

# COMMITTEE MEETING SIGN IN SHEET

Committee: 105 Committee

Meeting Date: 3/1/23

Chair: French

Meeting Time: 5:30

Minutes Taken By: Sage Keele

## Committee Member:

Jimmy Hollandsworth \*

Tim Brown \*

Mark Messer

Ed Sullivan

Judd Matheny

[Signature] (RYAN FRENCH)

TIM BROWN

TIM MORRIS (6pm)

## Employees Required to Attend:

## Guests:

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Exit 105 Joint Committee  
Meeting Minutes 10-12-22  
City of Manchester – Board Room  
5:30 PM

IN ATTENDANCE: Representing the City of Manchester were Aldermen Ryan French, Mark Messick, and Bob Bellamy. Coffee County Commission Representatives were Tim Morris, Jimmy Hollandsworth, and Tim Brown. Also, in attendance were Scot St. John of St. John Engineering, Coffee County Mayor Matheny, Coffee County Attorney North, Roger Chambers, Sally Singles, Sarah Bradley, and John Coffelt from Manchester Times.

5:30 PM Meeting called to order

Alderman French opened the meeting discussing the conception of the Exit 105 Joint Committee. Vice Mayor Messick made a motion to appoint Alderman French as the Chairman and seconded by Commissioner Brown.

Alderman French noted everyone present had a copy of the minutes from 2019, and discussed the original proposal to expand to North Coffee School.

Alderman French turned over the meeting to City Engineer Scot St. John to discuss the original proposals. St. John discussed the two original options that were to serve only the North Coffee School. (attached evaluation)

Engineer St. John discussed:

- Option 1, a Sewer Expansion Proposal that serves only North Coffee School traveling down a narrow corridor on Hwy. 41. (attached map)
- Option 2, a Sewer Expansion Proposal that serves North Coffee School and the surrounding corridor of Hwy. 41. (attached map)
- Option 3, a Sewer Expansion Proposal that serves a much larger area down hwy. 41 corridor and exit 105. (attached map)
- Option 1, Proposed UGB Boundary Expansion Map (attached map)
- Option 2, Proposed UGB Boundary Expansion Map (attached map)

Alderman French stated that an independent committee needed to review the UGB expansion with Tullahoma in on the conversation. French discussed they had leaned towards Option 3 of the sewer service expansion. French stated we are not interested in a mass annexation project.

Commissioner Morris discussed the current State Annexation Laws. Commissioner Morris discussed the need to look out 20 years.

Commissioner Morris asked if Option 2 of the UGB Boundary map was included in Option 3 of the Sewer Expansion Proposal. Engineer St. John stated no, but UGB Option 2 misses some of the Option 3 Sewer Expansion area, but very close. St. John stated that Option 2 of the UGB expansion map fits more with Option 3 of the Sewer Expansion Proposal and can be tweaked.

Alderman French made a motion to focus on Option 3 of the Sewer Option Proposal and seconded by Alderman Morris. The motion passed 6-0.

Vice Mayor Messick made a motion to focus on Option 2 of the UGB map with tweaks made to fit Option 3 of the Sewer Expansion Proposal. Commissioner Hollandsworth seconded the motion. A discussion ensued with the committee and Engineer St. John on matching the UGB map to the Option 3 of the Sewer Proposal. The motion passed 6-0.

Alderman French discussed the next step would be to reanalyze the cost numbers that were previously presented to the prior committee. Engineer St. John discussed Option 3 Sewer Expansion Proposal and prices have increased.

Alderman French discussed prior conversations on how to pay for the project. Alderman French stated he would like to get Lorie Fisher with SCTDD back involved in the discussions. Vice Mayor Messick suggested we look at all options out there. Commissioner Hollandsworth discussed getting North Coffee School involved in the conversation.

Alderman French made a motion schedule the next meeting Wednesday, November 16<sup>th</sup>, at 5:30 pm in the Board Room at Manchester City Hall. The motion was seconded by Commissioner Hollandsworth and passed 6-0.

Alderman French made the motion for adjournment at 6:35 pm and seconded by County Commissioner Hollandsworth.



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Ryan French, Chairman

***I-24 Exit 105 Sanitary Sewer Evaluation***  
***Coffee County***  
***March 15, 2018***  
***108-69***

## **I. Scope**

The City of Manchester Water & Sewer Department has been approached by Coffee County and the Coffee County School Board to consider options for sanitary sewer service to the North Coffee Elementary School as well as to a limited area for commercial development at the interstate interchange. MWSD has tasked St. John Engineering, LLC to evaluate the existing sewer system's ability to handle the increased sewer demands from the I-24 Exit 105 area and to identify any needed upgrades as a result of this added service area.

This report will identify sewer demands at the I-24 Exit 105 area, evaluate existing sewer system capacities, consider proposed upgrades to the system, and develop preliminary cost estimates for the infrastructure.

## **II. Exit 105 Sewer Options**

A Coffee County representative, MWSD staff, and SJE staff met to discuss the sanitary sewer needs at the I-24 Exit 105 area. It was determined to evaluate two options:

Option 1- Sewer service to North Coffee Elementary School only with a maximum enrollment of 750 students plus staff.

Option 2- Sewer service to North Coffee Elementary School with 750 students plus staff as well as two 50 room hotels and limited commercial facilities (one 2400 sf retail store, one 100 seat restaurant, and two convenience stores). No residential housing would be connected.

It was discussed that the maximum sewer flow demands needed to be established on the front end and the service area restricted to this demand. A written agreement would need to be established between the City and County related to this service area and the maximum allowable sewer flows.

## **III. Description of Existing Sanitary Sewer System**

The existing municipal sanitary sewer system operated by MWSD is located within the current city limits with the closest existing sewer lines to the Exit 105 area being at US Hwy 41/Northridge subdivision. The Northridge Sewer Pump Station and the Creekwood Pump Station discharge to the gravity sewer lines that flow directly to the Fredonia Road

Pump Station. The Fredonia Road Pump Station collects all flow west of the Duck River Bridge and pumps across the bridge via a 6" force main to the gravity sewer manhole near Melrose Market/Old Stone Fort service entry road which flows by way of 8" gravity lines to the Duncan Street Pump Station. The Duncan Street Pump Station is a large capacity station that lifts the sewerage directly to the treatment plant.

As shown on the attached map, the Northridge Pump Station and Creekwood Pump Station have design capacities of 200 gpm and 100 gpm respectively. These stations are small capacity stations intended to serve the immediate area draining to them and are not intended to accept flow from other lift stations.

The Fredonia Road Pump Station is currently a 220 gpm rated station. The sewer force main was upsized during the Hwy 41 widening project to a 6" line from the pump station, across the new Duck River Bridge, and along Hwy 41 to the Melrose Market area manhole. This force main has the capacity to handle over 500 gpm with acceptable velocities and friction loss. The 8" gravity lines that the current force main discharges into could become a limiting factor in capacity. The sewer lines near Duncan Street increase in size to 21" leading to the Duncan Street Pump Station.

#### **IV. Proposed Sewer System Infrastructure**

Providing municipal sewer service to North Coffee Elementary School would require installing a new pump station in the lower area adjacent to the school. Gravity sewer lines extending from this pump station to the commercial area on the north side of I-24 would provide the needed service to these properties. An additional pump station would be needed on the south side of the I-24 interchange to serve the commercial properties on that side of the interstate.

For Option 1 as outlined above, the sewer flows would result in an average demand of 20,000 gpd and yield a needed pump station capacity of approximately 160 gpm.

For Option 2 as outlined above, the sewer flows would result in an average demand of 27,000 gpd and yield a needed pump station of approximately 220 gpm.

A sewer force main leading from the new pump station to the existing city sewer system would extend approximately 23,600 linear feet along US Hwy 41 and connect to the 8" gravity sewer manhole near Ibis Lane/Lakeview Street. This force main would have to be bored and cased under I-24 at Exit 105. Due to the length and head conditions (approximately 70 feet of static head plus friction head), a 6" force main would likely be required for either Option 1 or 2 as compared to a 4" force main.

Based on the needed demands for Option 1 or Option 2, the Fredonia Road Pump Station would be required to be upsized from its current capacity of 220 gpm. The pumps, controls, and electrical service and components would have to be replaced to meet the increased demands. The existing 8" gravity sewer mains from Ibis Lane/Lakeview Street

to the Fredonia Road Pump Station would need to be further evaluated at the time of final design, but it is anticipated that they will be sufficient to handle the increased flow from the Exit 105 Pump Station.

## V. Project Costs

The anticipated project cost for Option 2 is as follows:

|                            |                    |
|----------------------------|--------------------|
| Pump Station               | \$175,000          |
| Force Main                 | \$630,000          |
| Fredonia P.S. Upgrades     | \$80,000           |
| Construction Contingency   | <u>\$75,000</u>    |
| <b>Construction Cost</b>   | <b>\$960,000</b>   |
| Survey/Design              | \$50,000           |
| Bidding Services           | \$3,000            |
| Construction Admin         | \$6,000            |
| Permits                    | \$3,750            |
| ROW Acquisition            | \$10,000           |
| Legal                      | <u>\$2,500</u>     |
| <b>Administrative Cost</b> | <b>\$75,250</b>    |
| <b>Total Project Cost</b>  | <b>\$1,035,250</b> |

This estimate does not include the cost for a pump station on the south side of I-24 interchange or gravity sewer line extensions to future commercial sites.

The anticipated project cost for Option 1 is approximately equal to \$1,035,250 due to the minimal savings in pump costs at the anticipated head conditions.

## VI. Summary

The cost to provide sanitary sewer to the North Coffee Elementary School is slightly over \$1,000,000. To provide the capability to serve a limited commercial area in addition to the school, the project cost is similar without factoring in the cost for gravity sewer line extensions to the commercial lots or the cost for adding a pump station on the south side of the interstate. Potentially, the commercial developer could be required to pay the cost for gravity sewer line extensions to his site, but this could be a deterrent to most small-scale developments. The cost to enable developments with sewer on the south side of the interstate would come at an additional cost of a pump station, limited force main length, gravity lines, and design fees. The cost can vary depending on the site location to be serviced, but estimated at \$275,000. Therefore, the cost of Option 2 increases to over \$1.3 million for sewer service on both sides of the interstate.

With either option being selected, written agreements would need to in place between the County and City on the maximum flow rates (maximum number and type of developments) that could be generated in this sewer service area due to the potential impact and costs for improvements in the existing city system.

**PROJECT COST ESTIMATE**  
**I-24 Exit 105 Sanitary Sewer Evaluation**  
**Option #1**  
**PROJECT #: 108-69**  
**Prepared by: St. John Engineering, LLC**  
**Oct. 2020**

| NO. | ITEM  | ESTIMATED QUANTITIES | UNIT | UNIT PRICE    | TOTAL PRICE     |
|-----|---|----------------------|------|---------------|-----------------|
| 1   | 4" FM                                       | 6,265                | LF   | \$ 27.50      | \$ 172,287.50   |
| 2   | 6" FM                                       | 23,600               | LF   | \$ 30.00      | \$ 708,000.00   |
| 3   | Pump Station (North of I-24)                | 1                    | EA   | \$ 175,000.00 | \$ 175,000.00   |
| 4   | Pump Station (South of I-24)                | 1                    | EA   | \$ 175,000.00 | \$ 175,000.00   |
| 5   | 8" Gravity Sewer (North of I-24)            | 2,000                | LF   | \$ 50.00      | \$ 100,000.00   |
| 6   | MH (North of I-24)                          | 8                    | EA   | \$ 3,500.00   | \$ 28,000.00    |
| 7   | 8" Gravity Sewer (South of I-24)            | 2,000                | LF   | \$ 50.00      | \$ 100,000.00   |
| 8   | MH (South of I-24)                          | 6                    | EA   | \$ 3,500.00   | \$ 21,000.00    |
| 9   | I-24 Bore with Casing                       | 225                  | LF   | \$ 300.00     | \$ 67,500.00    |
| 10  | HWY 41 (N) Bore with Casing (Gravity Sewer) | 70                   | LF   | \$ 275.00     | \$ 19,250.00    |
| 11  | HWY 41 (S) Bore with Casing (Gravity Sewer) | 70                   | LF   | \$ 275.00     | \$ 19,250.00    |
| 12  | Air & Vacuum Valves                         | 4                    | EA   | \$ 5,000.00   | \$ 20,000.00    |
| 13  | 6" Check Valve                              | 2                    | EA   | \$ 5,000.00   | \$ 10,000.00    |
| 14  | 6" Gate Valves at I-24                      | 2                    | EA   | \$ 5,550.00   | \$ 11,100.00    |
| 15  | Hwy 41 Bore with Casing (FM)                | 500                  | LF   | \$ 200.00     | \$ 100,000.00   |
| 16  | Construction Contingency (5%)               | 1                    | LS   | \$ 86,319.38  | \$ 86,319.38    |
|     |   |                      |      | SUBTOTAL      | \$ 1,812,706.88 |

| NO.      | ITEM                        | TOTAL PRICE   |
|----------|-----------------------------|---------------|
| 1        | Survey                      | \$ 20,000.00  |
| 2        | Design                      | \$ 70,000.00  |
| 3        | Bidding                     | \$ 3,500.00   |
| 4        | Construction Administration | \$ 20,000.00  |
| 5        | Permits                     | \$ 4,000.00   |
| 6        | ROW                         | \$ 50,000.00  |
| 7        | Legal                       | \$ 12,500.00  |
| SUBTOTAL |                             | \$ 180,000.00 |

TOTAL                   \$ 1,992,706.88  
SAY                         \$2,000,000.00

**PROJECT COST ESTIMATE**  
**I-24 Exit 105 Sanitary Sewer Evaluation**  
**Option #2**  
**PROJECT #: 108-69**  
**Prepared by: St. John Engineering, LLC**  
**Oct. 2020**

| NO. | ITEM                                  | ESTIMATED QUANTITIES | UNIT | UNIT PRICE    | TOTAL PRICE   |
|-----|---------------------------------------|----------------------|------|---------------|---------------|
| 1   | 4" FM                                 | 6,265                | LF   | \$ 27.50      | \$ 172,287.50 |
| 2   | 6" FM                                 | 11,000               | LF   | \$ 30.00      | \$ 330,000.00 |
| 3   | 8" FM                                 | 9,000                | LF   | \$ 37.50      | \$ 337,500.00 |
| 4   | 10" FM                                | 7,000                | LF   | \$ 45.00      | \$ 315,000.00 |
| 5   | P.S. (North of I-24)                  | 1                    | EA   | \$ 175,000.00 | \$ 175,000.00 |
| 6   | P.S. (South of I-24)                  | 2                    | EA   | \$ 200,000.00 | \$ 400,000.00 |
| 7   | 8" Gravity Sewer (North of I-24)      | 2,000                | LF   | \$ 50.00      | \$ 100,000.00 |
| 8   | 8" SA (South of I-24)                 | 3,870                | LF   | \$ 50.00      | \$ 193,500.00 |
| 9   | 8" SA (3rd PS)                        | 4,750                | LF   | \$ 50.00      | \$ 237,500.00 |
| 10  | SA Manhole                            | 38                   | EA   | \$ 3,500.00   | \$ 133,000.00 |
| 11  | I-24 Bore with Casing                 | 225                  | LF   | \$ 300.00     | \$ 67,500.00  |
| 12  | HWY 41 (N) Bore with Casing (Gravity) | 70                   | LF   | \$ 275.00     | \$ 19,250.00  |
| 13  | HWY 41 (S) Bore with Casing (Gravity) | 210                  | LF   | \$ 275.00     | \$ 57,750.00  |
| 14  | Air & Vacuum Valves                   | 6                    | EA   | \$ 5,000.00   | \$ 30,000.00  |
| 15  | 6" Check Valve                        | 4                    | EA   | \$ 5,000.00   | \$ 20,000.00  |
| 16  | 6" Gate Valves at I-24                | 2                    | EA   | \$ 5,550.00   | \$ 11,100.00  |
| 17  | Hwy 41 Bore with Casing (FM)          | 700                  | LF   | \$ 200.00     | \$ 140,000.00 |
| 18  | Fredonia Rd P.S. Replacement          | 1                    | EA   | \$ 250,000.00 | \$ 250,000.00 |
| 19  | 10" FM From Fredonia to Duncan St.    | 6000                 | LF   | \$ 45.00      | \$ 270,000.00 |
| 20  | River Crossing- 10" FM                | 1                    | EA   | \$ 250,000.00 | \$ 250,000.00 |

|    |                               |   |    |               |                 |
|----|-------------------------------|---|----|---------------|-----------------|
| 21 | Construction Contingency (5%) | 1 | LS | \$ 175,469.38 | \$ 175,469.38   |
|    |                               |   |    | SUBTOTAL      | \$ 3,684,856.88 |

| NO.      | ITEM                        | TOTAL PRICE   |
|----------|-----------------------------|---------------|
| 1        | Survey/Design               | \$ 173,000.00 |
| 2        | Bidding                     | \$ 9,000.00   |
| 3        | Construction Administration | \$ 30,000.00  |
| 4        | Permits                     | \$ 10,000.00  |
| 5        | ROW                         | \$ 70,000.00  |
| 6        | Legal                       | \$ 20,000.00  |
| SUBTOTAL |                             | \$ 312,000.00 |

TOTAL                   \$ 3,996,856.88  
SAY                         \$4,000,000.00

**Notes:**

1. Cost estimate does not include upgrades to Duncan Street Pump Station or to the WWTP.

**PROJECT COST ESTIMATE**  
**I-24 Exit 105 Sanitary Sewer Evaluation**  
**Option #3**  
**PROJECT #: 108-69**  
**Prepared by: St. John Engineering, LLC**  
**Oct. 2020**

| NO. | ITEM   | ESTIMATED QUANTITIES | UNIT | UNIT PRICE    | TOTAL PRICE     |
|-----|--|----------------------|------|---------------|-----------------|
| 1   | 4" SA Force Main                               | 6,265                | LF   | \$ 27.50      | \$ 172,287.50   |
| 2   | 8" SA Force Main                               | 11,000               | LF   | \$ 37.50      | \$ 412,500.00   |
| 3   | 10" SA Force Main                              | 9,000                | LF   | \$ 45.00      | \$ 405,000.00   |
| 4   | 12" SA Force Main                              | 7,000                | LF   | \$ 55.00      | \$ 385,000.00   |
| 5   | SA Pump Station (North of I-24)                | 1                    | EA   | \$ 175,000.00 | \$ 175,000.00   |
| 6   | SA Pump Station (South of I-24)                | 2                    | EA   | \$ 200,000.00 | \$ 400,000.00   |
| 7   | 8" Gravity Sewer (North of I-24)               | 2,000                | LF   | \$ 50.00      | \$ 100,000.00   |
| 8   | 8" Gravity Sewer (South of I-24)               | 3,870                | LF   | \$ 50.00      | \$ 193,500.00   |
| 9   | 8" Gravity Sewer (at 3rd PS)                   | 4,750                | LF   | \$ 50.00      | \$ 237,500.00   |
| 10  | SA Manhole                                     | 38                   | EA   | \$ 3,500.00   | \$ 133,000.00   |
| 11  | I-24 Bore with Casing                          | 225                  | LF   | \$ 300.00     | \$ 67,500.00    |
| 12  | HWY 41 (N) Bore with Casing (Gravity)          | 70                   | LF   | \$ 275.00     | \$ 19,250.00    |
| 13  | HWY 41 (S) Bore with Casing (Gravity)          | 210                  | LF   | \$ 275.00     | \$ 57,750.00    |
| 14  | Air & Vac Valves                               | 6                    | EA   | \$ 5,000.00   | \$ 30,000.00    |
| 15  | 6" Check Valve                                 | 4                    | EA   | \$ 5,000.00   | \$ 20,000.00    |
| 16  | 6" Gate Valves (at I-24)                       | 2                    | EA   | \$ 5,500.00   | \$ 11,000.00    |
| 17  | Hwy 41 Bore with Casing (FM)                   | 700                  | LF   | \$ 200.00     | \$ 140,000.00   |
| 18  | Fredonia Rd P.S. Replacement                   | 1                    | EA   | \$ 500,000.00 | \$ 500,000.00   |
| 19  | 12" FM From Fredonia to Duncan St.             | 6000                 | LF   | \$ 55.00      | \$ 330,000.00   |
| 20  | River Crossing- 12" FM                         | 1                    | LS   | \$ 250,000.00 | \$ 250,000.00   |
| 21  | 12" FM - bore with Casing (Fredonia to Duncan) | 480                  | LF   | \$ 200.00     | \$ 96,000.00    |
| 22  | Construction Contingency (5%)                  | 1                    | LS   | \$ 206,764.38 | \$ 206,764.38   |
|     |  |                      |      | SUBTOTAL      | \$ 4,342,051.88 |

| NO. | ITEM                        | TOTAL PRICE            |
|-----|-----------------------------|------------------------|
| 1   | Survey/Design               | \$ 205,000.00          |
| 2   | Bidding                     | \$ 12,000.00           |
| 3   | Construction Administration | \$ 35,000.00           |
| 4   | Permits                     | \$ 10,000.00           |
| 5   | ROW                         | \$ 80,000.00           |
| 6   | Legal                       | \$ 25,000.00           |
|     |                             | SUBTOTAL \$ 367,000.00 |

TOTAL           \$ 4,709,051.88  
SAY               \$ 4,700,000.00

**Notes:**

1. Cost estimate does not include upgrades to Duncan Street Pump Station or to the WWTP.

**PROJECT COST ESTIMATE**  
**I-24 Exit 105 Water System Evaluation**  
**Option #3**  
**PROJECT #: 108-69**  
**Prepared by: St. John Engineering, LLC**  
**Jan-21**

| NO. | ITEM                             | ESTIMATED QUANTITIES | UNIT | UNIT PRICE      | TOTAL PRICE     |
|-----|----------------------------------|----------------------|------|-----------------|-----------------|
| 1   | 1 MG Water Tank                  | 1                    | LS   | \$ 2,000,000.00 | \$ 2,000,000.00 |
| 2   | Pump Statio Upgrades             | 1                    | LS   | \$ 350,000.00   | \$ 350,000.00   |
| 3   | 12" Water Line                   | 12,250               | LF   | \$ 65.00        | \$ 796,250.00   |
| 4   | 8" Water Line                    | 4,300                | LF   | \$ 55.00        | \$ 236,500.00   |
| 5   | 6" Water Line                    | 2900                 | LF   | \$ 45.00        | \$ 130,500.00   |
| 6   | I-24 Bore with Casing            | 225                  | LF   | \$ 300.00       | \$ 67,500.00    |
| 7   | Air & Vacuum Release Valves      | 3                    | EA   | \$ 5,000.00     | \$ 15,000.00    |
| 8   | Fire Hydrant                     | 10                   | EA   | \$ 5,500.00     | \$ 55,000.00    |
| 9   | 12" Gate Valve                   | 5                    | EA   | \$ 3,500.00     | \$ 17,500.00    |
| 10  | 8" Gate Valve                    | 3                    | EA   | \$ 2,750.00     | \$ 8,250.00     |
| 11  | 6" Gate Valve                    | 5                    | EA   | \$ 2,000.00     | \$ 10,000.00    |
| 12  | 10" x 10" Tapping Sleeve & Valve | 2                    | EA   | \$ 5,000.00     | \$ 10,000.00    |
| 13  | Bore W/O Caing                   | 160                  | LF   | \$ 150.00       | \$ 24,000.00    |
| 14  | 6" x 6" TS & U                   | 3                    | EA   | \$ 3,000.00     | \$ 9,000.00     |
| 15  | Pavement Repair                  | 200                  | LF   | \$ 50.00        | \$ 10,000.00    |
| 16  | Erosion Control                  | 1                    | LS   | \$ 15,000.00    | \$ 15,000.00    |
| 17  | Construction Contingency (5%)    | 1                    | LS   | \$ 187,725.00   | \$ 187,725.00   |
|     |                                  |                      |      | SUBTOTAL        | \$ 3,942,225.00 |

| NO.      | ITEM                        | TOTAL PRICE   |
|----------|-----------------------------|---------------|
| 1        | Survey/Design               | \$ 185,000.00 |
| 2        | Bidding                     | \$ 10,000.00  |
| 3        | Construction Administration | \$ 40,000.00  |
| 4        | Permits                     | \$ 5,000.00   |
| 5        | ROW                         | \$ 50,000.00  |
| 6        | Legal                       | \$ 20,000.00  |
| SUBTOTAL |                             | \$ 310,000.00 |

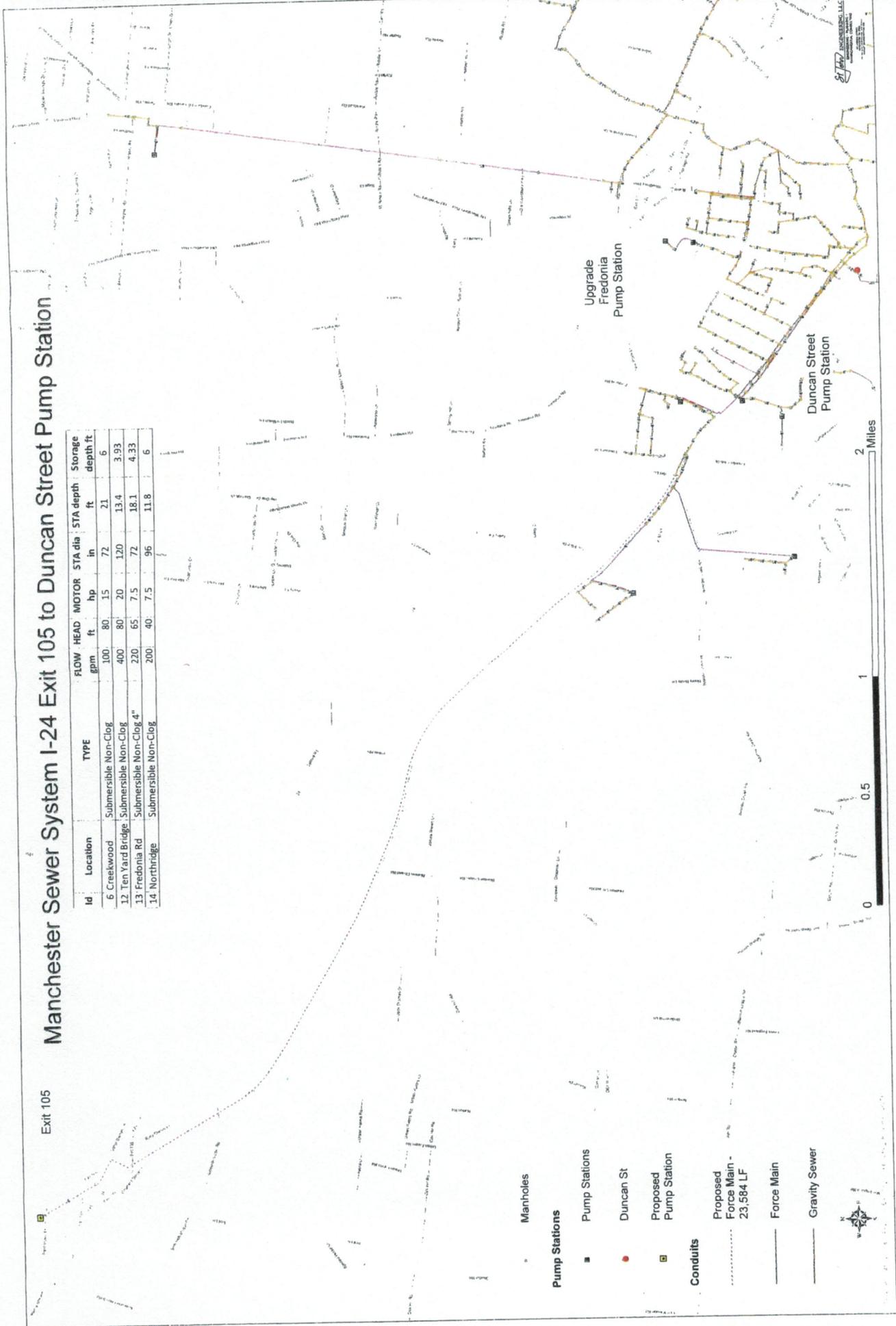
TOTAL                   \$ 4,252,225.00  
SAY                         \$ 4,300,000.00

**Notes:**

1. Cost estimate does not include any upgrades to or removal of the existing North Coffee Water Tank.

# Manchester Sewer System I-24 Exit 105 to Duncan Street Pump Station

| Id | Location        | TYPE                    | FLOW |    | MOTOR hp | STA dia in | STA depth ft | Storage depth ft |
|----|-----------------|-------------------------|------|----|----------|------------|--------------|------------------|
|    |                 |                         | gpm  | ft |          |            |              |                  |
| 6  | Creekwood       | Submersible Non-Clog    | 100  | 80 | 15       | 72         | 21           | 6                |
| 12 | Ten Yard Bridge | Submersible Non-Clog    | 400  | 80 | 20       | 120        | 13.4         | 3.93             |
| 13 | Fredonia Rd     | Submersible Non-Clog 4" | 220  | 65 | 7.5      | 72         | 18.1         | 4.33             |
| 14 | Northridge      | Submersible Non-Clog    | 200  | 40 | 7.5      | 96         | 11.8         | 6                |



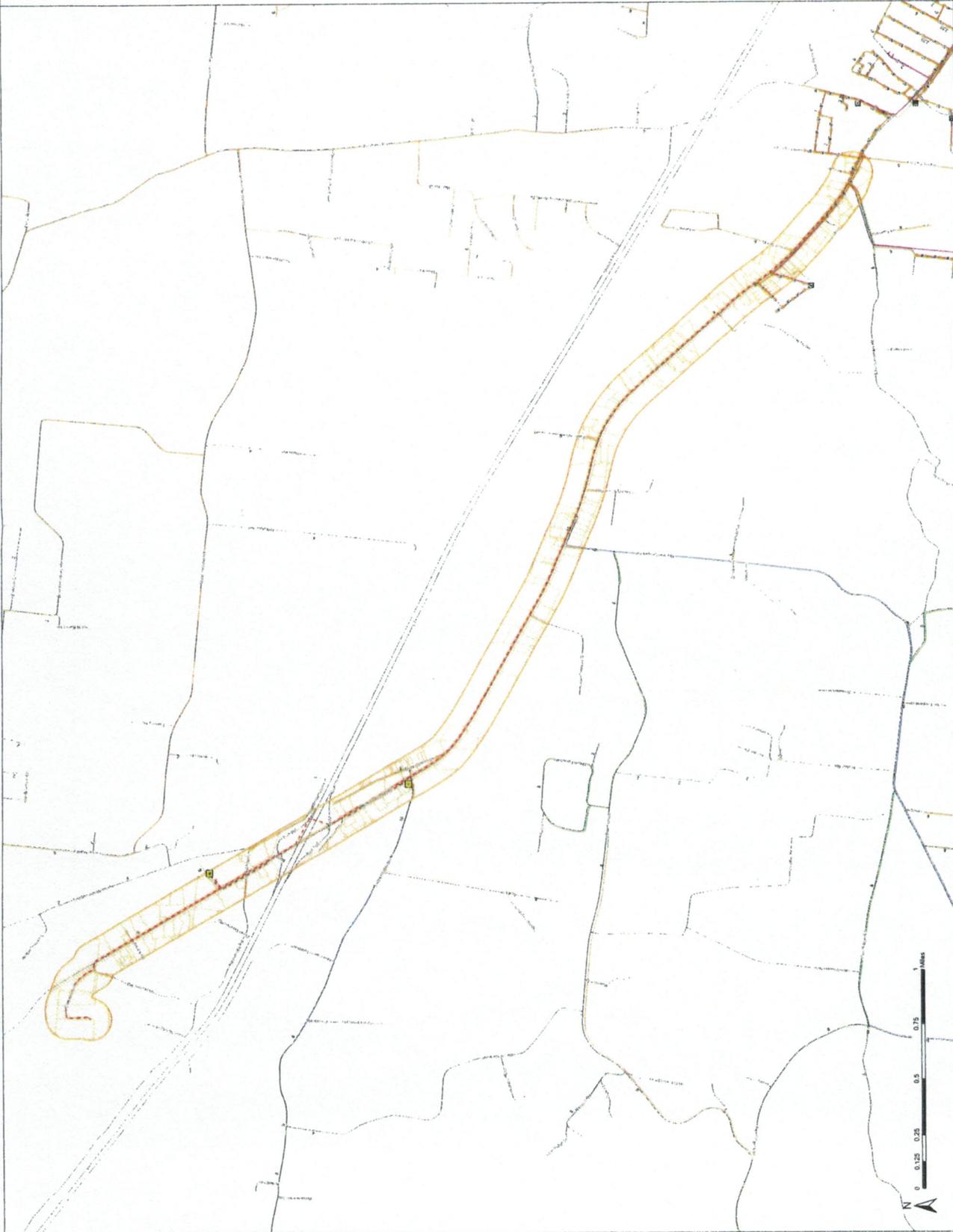
- Manholes**
- Pump Stations**
- Pump Stations
- Duncan St
- Proposed Pump Station
- Conduits**
- Proposed Force Main - 23,584 LF
- Force Main
- Gravity Sewer



**Manchester / Coffee County  
Potential Sewer System  
Service Area**

**OPTION 1**

- Proposed Force Main - 30,510 LF
- Proposed Gravity Sewer - 4,000 LF
- Option 1 - 500' Buffer Parcels (279) Acres (386)
- Pump Stations
- Proposed Pump Station
- Pump Stations
- Duncan St
- Existing Water Line Diameter
- 0.75
- 2
- 2.25
- 4
- 6
- 8
- 10
- UNK



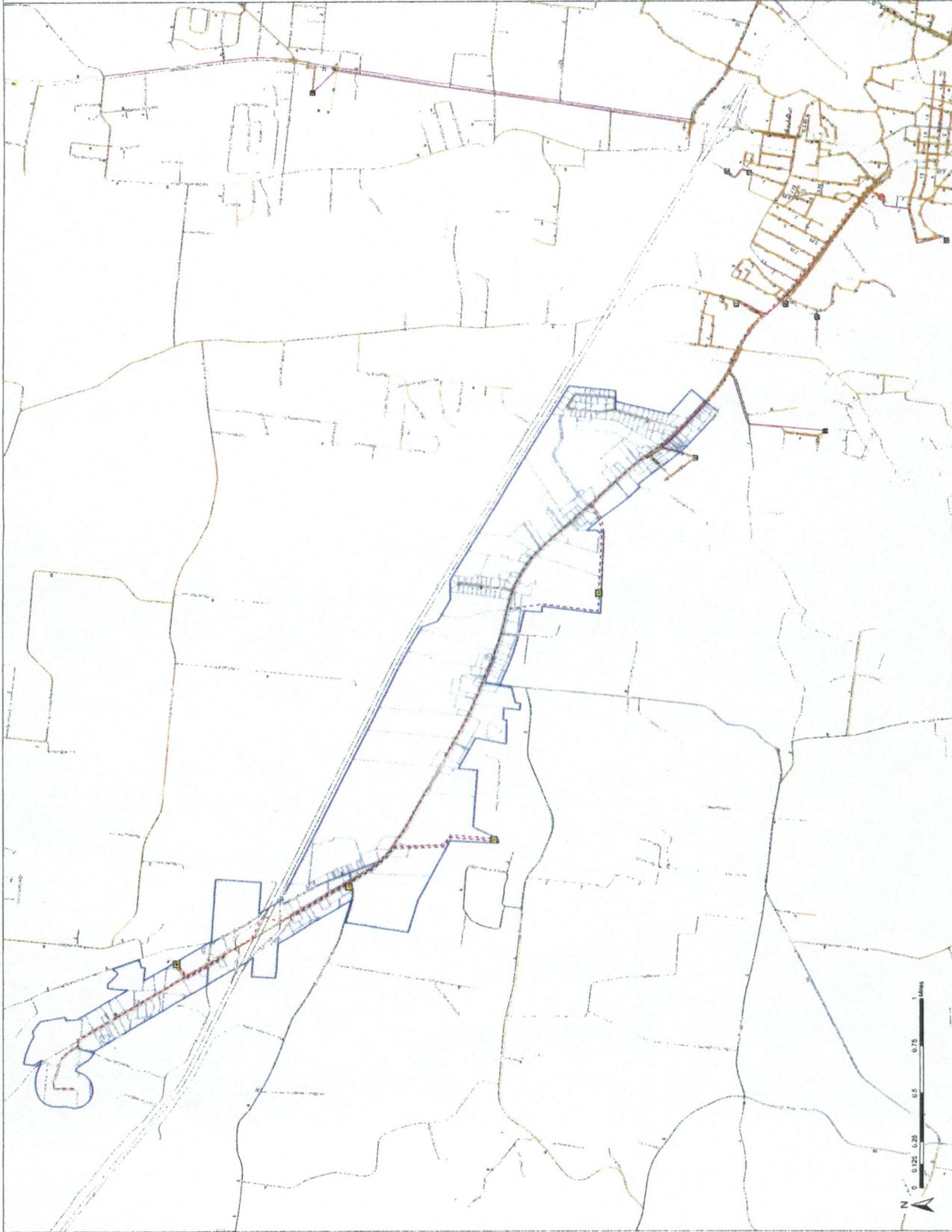
ST. JOHN ENGINEERING, LLC  
 1400 S. 10th St.  
 P. 831-728-2638  
 CREATED: 10/21/2020  
 By: A. Pruitt  
 Project: 108-69  
 108-69\_SewerEva\_Option\_1.mxd



**Manchester / Coffee County  
Potential Sewer System  
Service Area**

**OPTION 2**

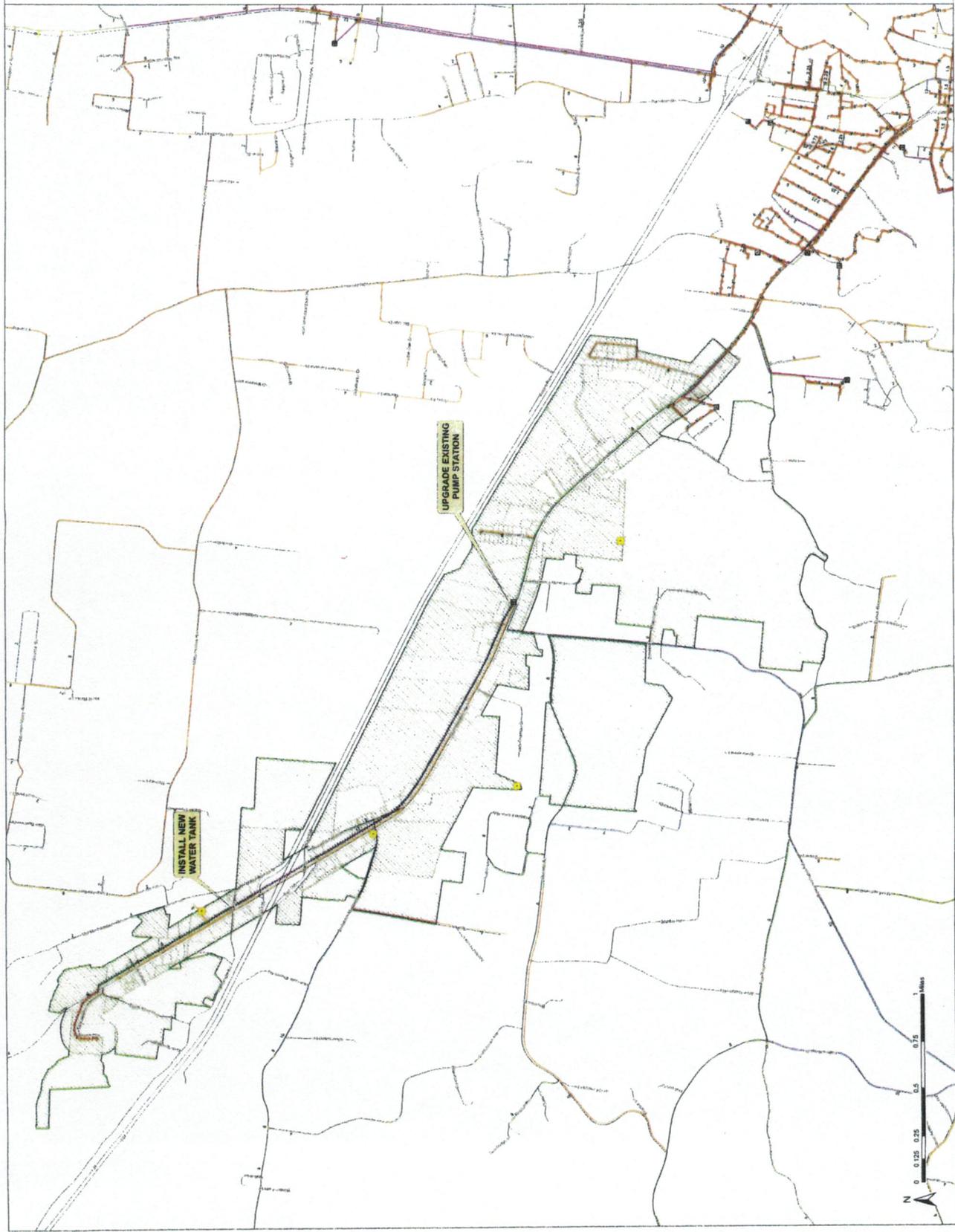
- Proposed Force Main - 43,790 LF
- Proposed Gravity Sewer - 10,620 LF
- Option 2 Areas (1977)
- Option 2 Areas (1971)
- Pump Stations**
  - Proposed Pump Station
  - Pump Stations
  - Duncan St
- Existing Water Line Diameter**
  - 0.75
  - 1.5
  - 2
  - 2.25
  - 4
  - 6
  - 8
  - 10
  - 12
  - UNK



**Manchester / Coffee County  
Potential Water System  
Service Area**

**OPTION 3**

- Option 3
  - Parcels (134)
  - Acres (3,804)
- Pump Stations**
- Proposed Pump Station
  - Pump Station
- Proposed Water Line Diameter**
- Proposed 6" Water Line - 2,368 LF
  - Proposed 8" Water Line - 4,261 LF
  - Proposed 12" Water Line - 12,337 LF
- Existing Water Line Diameter**
- 0.75
  - 1.5
  - 2
  - 2.25
  - 4
  - 6
  - 8
  - 10
  - 12
  - UNK



ST JOHN ENGINEERS, LLC  
MANCHESTER, TN 37355  
P 615-728-2636  
CREATED: 10/20/21  
By: K. P. Williams  
Project: 108-89  
108-89\_WaterLine\_Option\_3.mxd

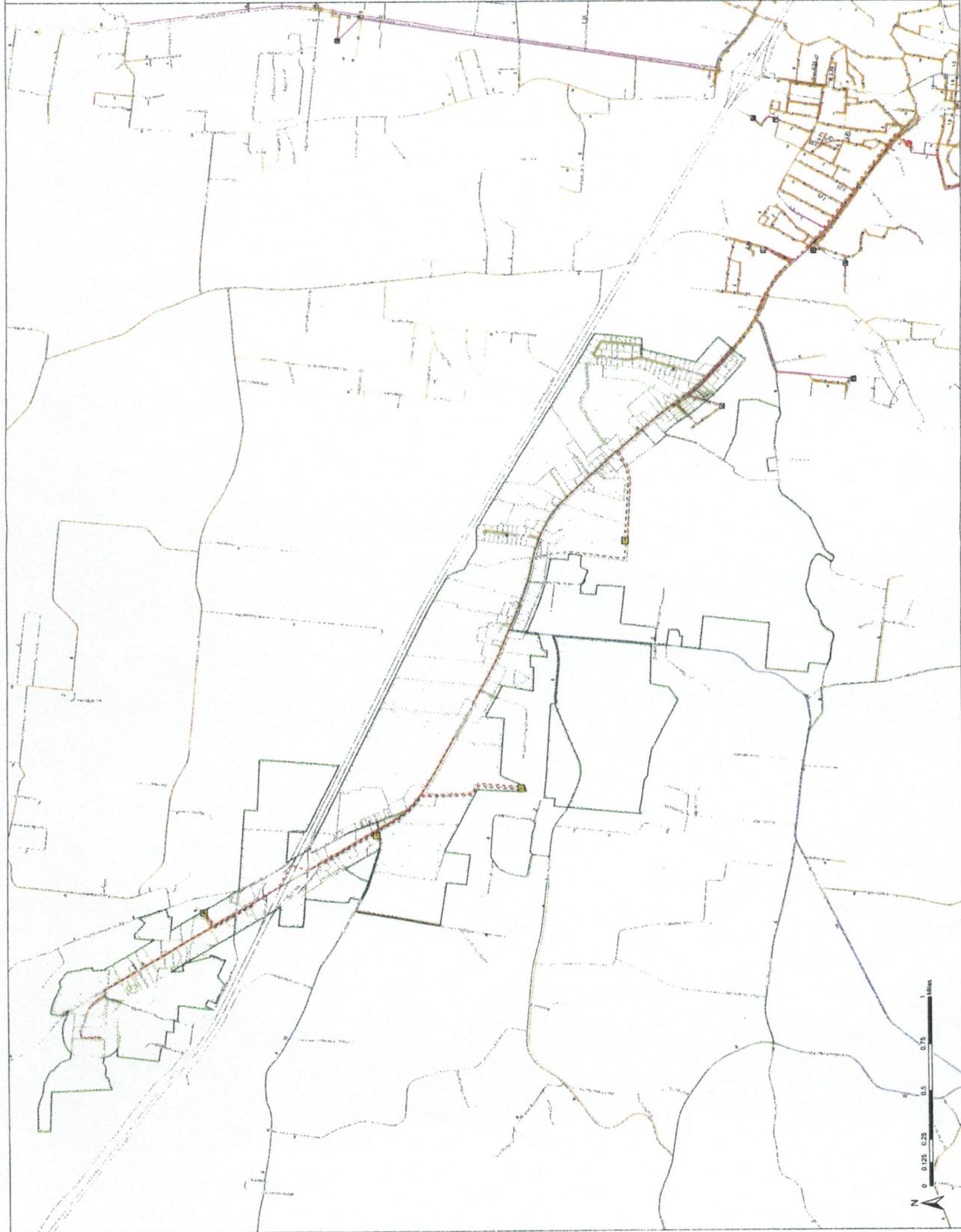
**Manchester / Coffee County  
Potential Sewer System  
Service Area**

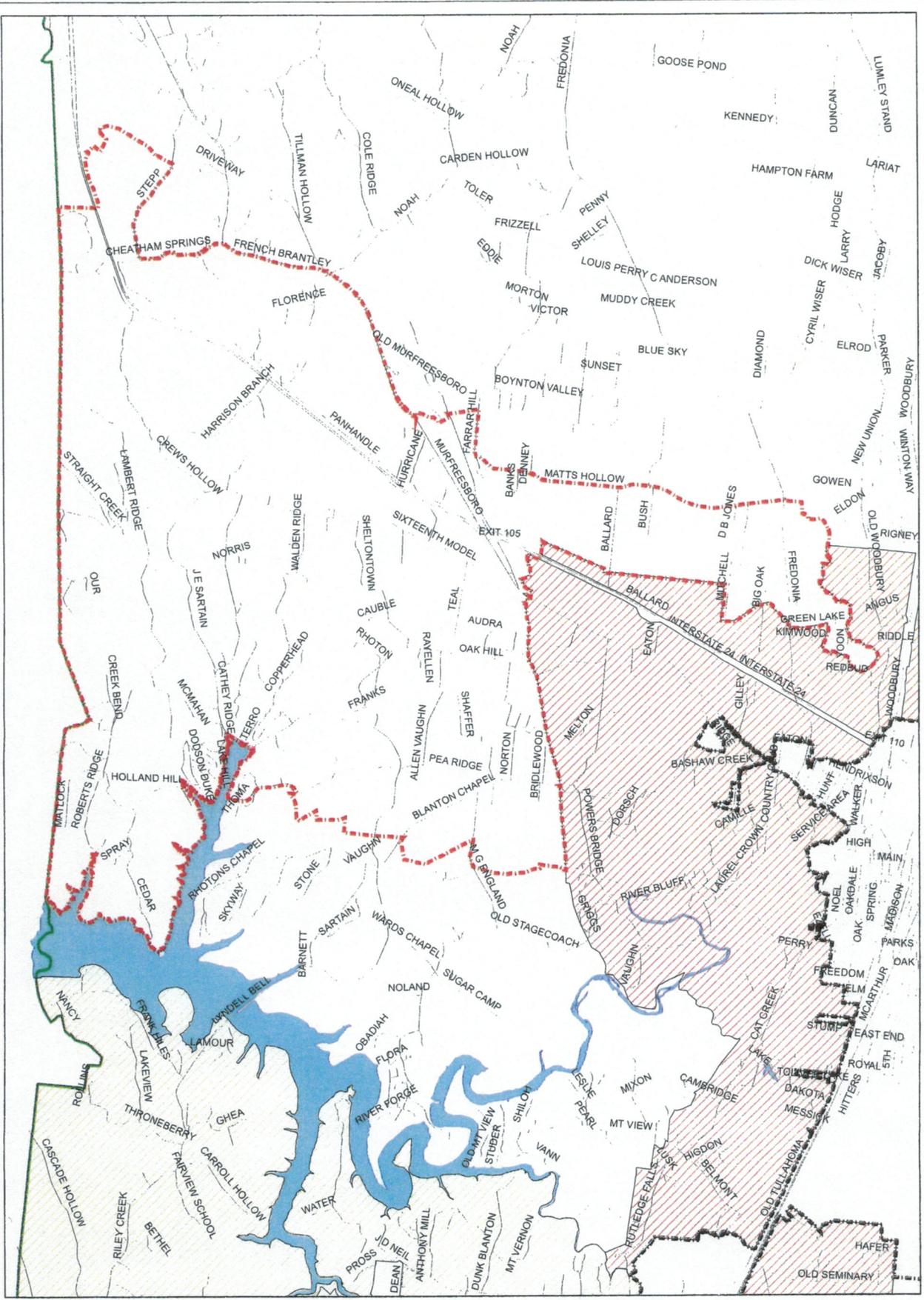
**OPTION 3**

- Proposed Force Main - 43,790 LF
- Proposed Gravity Sewer - 10,620 LF
- Option 3 Parcels (334) Acres (3,804)
- Pump Stations
- Proposed Pump Station
- Pump Stations
- Duncan St.
- Existing Water Line Diameter

- 0.75
- 1.5
- 2
- 2.25
- 4
- 6
- 8
- 10
- 12
- UNK

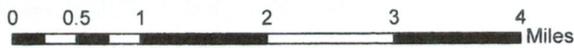
ST. JAMES ENGINEERING, LLC  
MANCHESTER, TN 37355  
P. 615.726.2628  
CREATED: 09/22/2020  
By: M. Pugh  
Project: 108-69  
108-69\_SewerEval\_Option\_3.mxd





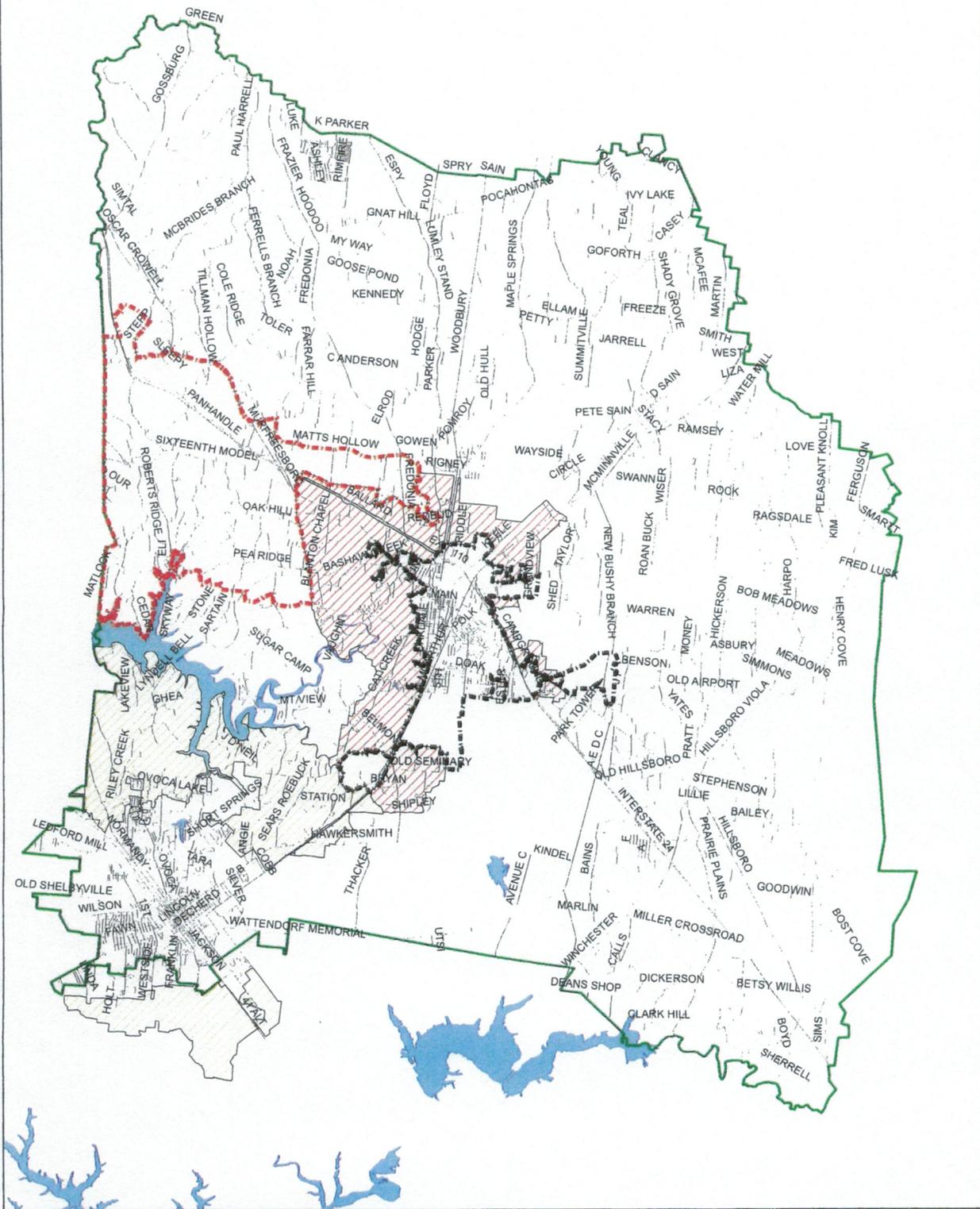
**PROPOSED UGB BOUNDARY EXPANSION  
MANCHESTER, TN  
OPTION 1**

-  Proposed UGB
-  Manchester UGB
-  Tullahoma UGB
-  City Limits
-  Coffee County



Project: 108-69  
 CREATED: 1/24/2019  
 By: K.P.

ST. JOHN ENGINEERING, LLC  
 MANCHESTER, TN 37355  
 P. 931-728-2638



## PROPOSED UGB BOUNDARY EXPANSION MANCHESTER, TN OPTION 1

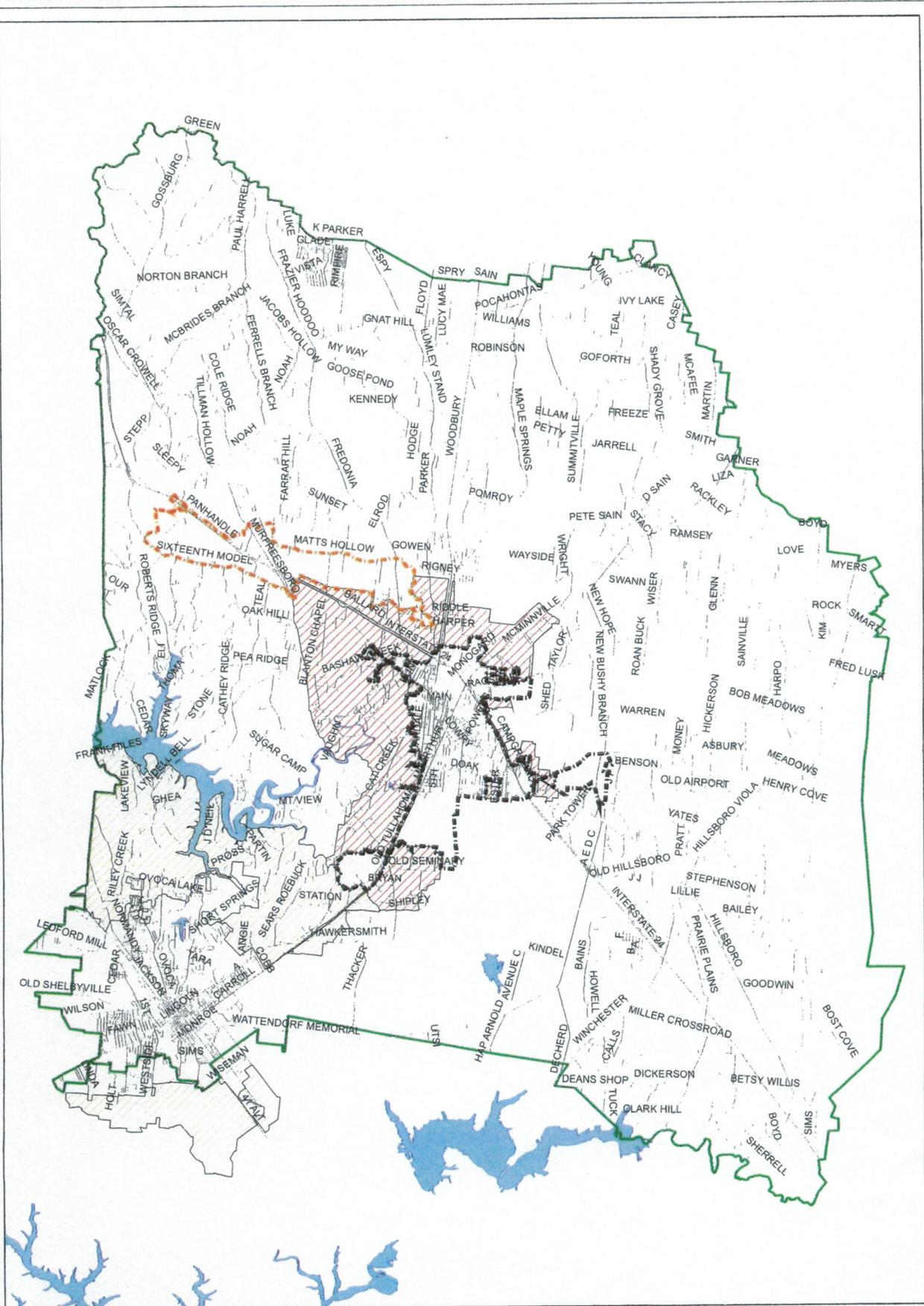
- Proposed UGB
- Manchester UGB
- Tullahoma UGB
- City Limits
- Coffee County



Project: 108-69  
 CREATED: 1/24/2019  
 By: K.P.

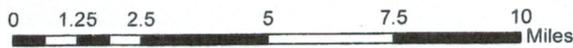
ST. JOHN ENGINEERING, LLC  
 MANCHESTER, TN 37355  
 P: 931-728-2638

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**PROPOSED UGB BOUNDARY EXPANSION  
MANCHESTER, TN  
OPTION 2**

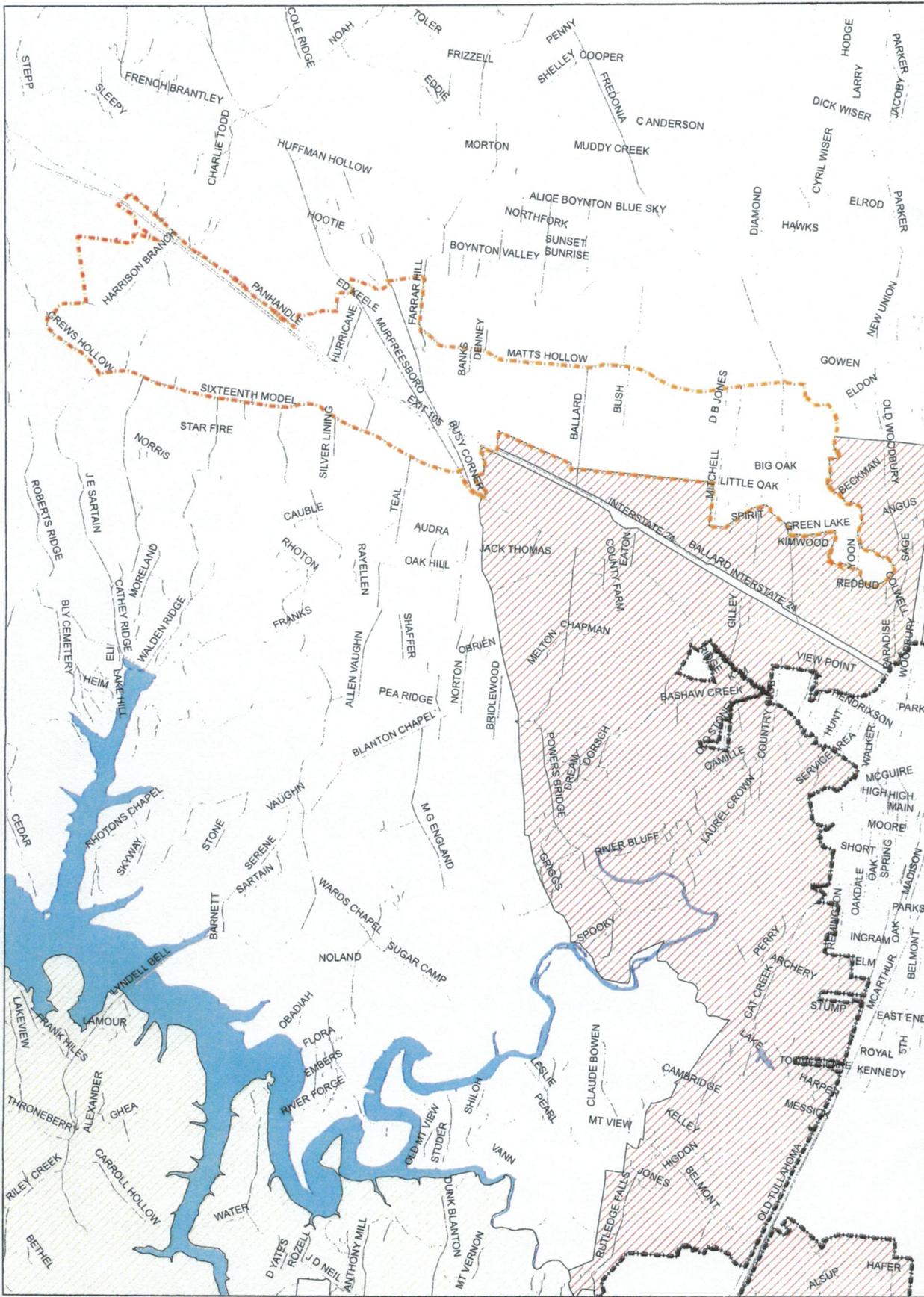
-  Proposed UGB
-  Manchester UGB
-  Tullahoma UGB
-  City Limits
-  Coffee County



Project: 108-69  
 CREATED: 1/24/2019  
 By: K.P.

ST. JOHN ENGINEERING, LLC  
 MANCHESTER, TN 37355  
 P: 931-728-2638

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**PROPOSED UGB BOUNDARY EXPANSION**  
**MANCHESTER, TN**  
**OPTION 2**

-  Proposed UGB
-  Manchester UGB
-  Tullahoma UGB
-  City Limits
-  Coffee County



Project: 108-89  
 CREATED: 1/24/2019  
 By: K.P.

ST. JOHN ENGINEERING, LLC  
 MANCHESTER, TN 37395  
 P: 931-728-2638

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