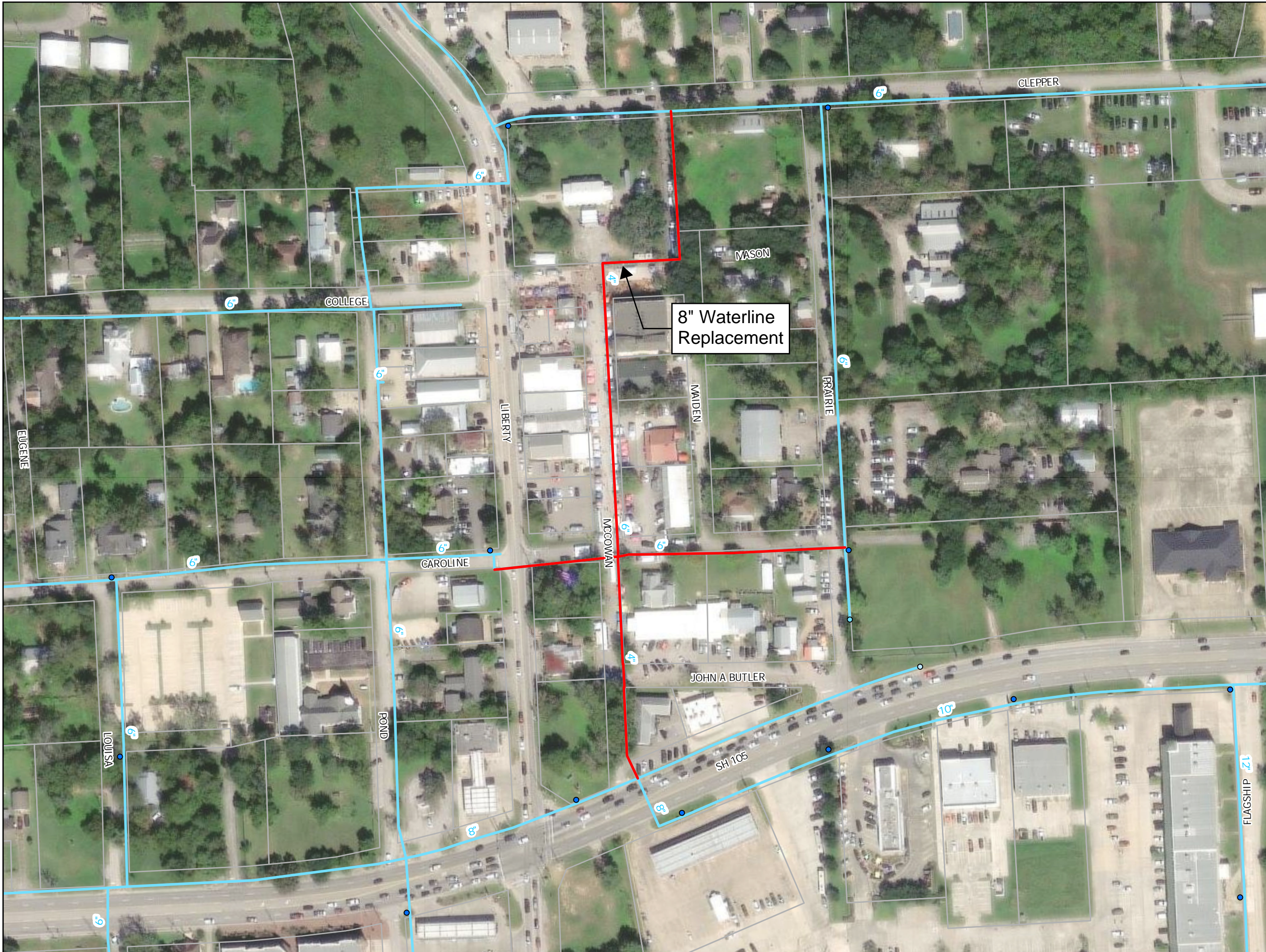
Exhibit 1J

Womack Cemetery Rd to SH 105 Waterline Replacement



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Water Infrastructure

- Water Plant Boundary
- wMain
- wHydrant
- wFittings
- wControlValve

Proposed Capital Projects

- McCown and Caroline Waterline Replacement

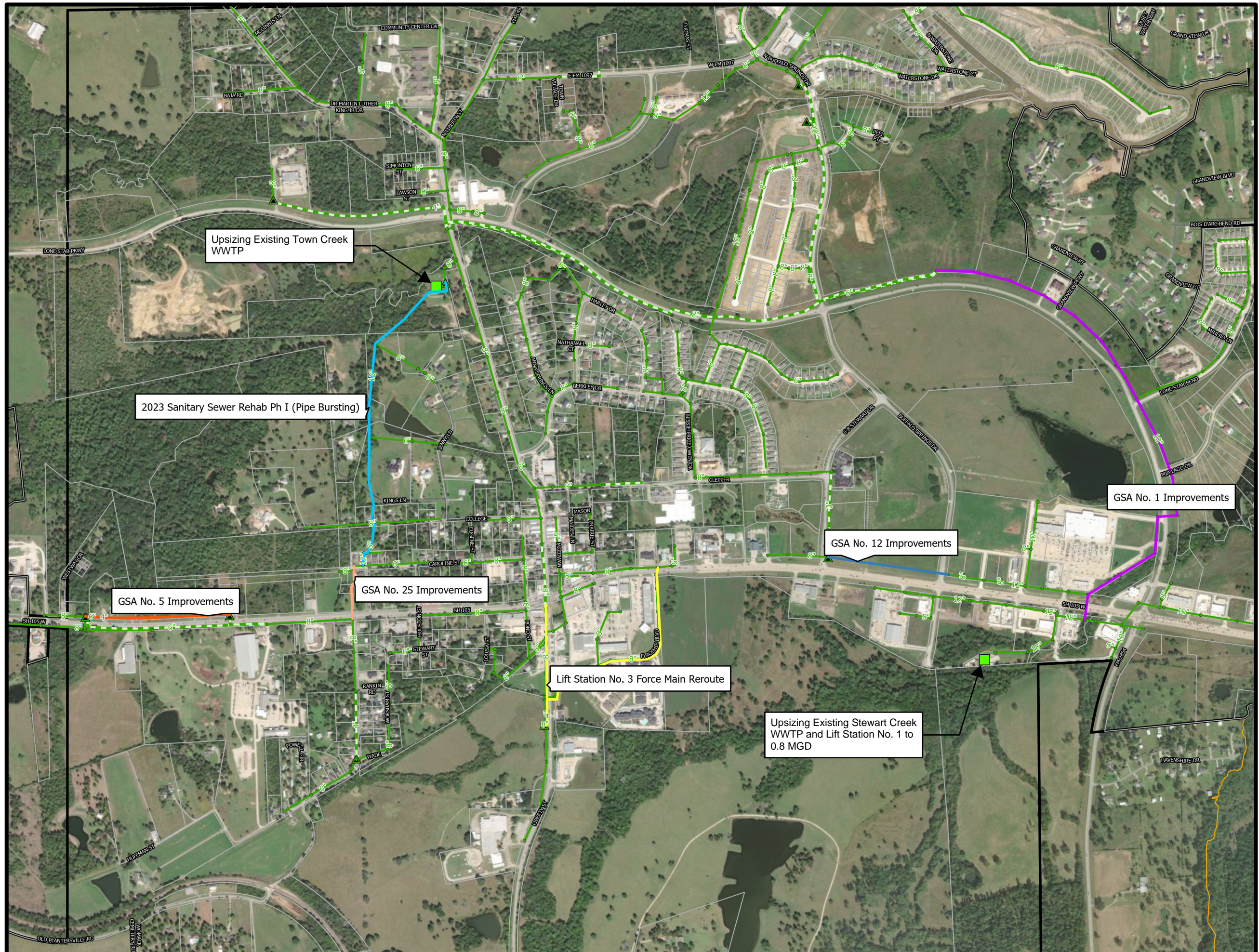
Exhibit No. 1K

McCown and Caroline
Waterline Replacement



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Sanitary Sewer Infrastructure

- Treatment Plant
- Lift Station
- Sanitary Sewer Manhole
- Sanitary Sewer Force Main
- Sanitary Sewer (Gravity)

Proposed Capital Projects

- GSA No. 1 Improvements
- GSA No. 12 Improvements
- GSA No. 25 Improvements
- GSA No. 5 Improvements
- Lift Station No. 3 Force Main Reroute
- 2023 Sanitary Sewer Rehab Ph I (Pipe Bursting)

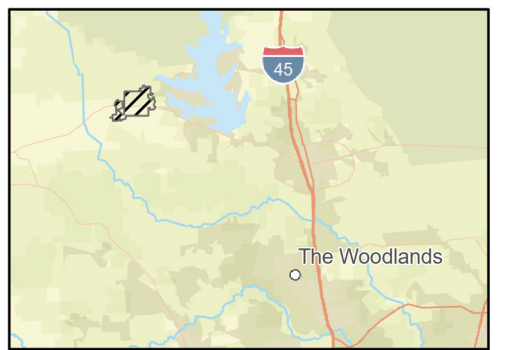
Exhibit No. 2

Sanitary Sewer Impact Fee Overall Map



Disclaimer: This product is offered for graphical purposes only and may not be suitable for legal, engineering, or surveying purposes. The information shown on this exhibit represents the approximate location of property, municipal boundaries or facilities.





Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits
- Montgomery ETJ

Sanitary Sewer Infrastructure

- Treatment Plant
- Lift Station
- Sanitary Sewer Manhole
- Sanitary Sewer Force Main
- Sanitary Sewer (Gravity)

Proposed Capital Projects

- GSA No. 1 Improvements

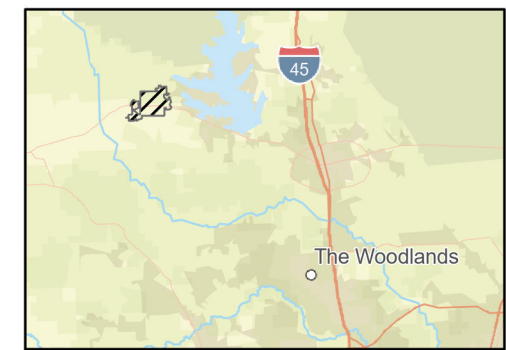
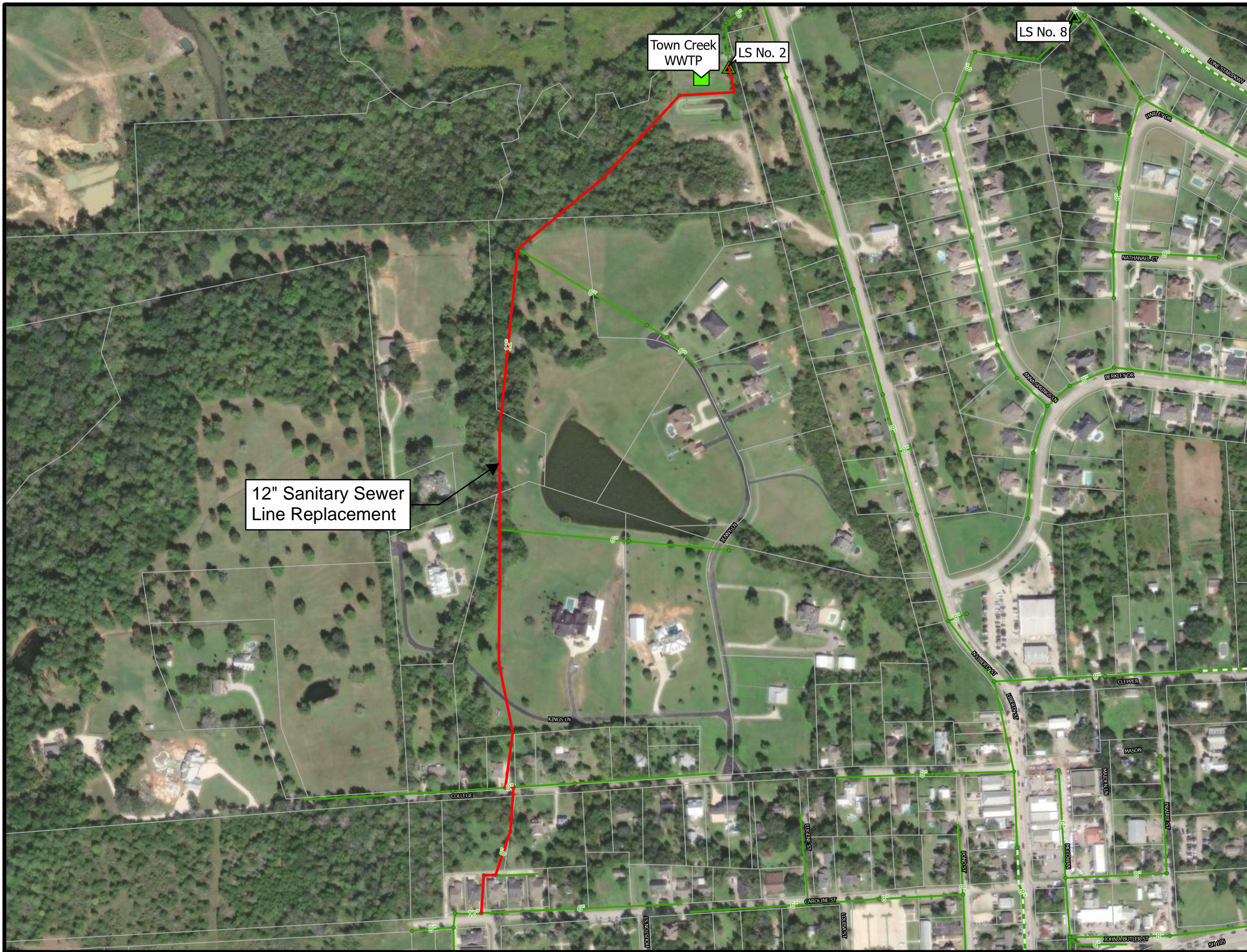
Exhibit No. 2A

GSA No. 1 Improvements



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Legend

Jurisdictional Boundaries

- City Limits
- Parcel Boundary

Sanitary Sewer Infrastructure

- Treatment Plant
- Lift Station
- Sanitary Sewer Manhole
- Sanitary Sewer Force Main
- Sanitary Sewer (Gravity)

Proposed Capital Projects

- 2023 Sanitary Sewer Rehab Ph I (Pipe Bursting)

Exhibit No. 2B

2023 Sanitary Sewer Phase I (Pipe Bursting)

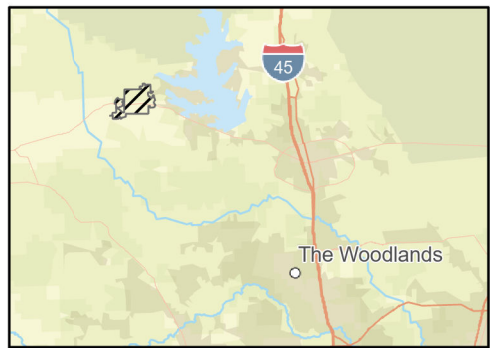


Disclaimer: This product is offered for graphical purposes only and may not be suitable for legal, engineering, or surveying purposes. The information shown on this exhibit represents the approximate location of property, municipal boundaries or facilities.





12" Sanitary Sewer Line Replacement



Legend

Jurisdictional Boundaries

- City Limits
- Parcel Boundary

Sanitary Sewer Infrastructure

- Sanitary Sewer Manhole
- Sanitary Sewer Force Main
- Sanitary Sewer (Gravity)

Proposed Capital Projects

- GSA No. 2S Improvements

Exhibit No. 2C

GSA No. 2S Improvements



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits

Sanitary Sewer Infrastructure

- Lift Station
- Sanitary Sewer Manhole
- Sanitary Sewer Force Main
- Sanitary Sewer (Gravity)

Proposed Capital Projects

- GSA No. 5 Improvements

Exhibit No. 2D

GSA No. 5 Improvements



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits

Sanitary Sewer Infrastructure

- ▲ Lift Station
- Sanitary Sewer Manhole
- - - Sanitary Sewer Force Main
- Sanitary Sewer (Gravity)

Proposed Capital Projects

- GSA No. 12 Improvements

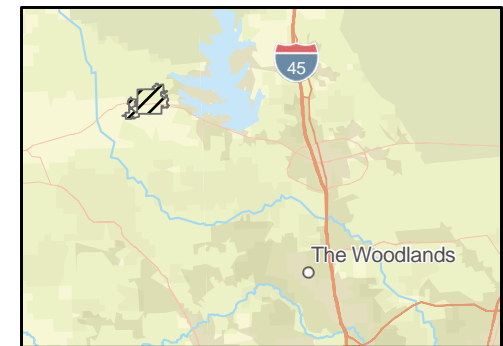
Exhibit No. 2E

GSA No. 12 Improvements



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Legend

Jurisdictional Boundaries

- Parcel Boundary
- City Limits

Sanitary Sewer Infrastructure

- Lift Station
- Sanitary Sewer Manhole
- Sanitary Sewer Force Main
- Sanitary Sewer (Gravity)
- Lift Station No. 3 Force Main Reroute

Exhibit No. 2F

Lift Station No. 3 Force Main Reroute

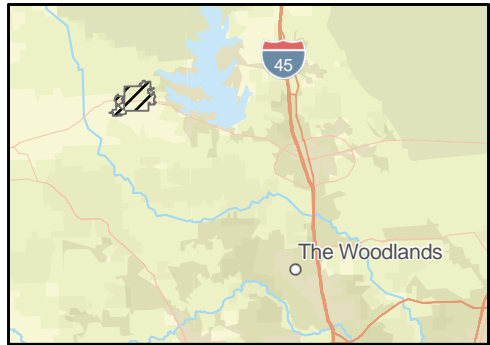


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Upsizing Town Creek
WWTP and Lift Station
No. 2 to 0.3 MGD



Legend

Jurisdictional Boundaries

- City Limits
- Parcel Boundary

Sanitary Sewer Infrastructure

- Treatment Plant
- Lift Station
- Sanitary Sewer Manhole
- Sanitary Sewer Force Main
- Sanitary Sewer (Gravity)

Exhibit No. 2G

Town Creek WWTP
Improvements



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Preliminary Cost Estimate
Water Plant No. 4
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	Concrete Access Road	1	LS	\$ 70,000	\$ 70,000
3	500,000 gallon Composite Elevated Storage Tank, including Protective Coating	1	LS	\$ 2,500,000	\$ 2,500,000
4	1,000 GPM Jasper Well	1	LS	\$ 1,500,000	\$ 1,500,000
5	Booster Pumps	2	EA	\$ 120,000	\$ 240,000
6	Plant Piping, Valves, Fittings, Thrust Blocks, and Pipe Supports	1	LS	\$ 10,000	\$ 10,000
7	Electrical Work (Includes Generator)	1	LS	\$ 250,000	\$ 250,000
8	Site Work	1	LS	\$ 30,000	\$ 30,000
9	Hydromulch	1	LS	\$ 5,000	\$ 5,000
10	Protective Coating for all Facilities (Excluding EST)	1	LS	\$ 30,000	\$ 30,000
11	Traffic Control	1	LS	\$ 5,000	\$ 5,000
12	Storm Water Pollution Prevention Plan	1	LS	\$ 5,000	\$ 5,000
				Subtotal	\$ 4,665,000
				Contingencies (15%)	700,000
				Inflation	\$ 214,600
				Engineering (Design and Construction Admin)(20%)	933,000
				Field Project Representation	30,000
				Additional Services & Reimbursable Expenses	30,000
				Total Construction Cost	\$ 6,573,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
Abner Lane Waterline Extension
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 15,000	\$ 15,000
2	12-inch PVC Waterline	780	LF	\$ 80	\$ 62,400
3	12-inch PVC Waterline (trenchless with 20" steel casing)	60	LF	\$ 350	\$ 21,000
4	12-inch Gate Valve	1	EA	\$ 3,000	\$ 3,000
5	Fire Hydrant Assembly	2	EA	\$ 6,000	\$ 12,000
6	Connection to Existing Waterline	2	EA	\$ 4,000	\$ 8,000
7	Trench Safety System	780	LF	\$ 1	\$ 780
8	Site Restoration (Including Pavement)	1	LS	\$ 10,000	\$ 10,000
9	Traffic Control	1	LS	\$ 5,000	\$ 5,000
10	Storm Water Pollution Prevention Plan	1	LS	\$ 5,000	\$ 5,000
				Subtotal	\$ 143,000
				Contingencies (15%)	22,000
				Inflation (4% per year)	\$ 20,603
				Engineering (Design and Construction Admin)(20%)	29,000
				Field Project Representation	10,000
				Additional Services & Reimbursable Expenses	15,000
				Total Construction Cost	\$ 240,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
CB Stewart and Buffalo Springs Waterline Extension
City of Montgomery
 March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	12-inch PVC Waterline	2800	LF	\$ 80	\$ 224,000
3	12-inch PVC Waterline (trenchless with 20" steel casing)	200	LF	\$ 350	\$ 70,000
4	12-inch Gate Valve	3	EA	\$ 3,000	\$ 9,000
5	Fire Hydrant Assembly	7	EA	\$ 6,000	\$ 42,000
6	Connection to Existing Waterline	3	EA	\$ 4,000	\$ 12,000
7	Trench Safety System	2800	LF	\$ 1	\$ 2,800
8	Site Restoration (Including Pavement)	1	LS	\$ 10,000	\$ 10,000
9	Traffic Control	1	LS	\$ 15,000	\$ 15,000
10	Storm Water Pollution Prevention Plan	1	LS	\$ 10,000	\$ 10,000
				Subtotal	\$ 415,000
				Contingencies (15%)	63,000
				Inflation (4% per year)	\$ 81,192
				Engineering (Design and Construction Admin)(20%)	83,000
				Field Project Representation	15,000
				Additional Services & Reimbursable Expenses	20,000
				Total Construction Cost	\$ 678,000

Notes:

- (1) All values rounded up to the nearest thousand.
- (2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.
- (3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
Downtown Waterline Replacement PH II
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	12-inch PVC Waterline via Pipe Bursting	1500	LF	\$ 150	\$ 225,000
3	12-inch PVC Waterline (trenchless with 20" steel casing)	120	LF	\$ 350	\$ 42,000
4	12-inch Gate Valve	2	EA	\$ 5,000	\$ 10,000
5	Fire Hydrant Assembly	4	EA	\$ 6,000	\$ 24,000
6	Connection to Existing Waterline	2	EA	\$ 4,000	\$ 8,000
7	Trench Safety System	80	LF	\$ 1	\$ 80
8	Site Restoration (Including Pavement)	1	LS	\$ 5,000	\$ 5,000
9	Traffic Control	1	LS	\$ 10,000	\$ 10,000
10	Storm Water Pollution Prevention Plan	1	LS	\$ 5,000	\$ 5,000
				Subtotal	\$ 350,000
				Contingencies (15%)	53,000
				Inflation (4% per year)	\$ 50,320
				Engineering (Construction Admin)(20%)	70,000
				Field Project Representation	10,000
				Additional Services & Reimbursable Expenses	25,000
				Total Construction Cost	\$ 559,000

Notes:

- (1) All values rounded up to the nearest thousand.
- (2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.
- (3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.
- (4) The design work for this project was completed during the Downtown Waterline Replacement PH I. Due to timing this project was broken out into Phase I and Phase II.



Preliminary Cost Estimate
East Lone Star Parkway Waterline Extension
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	12-inch PVC Waterline	4250	LF	\$ 80	\$ 340,000
3	12-inch PVC Waterline (trenchless with 20" steel casing)	60	LF	\$ 350	\$ 21,000
4	12-inch Gate Valve	5	EA	\$ 3,000	\$ 15,000
5	Fire Hydrant Assembly	11	EA	\$ 6,000	\$ 66,000
6	Connection to Existing Waterline	3	EA	\$ 4,000	\$ 12,000
7	Trench Safety System	4250	LF	\$ 1	\$ 4,250
8	Site Restoration (Including Pavement)	1	LS	\$ 5,000	\$ 5,000
9	Traffic Control	1	LS	\$ 5,000	\$ 5,000
10	Storm Water Pollution Prevention Plan	1	LS	\$ 5,000	\$ 5,000
				Subtotal	\$ 494,000
				Contingencies (15%)	75,000
				Inflation (4% per year)	\$ 46,430
				Engineering (Design and Construction Admin)(20%)	99,000
				Field Project Representation	10,000
				Additional Services & Reimbursable Expenses	15,000
				Total Construction Cost	\$ 740,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
Houston Street Waterline Replacement
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
3	12-inch PVC Waterline via Pipe Bursting	800	LF	\$ 150	\$ 120,000
4	12-inch PVC Waterline (trenchless with 20" steel casing)	170	LF	\$ 350	\$ 59,500
5	12-inch Gate Valve	1	EA	\$ 5,000	\$ 5,000
6	Fire Hydrant Assembly	3	EA	\$ 6,000	\$ 18,000
7	Connection to Existing Waterline	2	EA	\$ 4,000	\$ 8,000
8	Trench Safety System	80	LF	\$ 1	\$ 80
9	Site Restoration (Including Pavement)	1	LS	\$ 5,000	\$ 5,000
10	Traffic Control	1	LS	\$ 5,000	\$ 5,000
11	Storm Water Pollution Prevention Plan	1	LS	\$ 5,000	\$ 5,000
				Subtotal	\$ 246,000
				Contingencies (15%)	37,000
				Inflation (4% per year)	\$ 104,305
				Engineering (Design and Construction Admin)(20%)	50,000
				Field Project Representation	10,000
				Additional Services & Reimbursable Expenses	15,000
				Total Construction Cost	\$ 463,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
Pond Street to Montgomery Elementary Waterline Replacement
City of Montgomery
 March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	Remove and Dispose of Existing 8-inch Waterline	3000	LF	\$ 13	\$ 39,000
3	12-inch PVC Waterline	3000	LF	\$ 80	\$ 240,000
4	12-inch PVC Waterline (trenchless with 20" steel casing)	180	LF	\$ 350	\$ 63,000
5	Temporary Waterline	3000	LF	\$ 50	\$ 150,000
6	12-inch Gate Valve	3	EA	\$ 3,000	\$ 9,000
7	Fire Hydrant Assembly	8	EA	\$ 6,000	\$ 48,000
8	Connection to Existing Waterline	1	EA	\$ 4,000	\$ 4,000
9	12-inch waterline stub and blowoff valve	1	EA	\$ 2,500	\$ 2,500
10	Trench Safety System	3000	LF	\$ 1	\$ 3,000
11	Site Restoration (Including Pavement)	1	LS	\$ 15,000	\$ 15,000
12	Traffic Control	1	LS	\$ 10,000	\$ 10,000
13	Storm Water Pollution Prevention Plan	1	LS	\$ 10,000	\$ 10,000
Subtotal					\$ 614,000
Contingencies (15%)					93,000
Inflation (4% per year)					\$ 223,364
Engineering (Design and Construction Admin)(20%)					123,000
Field Project Representation					15,000
Additional Services & Reimbursable Expenses					20,000
Total Construction Cost					\$ 1,089,000

Notes:

- (1) All values rounded up to the nearest thousand.
- (2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost
- (3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
SH-105 Waterline Extension
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	12-inch PVC Waterline	1250	LF	\$ 80	\$ 100,000
3	12-inch PVC Waterline (trenchless with 20" steel casing)	200	LF	\$ 350	\$ 70,000
4	12-inch Gate Valve	2	EA	\$ 3,000	\$ 6,000
5	Fire Hydrant Assembly	4	EA	\$ 6,000	\$ 24,000
6	Connection to Existing Waterline	2	EA	\$ 4,000	\$ 8,000
7	Trench Safety System	1250	LF	\$ 1	\$ 1,250
8	Site Restoration (Including Pavement)	1	LS	\$ 15,000	\$ 15,000
9	Traffic Control	1	LS	\$ 10,000	\$ 10,000
10	Storm Water Pollution Prevention Plan	1	LS	\$ 8,000	\$ 8,000
				Subtotal	\$ 263,000
				Contingencies (15%)	40,000
				Inflation (4% per year)	\$ 65,646
				Engineering (Design and Construction Admin)(20%)	53,000
				Field Project Representation	15,000
				Additional Services & Reimbursable Expenses	15,000
				Total Construction Cost	\$ 452,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
West Lone Star Parkway Waterline Extension
City of Montgomery
March 5, 2024

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	12-inch PVC Waterline	6750	LF	\$ 80	\$ 540,000
3	12-inch PVC Waterline (trenchless with 20" steel casing)	100	LF	\$ 350	\$ 35,000
4	12-inch Gate Valve	7	EA	\$ 5,000	\$ 35,000
5	Fire Hydrant Assembly	17	EA	\$ 6,000	\$ 102,000
6	Connection to Existing Waterline	2	EA	\$ 4,000	\$ 8,000
7	Trench Safety System	6750	LF	\$ 1	\$ 6,750
8	Site Restoration (Including Pavement)	1	LS	\$ 15,000	\$ 15,000
9	Traffic Control	1	LS	\$ 5,000	\$ 5,000
10	Storm Water Pollution Prevention Plan	1	LS	\$ 15,000	\$ 15,000
				Subtotal	\$ 782,000
				Contingencies (15%)	118,000
				Inflation (4% per year)	\$ 194,988
				Engineering (Design and Construction Admin)(20%)	157,000
				Field Project Representation	25,000
				Additional Services & Reimbursable Expenses	25,000
				Total Construction Cost	\$ 1,302,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
McCown and Caroline St. Waterline Replacement
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-In and Start-Up	1	LS	\$ 15,000	\$ 15,000
2	8-Inch Waterline Replacement by Direct Replacement	1706	LF	60	102,000
3	8-Inch Gate Valve	8	EA	3,000	24,000
4	8-Inch Wet Connect	4	EA	3,500	14,000
5	Reconnect Water Meters	17	EA	1,000	17,000
6	Flushing Valves	4	EA	6,000	24,000
7	Temporary Waterline	500	LF	50	25,000
8	Abandon Existing 4" Waterline	853	LF	2	2,000
9	Abandon Existing 6" Waterline	853	LF	2	2,000
10	Site Restoration and Hydro-mulch Seeding	1	LS	10,000	10,000
11	Traffic Control	1	LS	10,000	10,000
12	Construction Staking	1	LS	4,500	5,000
13	Pollution Prevention	1	LS	\$ 10,000	\$ 10,000
				Subtotal	260,000
				Contingencies (20%)	52,000
				Inflation (4% per year)	\$ -
				Engineering (Design and Construction Admin)(20%)	48,000
				Reimbursable Expenses	10,000
				Total Construction Cost	\$ 370,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes construction materials testing, advertising fees, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
Womack Cemetery Rd. to SH-105 Waterline Replacement
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	Removal and Disposal of Ex. 8" line	6000	LF	\$ 15	\$ 90,000
3	12-inch PVC Waterline	6000	LF	\$ 80	\$ 480,000
4	12-inch PVC Waterline (trenchless with 20" steel casing)	300	LF	\$ 350	\$ 105,000
5	12-inch Gate Valve	6	EA	\$ 3,000	\$ 18,000
6	Fire Hydrant Assembly	15	EA	\$ 6,000	\$ 90,000
7	Connection to Existing Waterline	2	EA	\$ 4,000	\$ 8,000
8	Temporary Waterline	6000	LF	\$ 50	\$ 300,000
9	Clearing and Grubbing (20-feet along Alignment)	1	LS	\$ 8,000	\$ 8,000
10	Trench Safety System	6000	LF	\$ 1	\$ 6,000
11	Site Restoration (Including Pavement)	1	LS	\$ 15,000	\$ 15,000
12	Traffic Control	1	LS	\$ 15,000	\$ 15,000
13	Storm Water Pollution Prevention Plan	1	LS	\$ 15,000	\$ 15,000
				Subtotal	\$ 1,170,000
				Contingencies (15%)	176,000
				Inflation (4% per year)	\$ 357,119
				Engineering (Design and Construction Admin)(20%)	234,000
				Field Project Representation	25,000
				Additional Services & Reimbursable Expenses	25,000
				Total Construction Cost	\$ 1,988,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
GSA No. 1 Gravity System Improvements
City of Montgomery
 March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	Remove and Dispose of Existing 10-inch Sanitary Sewer line	6000	LF	\$ 15	\$ 90,000
3	18-inch PVC Sanitary Sewer line	6000	LF	\$ 200	\$ 1,200,000
4	18-inch PVC Sanitary Sewer line (trenchless with 30" steel casing)	230	LF	\$ 500	\$ 115,000
5	Bypass pumping	1	LS	\$ 20,000	\$ 20,000
6	Sanitary Sewer Manhole (36" Typ)	15	EA	\$ 3,000	\$ 45,000
7	Trench Safety System	6000	LF	\$ 1	\$ 6,000
8	Site Restoration (Including Pavement)	1	LS	\$ 5,000	\$ 5,000
9	Traffic Control	1	LS	\$ 5,000	\$ 5,000
10	Storm Water Pollution Prevention Plan	1	LS	\$ 5,000	\$ 5,000
11	Rework/Connection to existing Sanitary Sewer system	2	EA	\$ 2,000	\$ 4,000
				Subtotal	\$ 1,515,000
				Contingencies (15%)	228,000
				Inflation (4% per year)	\$ 550,669
				Engineering (Design and Construction Admin)(20%)	303,000
				Field Project Representation	30,000
				Additional Services & Reimbursable Expenses	30,000
				Total Construction Cost	\$ 2,657,000

Notes:

- (1) All values rounded up to the nearest thousand.
- (2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.
- (3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
GSA No. 12 Gravity System Improvements
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	8-inch PVC Sanitary Sewer line	2000	LF	\$ 80	\$ 160,000
3	Sanitary Sewer Manhole (36" Typ)	5	EA	\$ 3,000	\$ 15,000
4	Connection to existing Sanitary Sewer system	2	EA	\$ 2,000	\$ 4,000
5	Abandonment of Lift Station 12	1	LS	\$ 10,000	\$ 10,000
6	Trench Safety System	2000	LF	\$ 1	\$ 2,000
7	Site Restoration (Including Pavement)	1	LS	\$ 7,500	\$ 7,500
8	Traffic Control	1	LS	\$ 5,000	\$ 5,000
9	Storm Water Pollution Prevention Plan	1	LS	\$ 10,000	\$ 10,000
				Subtotal	\$ 234,000
				Contingencies (15%)	36,000
				Inflation (4% per year)	\$ 10,800
				Engineering (Design and Construction Admin)(20%)	47,000
				Field Project Representation	10,000
				Additional Services & Reimbursable Expenses	15,000
				Total Construction Cost	\$ 353,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
GSA No. 2C Gravity System Improvements
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance	1	LS	\$ 20,000	\$ 20,000
2	12-inch PVC Sanitary Sewer line via Pipe Bursting	3500	LF	\$ 200	\$ 700,000
3	Bypass Pumping	1	LS	\$ 15,000	\$ 15,000
4	Sanitary Sewer Manhole (36" Typ)	9	EA	\$ 3,000	\$ 27,000
5	Trench Safety System	3500	LF	\$ 1	\$ 3,500
6	Site Restoration (Including Pavement)	1	LS	\$ 15,000	\$ 15,000
7	Traffic Control	1	LS	\$ 15,000	\$ 15,000
8	Storm Water Pollution Prevention Plan	1	LS	\$ 1,000	\$ 1,000
9	Rework/Connection to existing Sanitary Sewer system	2	EA	\$ 2,000	\$ 4,000
				Subtotal	\$ 801,000
				Contingencies (15%)	121,000
				Inflation (4% per year)	\$ 75,235
				Engineering (Design and Construction Admin)(20%)	161,000
				Field Project Representation	15,000
				Additional Services & Reimbursable Expenses	20,000
				Total Construction Cost	\$ 1,194,000

Notes:

- (1) All values rounded up to the nearest thousand.
- (2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.
- (3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
GSA No. 2S Gravity System Improvements
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Move-in and Set-up, including Bonds and Insurance Replacement of Existing 10" to 12" Sanitary Sewer Via Pipe	1	LS	\$ 10,000	\$ 10,000
2	Bursting	3050	LF	\$ 30	\$ 91,500
3	Bypass Pumping	1	LS	\$ 10,000	\$ 10,000
4	Sanitary Sewer Manhole Rework	8	EA	\$ 9,500	\$ 76,000
5	Storm Water Pollution Prevention Plan	1	LS	\$ 15,000	\$ 15,000
				Subtotal	\$ 203,000
				Contingencies (15%)	31,000
				Inflation (4% per year)	\$ 19,094
				Engineering (Design and Construction Admin)(20%)	41,000
				Field Project Representation	5,000
				Additional Services & Reimbursable Expenses	11,000
				Total Construction Cost	\$ 311,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
GSA No. 5 Gravity System Improvements
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Contractor Mobilization, Bonds, & Insurance	1	LS	\$ 20,000	\$ 20,000
2	8" Sanitary Sewer via Open Construction	1920	LF	\$ 40	\$ 76,800
3	8" Sanitary Sewer (SDR-26) via Trenchless Construction	90	LF	\$ 120	\$ 10,800
4	36' Sanitary Sewer Manhole	4	EA	\$ 3,000	\$ 12,000
5	Abandonment of Lift Station B	1	LS	\$ 10,000	\$ 10,000
6	Trench Safety	1920	LF	\$ 1	\$ 1,920
7	Coring into Existing Lift Station No. 5	1	LS	\$ 5,000	\$ 5,000
8	Site Restoration (Including Pavement)	1	LS	\$ 5,000	\$ 5,000
9	Traffic Control	1	LS	\$ 5,000	\$ 5,000
10	Storm Water Pollution Prevention Plan	1	LS	\$ 5,000	\$ 5,000

Subtotal	\$ 152,000
Contingencies (15%)	23,000
Inflation (4% per year)	\$ 37,914
Engineering (Design and Construction Admin)(20%)	30,000
Field Project Representation	5,000
Additional Services & Reimbursable Expenses	11,000
Total Construction Cost	\$ 259,000

Notes:

(1) All values rounded up to the nearest thousand.

(2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
Lift Station No. 3 Re-route
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Contractor Mobilization, Bonds, & Insurance	1	LS	\$ 20,000	\$ 20,000
2	6" Sanitary Sewer Force Main via Open Construction	2000	LF	\$ 50	\$ 100,000
3	6" Sanitary Sewer Force Main via Trenchless Construction w/ Casing	200	LF	\$ 100	\$ 20,000
4	Connection to Existing Sanitary Manhole	1	EA	\$ 3,000	\$ 3,000
5	Disconnect/Reconnect Ex. 6" Force Main to Lift Station	1	LF	\$ 5,000	\$ 5,000
6	Disconnect Ex. 4" Force Main and Abandon	1	LS	\$ 10,000	\$ 10,000
7	Trench Safety System	2000	LF	\$ 1	\$ 2,000
8	Site Restoration (Including Pavement)	1	LS	\$ 10,000	\$ 10,000
9	Traffic Control	1	LS	\$ 5,500	\$ 5,500
10	Storm Water Pollution Prevention Plan	1	LS	\$ 10,000	\$ 10,000

Subtotal	\$ 186,000
Contingencies (15%)	28,000
Inflation (4% per year)	\$ 36,350
Engineering (Design and Construction Admin)(20%)	38,000
Field Project Representation	5,000
Additional Services & Reimbursable Expenses	11,000
Total Construction Cost	\$ 305,000

Notes:

- (1) All values rounded up to the nearest thousand.
- (2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We
- (3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.



Preliminary Cost Estimate
Sanitary Sewer Rehabilitation PH II
City of Montgomery
March 5, 2024

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1	Contractor Mobilization, Bonds, & Insurance	1	LS	\$ 75,000	\$ 75,000
2	8-Inch Pipe Replacement with 12" Pipe via Pipe Bursting	780	LF	\$ 75	\$ 58,500
3	Re-remove and Replace Manhole	8	LF	\$ 3,000	\$ 24,000
4	Site Restoration (Including Pavement)	1	LS	\$ 15,000	\$ 15,000
5	Traffic Control	1	LS	\$ 25,000	\$ 25,000
6	Storm Water Pollution Prevention Plan	1	LS	\$ 10,000	\$ 10,000

	Subtotal	\$ 208,000
	Contingencies (15%)	32,000
	Inflation (4% per year)	\$ 19,584
	Engineering (Design and Construction Admin)(20%)	42,000
	Field Project Representation	15,000
	Additional Services & Reimbursable Expenses	30,000
	Total Construction Cost	\$ 347,000

Notes:

- (1) All values rounded up to the nearest thousand.
- (2) This estimate is based on my best judgement as a design professional familiar with the construction industry. We
- (3) This includes topographic survey, construction staking, construction materials testing, reproduction, advertising expenses, and other miscellaneous reimbursable costs.

City of Montgomery
Sewer Impact Fee Analysis
3/1/2024

Demand	2023		2028		2033		Increase	
	ADF	ESFC	ADF	ESFC	ADF	ESFC	ADF	ESFC
Town Creek WWTP	0	0	322,000	2,147	382,184	2,548	382,184	2,548
Stewart Creek WWTP	187,100	1,247	287,000	1,913	342,888	2,286	155,788	1,039
Total Demand for City	187,100	1,247	609,000	4,060	725,072	4,834	537,972	3,586
Effective Unit Flowrate Per Connection (gpd/connection)		150		150		150		

LS 2 Flows
LS 1 Flows

Lift Station No.	Existing ADF (gpd)	Ex. Design Capacity (gpd)	Projected ADF for 2033 (gpd)	Increased ADF (gpd)	Prop. Capacity for 2033 (gpd)	Increased Capacity (gpd)	% Increase
Town Creek WWTP - Subarea 1							
WWTP Expansion PH 1 & 2	0	0	210,000	210,000	400,000	400,000	53%
Lift Station No. 2	122,379	144,000	282,184	159,805	400,000	256,000	62%
Lift Station No. 3	35,561	84,000	44,500	8,939	84,000	0	0%
Lift Station No. 4	3,300	58,000	3,300	0	58,000	0	0%
Lift Station No. 5	15,546	144,000	42,802	27,256	144,000	0	0%
Lift Station No. 6	35,400	100,800	49,774	14,374	100,800	0	0%
Lift Station No. 7	1,703	36,000	62,734	61,031	36,000	0	0%
Lift Station No. 8	15,300	56,000	15,450	150	56,000	0	0%
Stewart Creek WWTP - Subarea 2							
Lift Station No. 1	288,034	400,000	530,000	241,966	800,000	400,000	60%
Lift Station No. 9	27,905	126,000	102,099	74,194	126,000	0	0%
Lift Station No. 10	59,840	126,000	85,737	25,897	180,000	54,000	48%
Lift Station No. 12	650	40,000	2,557	1,907	40,000	0	0%
Lift Station No. 13	146	153,000	52,725	52,579	153,000	0	0%
Lift Station No. 14	9,150	59,000	9,150	0	59,000	0	0%

Capacities	2022		2027		2032		Increase	
	ADF	ESFC	ADF	ESFC	ADF	ESFC	ADF	ESFC
Town Creek WWTP-A1	0	0	400,000	2,667	400,000	2,667	400,000	2,667
Stewart Creek WWTP-A2	400,000	2,667	400,000	2,667	800,000	5,333	400,000	2,667
Total	400,000	2,667	800,000	5,333	1,200,000	8,000	800,000	5333
Unit Flowrate Per Connection (gpd/connection)		150		150		150		

Project	Description	Complete Projects	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	Project Cost (\$)	Allowed Recoverable	Allowed Recoverable
Overall System Improvements															
WWTP Upsizing to Ultimate							\$6,500,000						\$6,500,000	50%	\$3,250,000
Town Creek WWTP Improvements	LS2 and .3 MGD WWTP				\$8,500,000								\$8,500,000	100%	\$8,500,000
Sanitary Sewer PH I (10"-12" Pipe Bursting)				\$200,000									\$200,000	31%	\$62,000
Lift Station No. 3 Reroute							\$350,000						\$350,000	31%	\$108,500
Subtotal			\$1,811,000	\$210,000	\$8,975,000	\$90,000	\$6,886,000	\$0	\$0	\$0	\$5,000	\$36,000	\$18,013,000		\$11,921,000
Town Creek WWTP - Subarea 1															
GSA 2S Gravity System Improvements (2023 Sanitary Sewer Phase II)				\$200,000									\$200,000	57%	\$114,000
GSA No. 5 Improvements								\$259,000					\$259,000	100%	\$259,000
Subtotal Subarea 1			\$0	\$200,000	\$0	\$0	\$0	\$259,000	\$0	\$0	\$0	\$0	\$459,000		\$114,000
Stewart Creek WWTP - Subarea 2															
GSA No. 12 Gravity System Improvements				\$353,000									\$353,000	100%	\$353,000
GSA No. 1 Gravity System Improvements									\$2,657,000				\$2,657,000	56%	\$1,487,920
Subtotal Subarea 2			\$0	\$353,000	\$0	\$0	\$0	\$0	\$20,000	\$2,657,000	\$0	\$0	\$3,030,000		\$1,840,920
Total			\$1,811,000	\$763,000	\$8,975,000	\$90,000	\$6,886,000	\$259,000	\$20,000	\$2,657,000	\$5,000	\$36,000	\$21,502,000		\$13,875,920

Sewer Impact fee eligible project cost (0% eligible project removed) = \$13,875,920

\$3,868.95

\$6,937,960

Impact Fee Calc. (1 ESFC = 150 gpd)	\$/Gal ADF	\$/ESFC ADF	50% Reduction	
			\$/Gal ADF	\$/ESFC ADF
General Service Area 1	\$0.30	\$44.74	\$0.15	\$22.37
General Service Area 2	\$11.82	\$1,772.52	\$5.91	\$886.26
Total	\$25.79	\$3,868.95	\$12.90	\$1,934.48

ESFC Table	Water Meter Size	Max Flow	ESFC	SA1			SA2			50% Reduction		
				\$/ESFC	\$/ESFC	\$/ESFC	\$/ESFC	\$/ESFC	\$/ESFC	\$/ESFC	\$/ESFC	\$/ESFC
	5/8"	15	1.00	\$45	\$1,773	\$3,869	\$22	\$886	\$1,934			
	3/4"	25	1.67	\$75	\$2,960	\$6,461	\$37	\$1,480	\$3,231			
	1"	40	2.67	\$119	\$4,733	\$10,330	\$60	\$2,366	\$5,165			
	1 1/2"	120	8.00	\$358	\$14,180	\$30,952	\$179	\$7,090	\$15,476			
	2"	170	11.33	\$507	\$20,083	\$43,835	\$253	\$10,041	\$21,918			
	3"	350	23.33	\$1,044	\$41,353	\$90,263	\$522	\$20,676	\$45,131			
	4"	600	40.00	\$1,790	\$70,901	\$154,758	\$895	\$35,450	\$77,379			
	6"	1200	80.00	\$3,579	\$141,802	\$309,516	\$1,790	\$70,901	\$154,758			
	8"	1,800	120.00	\$5,369	\$212,703	\$464,274	\$2,685	\$106,351	\$232,137			

Project	CP#	Description	Exist. Capacity	ESFC	Prop. Capacity	ESFC	Increase	%
Town Creek WWTP Improvements	N/A	LS2 and .3 MGD WWTP (Town Creek)	0	0	400000	2667	2667	100%
Sanitary Sewer Rehabilitation Ph I (Pipe Bursting)		Rehab and repair of sanitary sewer system overall	1,057,531	7050	1,522,844	10152	3102	31%
GSA 2S Gravity System Improvements		Replace existng 8" with 12" from College St. to Town Creek WWTP via pipe bursting	676,820	4512	1,522,844	10152	5640	57%
Lift Station No. 1 and Stewart Creek WWTP		Upsizing Stewart Creek WWTP to .8MGD	400,000	2667	800,000	5333	2667	50%
GSA No. 12 Gravity System Improvements		Extend 8" Gravity to abandon LS 12 from Buffalo Springs to CB Stewart	0	0	676,820	4512	4512	100%
GSA No. 1 Gravity System Improvements		Replace existng 10" with 18" from SH 105 to just north of Grandview	1,057,531	7050	3,426,400	22843	15792	69%
GSA No. 5 Improvements		Extends 8" gravity sewer from Lift Station No. 5 past Lift Station B	0	0	676,820	4512	4512	100%
Lift Station No. 3 Force Main Reroute		Abandons existing 4" force main to SH 105 and reroutes flow to Stewart Creek	169,205	1128	380,711	2538	1410	56%

General Service Area Number	Description	Developed Acres	Total Acreage
GS2C	Along FM 149 from Town Creek WWTP to Caroline (Historical District, commercial along FM 149)	67	96
GS2S	OPR, though Lonestar Estates and College Street (City Hall, Lonestar Church, SF homes along OPR, Sheppard and Lone Star Estates)	75	250
GS2N	Lonestar Parkway to the city limits near MLK and Community Center Drive (Old Iron Works, Mount Pleasant Heights, Town Village, and misc SF on MLK&Community Center Drive, and Lincoln Elementary)	86	268
GS3	Along FM 149 from Caroline to the edge of town and Wade Street to Flagship(Commercial along FM 149 and SH 10, SF south of 105 and Montgomery Middle School.	53	176
GS4	southwest corner along OPR(Planters Village, other SF and a mobile park)	44	49
GS5	the west side of town along SH 105 (Montgomery High School, Montgomery Forest)	105	209

GS6	High School Complex, HOTC and TC Apartments	82	164
GS7	Lonestar Community Center	6	6
GS8	SE FM 149 and Lonestar Parkway (SF along Anna Springs, Harley Drive, Berkely Court, and Nathanael Court)	48	53
Total		566	1271
GS1	SH 105 to Grandview Parkway (Mia Lago, Grandview)	26	335
GS9	Plez Morgan to FM 1097 Summit Park and Waterstone Section 1	225	250
GS10	Northeast side fo the city along FM 1097, Plez Morgan, North Waterstone Dr. ,	65	273
GS10	Along Buffalo Crossing Dr. (Buffalo Crossing, Fernland Park, Memory Park, the Library, and SF along Berkley Dr.	24	44
GS12	Along SH 15 and CB Stewart, south of Clepper. (the Fire Department, Ransom's)	1	18
GS13	North along FM 1097 and Buffalo Crossing Dr. (Summit Business Park)	5	50
GS14	Waterstone Sec 2 and Terra Vista	47	47
GS 15 (Future)	Montgomery Bend Subdivision	0	80
GS 16 (Future)	Redbird Meadows Subdivision	0	378
Total		393	1017

Sanitary Trunkline Size (in)	Area (sq.ft.)	Volume (gpd)(3 fps)	ESFC
4	0.0873	169,205	1128
6	0.1963	380,711	2538
8	0.3491	676,820	4512
10	0.5454	1,057,531	7050
12	0.7854	1,522,844	10152
15	1.2272	2,379,444	15863
18	1.7671	3,426,400	22843

City of Montgomery
Water Impact Fee Analysis
3/1/2024

Demand	2023		2028		2033		Increase	
	ADF	ESFC	ADF	ESFC	ADF	ESFC	ADF	ESFC
Residential	248,350	1,104	671,574	2,985	749,999	3,333	501,649	2,230
Commercial	101,990	453	204,957	911	388,882	1,728	286,892	1,275
Irrigation	83,578	371	83,578	371	83,578	371	0	0
Institutional	41,090	183	56,090	249	56,090	249	15,000	67
City Taps	6,230	28	6,230	28	6,230	28	0	0
Total	481,238	2,139	1,022,429	4,544	1,284,779	5,710	803,541	3,571
Effective Unit Flowrate Per Connection (gpd/connection)		225		225		225		

*Existing and Proposed Connection Counts taken from Attachments C1 & C2 - Water Master Plan

Capacities	2023		2027		2032		Increase	
	ADF	ESFC	ADF	ESFC	ADF	ESFC	ADF	ESFC
Well (gpd)	1,245,000	3,458	1,245,000	3,458	1,245,000	3,458	0	0
Storage (gal)	545,000	2,725	545,000	2,725	545,000	2,725	0	0
Pressure Maintenance (gal)(Hydropneumatic & Elevated)	32,500	1,625	532,500	3,850	532,500	3,850	500,000	2,225
Booster Pump (gpd)	567,568	875	1,054,054	1,625	1,054,054	1,625	486,486	750

Projects	Completed Projects	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	Project Cost (\$)	Allowed Recoverable	Allowed Recoverable (\$)
WATER PLANT NO. 4			\$933,000	\$5,640,000								\$6,573,000	100%	\$6,573,000
WATER PLANT NO 2 IMPROVEMENTS				\$1,232,000								\$1,232,000	26%	\$320,320
ABNER LANE WATERLINE EXTENSION					\$240,000							\$240,000	100%	\$240,000
CB STEWART AND BUFFALO SPRINGS WATERLINE EXTENSION						\$678,000						\$678,000	100%	\$678,000
DOWNTOWN WATERLINE REPLACEMENT PH II (POND TO PRAIRIE)					\$559,000							\$559,000	56%	\$313,040
EAST LONE STAR PARKWAY WATERLINE EXTENSION				\$740,000								\$740,000	100%	\$740,000
HOUSTON ST. WATERLINE REPLACEMENT										\$463,000		\$463,000	56%	\$259,280
OLD PLANTERSVILLE ROAD TO SH 105 WATERLINE EXTENSION (REDBIRD MEADOWS DEVELOPMENT)		\$980,000										\$980,000	100%	\$980,000
POND STREET TO MONTGOMERY ELEMENTARY WATERLINE REPLACEMENT									\$1,089,000			\$1,089,000	75%	\$816,750
SH-105 WATERLINE EXTENSION							\$452,000					\$425,000	100%	\$425,000
WEST LONE STAR PARKWAY WATERLINE EXTENSION							\$1,302,000					\$1,302,000	100%	\$1,302,000
McCOWN and CAROLINE WATERLINE REPLACEMENT		\$370,000										\$370,000	19%	\$70,300
WOMACK CEMETERY RD. TO SH 105 WATERLINE REPLACEMENT								\$1,988,000				\$1,988,000	56%	\$1,104,444
WATER PLANT NO. 3 EXPANSION			\$120,000									\$120,000	33%	\$40,019
WATER PLANT NO. 3 IMPROVEMENTS (COMPLETED)	\$1,001,622											\$1,001,622	44%	\$438,210
DOWNTOWN WATERLINE REPLACEMENT PH I (COMPLETED)	\$1,099,884											\$1,099,884	33%	\$366,798
Summation	\$2,101,506	\$1,350,000	\$1,053,000	\$7,612,000	\$799,000	\$678,000	\$1,754,000	\$1,988,000	\$1,089,000	\$463,000	\$0	\$18,860,506		\$14,668,000

14,668,000

\$7,334,000

Water Impact fee eligible project cost (0% eligible project removed) =	\$14,668,000
Sewer Impact fee eligible project cost (0% eligible project removed) =	\$13,875,920
Total Impact fee eligible project cost (0% eligible project removed) =	\$28,543,920

Impact Fee Calc.	\$/Gal ADF	\$/ESFC	50% Reduction)	
			\$/Gal ADF	\$/ESFC
Water (1 ESFC = 472 gpd)	\$18.25	\$4,107.20	\$9.13	\$2,053.60
Sewer (1 ESFC = 250 gpd)	\$25.79	\$3,868.95	\$12.90	\$1,934.48
Total	\$44.05	\$7,976.15	\$22.02	\$3,988.07

ESFC Table	Water Meter Size	Max Flow	ESFC	\$/ESFC	Sewer		Combined		
					50% Reduct.	\$/ESFC	50% Reduct.	\$/ESFC	
	5/8"	15	1.00	4,107	2,054	3,869	1,934	7,976	3,988
	3/4"	25	1.67	6,859	3,430	6,461	3,231	13,320	6,660
	1"	40	2.67	10,966	5,483	10,330	5,165	21,296	10,648
	1 1/2"	120	8.00	32,858	16,429	30,952	15,476	63,809	31,905
	2"	170	11.33	46,535	23,267	43,835	21,918	90,370	45,185
	3"	350	23.33	95,821	47,910	90,263	45,131	186,084	93,042
	4"	600	40.00	164,288	82,144	154,758	77,379	319,046	159,523
	6"	1200	80.00	328,576	164,288	309,516	154,758	638,092	319,046
	8"	1,800	120.00	492,863	246,432	464,274	232,137	957,138	478,569

Project	Project No.	Description	Ex. Capacity	ESFC	Proposed Capacity	ESFC	Increase	% Change
WATER PLANT NO. 4	1	Well No. 4, EST, Booster Pumps, general site work	-	-	500,000	5,710	5,710	100%
WATER PLANT NO. 2 IMPROVEMENTS	2	Recoat Tanks, Pumps, Generator Addition, Well rework and 125K GST	223,200	992	300,000	1,333	341	26%
ABNER LANE WATERLINE EXTENSION	3	Closes loop from Lonestar to Abner	-	-	1,522,844	4	4	100%
CB STEWART AND BUFFALO SPRINGS WATERLINE EXTENSION	4	Closes loops from Abner to SH 105 via CB Stewart and Buffalo Springs	-	-	1,522,844	6,768	6,768	100%
DOWNTOWN WATERLINE REPLACEMENT PH II (POND TO PRAIRIE)	5	Pond Street to Prairie Street line upsizing to 12"	676,820	3,008	1,522,844	6,768	3,760	56%
EAST LONE STAR PARKWAY WATERLINE EXTENSION	6	Closes loop from TCCS1 to FM 149	-	-	1,522,844	6,768	6,768	100%
HOUSTON ST. WATERLINE REPLACEMENT	7	Replacement of 8" with 12"	676,820	3,008	1,522,844	6,768	3,760	56%
OLD PLANTERSVILLE ROAD TO SH 105 WATERLINE EXTENSION (REDBIRD MEADOWS DEVELOPMENT)	8	Closes loop from Womack to SH 105	-	-	1,522,844	6,768	6,768	100%
POND STREET TO MONTGOMERY ELEMENTARY WATERLINE REPLACEMENT	9	Upsizing existing 6" to an 12" from SH 105 to Montgomery Elementary	380,711	1,692	1,522,844	6,768	5,076	75%
SH-105 WATERLINE EXTENSION	10	Extension of 12" waterline from CB Stewart to Buffalo Springs	-	-	1,522,844	6,768	6,768	100%
WEST LONE STAR PARKWAY WATERLINE EXTENSION	11	Closing loop from HOTC (Emma's Way to future Meadow Ridge	-	-	1,522,844	6,768	6,768	100%
MCCOWN AND CAROLINE WATERLINE REPLACEMENT	12	Replaces existing 4" and 6" with a 8"	169,205	752	676,820	3,008	564	19%
WOMACK CEMETERY TO SH 105 WATERLINE REPLACEMENT	13	Replacement of 8" with 12"	380,711	1,692	1,522,844	6,768	3,760	56%
WATER PLANT NO. 3 EXPANSION	14	Booster Pump Addition, misc improvements	324,324	1,441	486,486	2,162	721	33%
WATER PLANT NO. 3 IMPROVEMENTS (COMPLETED)	15	Upsizing existing 6" to an 12" from SH 105 to Montgomery Elementary	380,711	1,692	676,820	3,008	1,316	44%
DOWNTOWN WATERLINE REPLACEMENT PH I (COMPLETED)	16	Booster Pump Addition, misc improvements	324,324	1,441	486,486	2,162	721	33%

Water Main Size (in)	Area (sq.ft.)	Volume (gpd)(3 fps)	ESFC
4	0.0873	169,205	752
6	0.1963	380,711	1692
8	0.3491	676,820	3008
10	0.5454	1,057,531	4700
12	0.7854	1,522,844	6768