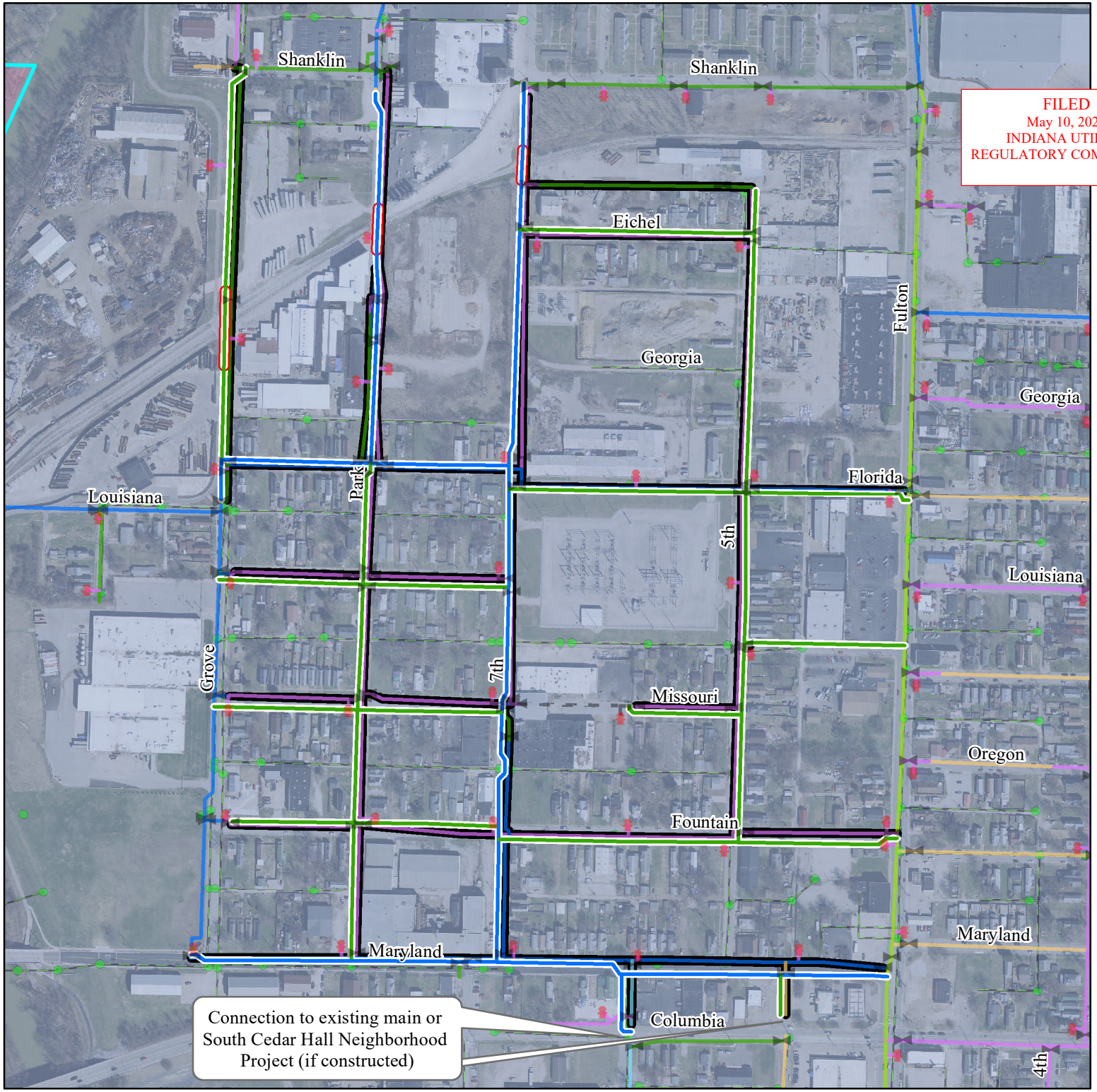
FILED
May 10, 2021
INDIANA UTILITY
REGULATORY COMMISSION

# Figure 1
# Report No. 37
# Central Cedar Hall Neighborhood




## Legend

**Proposed Project**

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

**Water Infrastructure**

- Hydrants

**Valves**

- System Isolation
- System Separation

**Mains**

- <6"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- 24"
- 30"
- 36"
- 48"
- Private

**Pressure Zones**

- Central
- Killian
- Lincoln
- Northern

**Sanitary Infrastructure**

- Manholes
- Sewer

N

**Print Date: December 2020**

0 400 800 Feet

# 2. Hydraulic Modeling

The available fire flow within the project limits and surrounding areas were evaluated using the WaterGEMS distribution system model under maximum day demands of 26.7 million gallons per day (MGD) based upon 2019 data. One (1) alternative was evaluated for replacement. Alternative 1 includes replacement with all 8-inch diameter water main in the project limits except 12-inch diameter water main along Park Street north of Florida Street, 7th Avenue, Sixth Avenue, and Maryland Street. The mains at Fountain Avenue and 7th Avenue were connected. The 12-inch diameter water main on Park Avenue connected to the stub south of Shanklin Street and all other mains along Park Avenue were removed. An 8-inch water main was added along Missouri Street between 5th Avenue and Fulton Avenue.

## 2.1. Results

The existing available fire flow in the project limits are shown in **Figure 2**. The available fire flow in the project limits for Alternative 1 are shown in **Figure 3**.

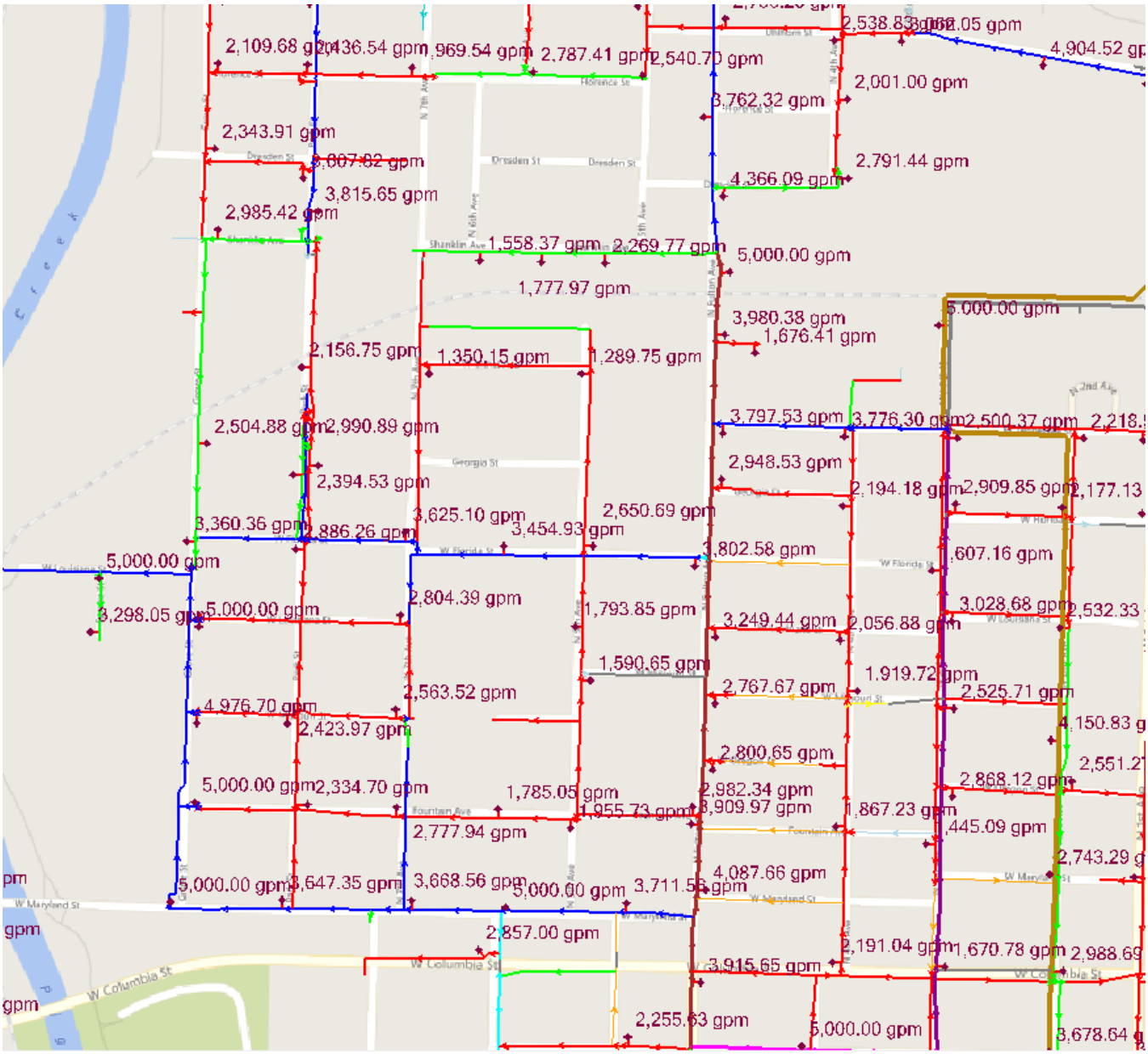



**Figure 2. Existing Available Fire Flow**

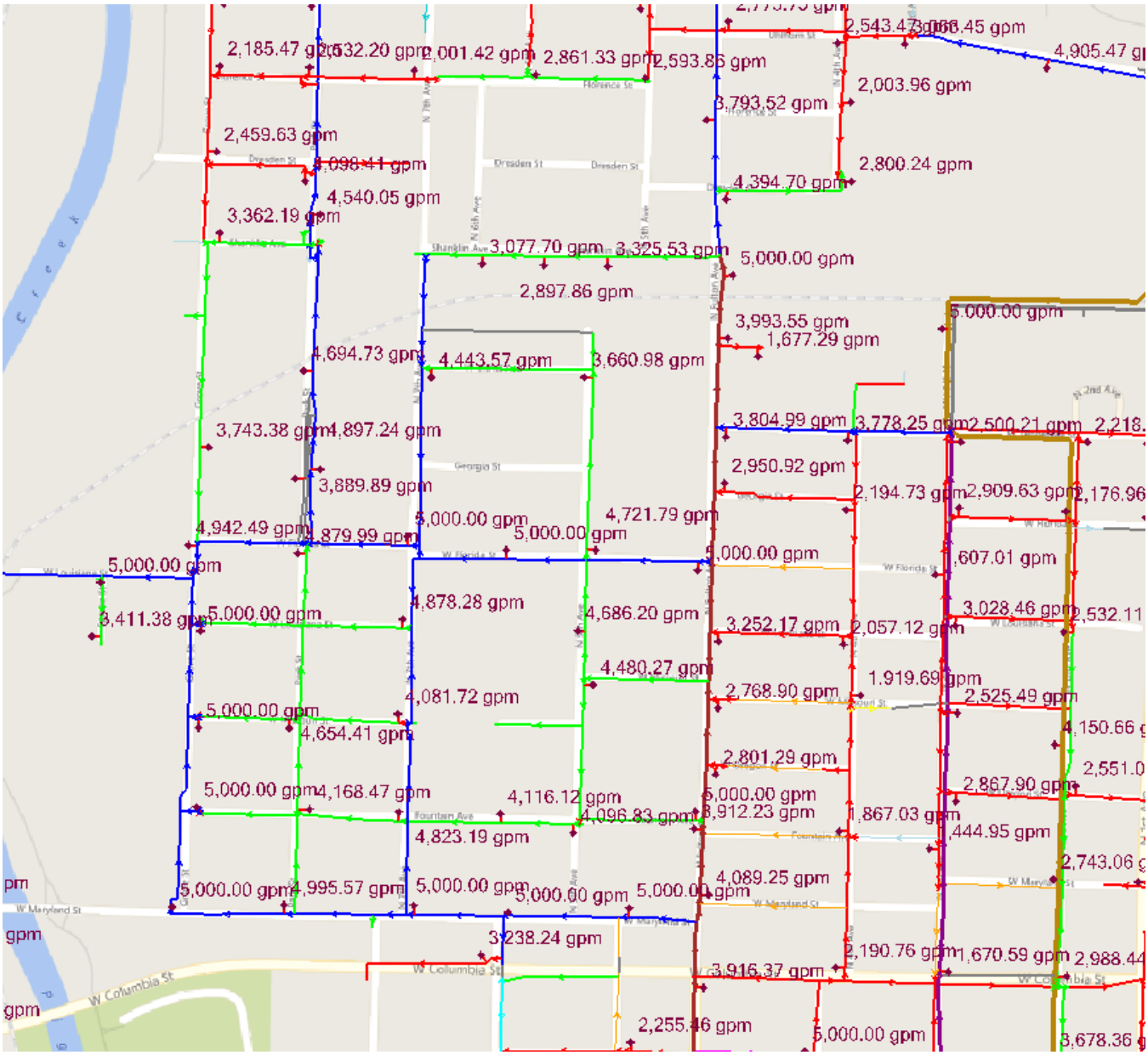



**Figure 3. Alternative 1 Available Fire Flow**

### 2.1. Conclusion

The project area is primarily residential, so the required fire flow is expected to be approximately 1,500 gallons per minute. Alternative 1 provides the required fire flow, therefore Alternative 1 was selective to provide the required fire flow in the project area

## 3. Environmental Assessment

A preliminary environmental assessment was performed within the project limits and surrounding area using IndianaMap and Indiana Department of Transportation (INDOT) Geographical Information Office (GIO) Library to identify sites that may be of concern within one-half mile of the proposed project limits. The

assessment of the project limits and surrounding area identified forty (40) potential contaminated sites and thirty-one (31) known contaminated sites as shown in **Figure 4**.

## 3.1. Site Specific Concerns

The preliminary environmental assessment identified eight (8) known contaminated sites with close proximity to the project. These eight (8) known contaminated sites include three (3) leaking underground storage tank sites, two (2) brownfield sites, and three (3) institutional control sites.

## LEGEND

### KNOWN CONTAMINATED SITES

- BROWNFIELD SITE
- CLEANUP SITE
- CONFINED FEEDING OPERATION
- SUPERFUND SITE
- LEAKING UNDERGROUND STORAGE TANK SITE
- VOLUNTARY REMEDIATION PROGRAM SITE
- INSTITUTIONAL CONTROL SITE
- JACOBSVILLE SUPERFUND SITE BOUNDARY
- WASTE COAL COMBUSTION IMPOUNDMENT

### POTENTIAL CONTAMINATED SITES

- ELECTRONIC RECYCLING FACILITY
- MANUFACTURED GAS PLANT
- NPDES FACILITY
- NPDES PIPE LOCATION
- SEPTAGE WASTE SITE
- SOLID WASTE DISPOSAL/PROCESSING FACILITY
- UNDERGROUND STORAGE TANK SITE
- WASTE TIRE SITE
- RAILROAD
- SOLID WASTE LANDFILL

### PROJECT INFORMATION

- HALF MILE RADIUS
- PROPOSED PROJECT LIMITS

**Figure 4**

0 SCALE 0.25 Miles



**TITLE:** Central Cedar Hall Neighborhood Hazardous Materials Concerns

**LOCATION:** Central Cedar Hall Neighborhood,
Evansville, IN

X: 87.5849036
Y: 37.9876219

**PREPARED FOR:**

EVANSVILLE WATER & SEWER DEPARTMENT
REFRESH PROGRAM
1 NW MARTIN LUTHER KING JR BLVD
EVANSVILLE, INDIANA 47708

**DELIVERED TO:**

HNTB CORPORATION
111 MONUMENT CIRCLE,
SUITE 1200
INDIANAPOLIS, INDIANA 46204

CRANE ENVIRONMENTAL SERVICES, LLC
MAIN OFFICE:
4209 HIGHWAY 41 NORTH, SUITE 24,EVANSVILLE, INDIANA 47711
INDIANAPOLIS OFFICE:
6745 S GRAY ROAD, SUITE I,INDIANAPOLIS, IN 46237

**CRANE PROJECT NO.120-0108R**

**DATE:** 11/6/2020

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# Scoping Report

Project Capital Cost Estimate

## Central Cedar Hall Neighborhood Water Main Replacement

Report #: 37

**CONSTRUCTION COSTS**

| ITEM ID | DESCRIPTION | QUANTITY | UNIT | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|
| **STANDARD PAY ITEMS** | | | | | |
| 1083 | 8" PVC C900 PIPE | 11,050 | LF | $86.00 | $950,300.00 |
| 1085 | 12" PVC C900 PIPE | 6,860 | LF | $102.00 | $699,720.00 |
| 1089 | 8" DUCTILE IRON PIPE | 230 | LF | $145.00 | $33,350.00 |
| 1091 | 12" DUCTILE IRON PIPE | 220 | LF | $192.00 | $42,240.00 |
| 1140 | 12" STEEL CASING PIPE | 230 | LF | $150.00 | $34,500.00 |
| 1141 | 16" STEEL CASING PIPE | 220 | LF | $160.00 | $35,200.00 |
| 1096 | 8" SOLID SLEEVE | 2 | EA | $394.00 | $788.00 |
| 1098 | 12" SOLID SLEEVE | 4 | EA | $394.00 | $1,576.00 |
| 1026 | 8" MJ GATE VALVE | 26 | EA | $1,645.00 | $42,770.00 |
| 1028 | 12" MJ GATE VALVE | 14 | EA | $2,818.00 | $39,452.00 |
| 1013 | 8" MJ 45° BEND | 72 | EA | $441.00 | $31,752.00 |
| 1015 | 12" MJ 45° BEND | 48 | EA | $765.00 | $36,720.00 |
| 1036 | 8" MJ TEE | 11 | EA | $679.00 | $7,469.00 |
| 1041 | 12"X8" MJ TEE | 9 | EA | $866.00 | $7,794.00 |
| 1043 | 12" MJ TEE | 5 | EA | $982.00 | $4,910.00 |
| 1119 | FIRE HYDRANT ASSEMBLY WITH GATE VALVE | 30 | EA | $5,814.00 | $174,420.00 |
| 1126 | AUTOMATIC FLUSH DEVICE WITH GATE VALVE (9400) | 1 | EA | $5,212.00 | $5,212.00 |
| 7006 | 20" Tapping Sleeve & 8" Tapping Valve | 3 | LS | $9,145.00 | $27,435.00 |
| 7007 | 20" Tapping Sleeve & 12" Tapping Valve | 1 | LS | $10,318.00 | $10,318.00 |
| 1132 | 3/4"-1" WATER SERVICE RELOCATION, OPEN CUT | 170 | EA | $1,682.00 | $285,940.00 |
| 6004 | Proposed 8" to Existing 8" Connection | 1 | LS | $7,122.00 | $7,122.00 |
| 6026 | Proposed 12" to Existing 12" Connection | 4 | LS | $10,368.00 | $41,472.00 |
| 6025 | Proposed 8" to Existing 12" Connection | 3 | LS | $10,115.00 | $30,345.00 |
| 6008 | Proposed 12" to Existing 8" Connection | 1 | LS | $7,446.00 | $7,446.00 |
| 5006 | ABANDON AND GROUT FILL EXISTING MAIN | 19,720 | LF | $10.00 | $197,200.00 |
| 5007 | COMPACTED AGGREGATE, NO. 53S | 18,360 | LF | $9.00 | $165,240.00 |
| 5021 | HOT MIX ASPHALT BASE | 18,360 | LF | $28.00 | $514,080.00 |
| 5023 | HOT MIX ASPHALT SURFACE | 18,360 | LF | $12.00 | $220,320.00 |
| **NON-STANDARD PAY ITEMS** | | | | | |
| -- | Environmental Remediation Contingency | 1 | LS | 5.0% | $182,800.00 |

| STANDARD LUMP SUM PAY ITEMS<br>DESCRIPTION | QUANTITY | UNIT | % | TOTAL PRICE |
|---|---|---|---|---|
| Mobilization & Demobilization (4% - 5%) | 1 | LS | 5.0% | $191,900.00 |
| Construction Engineering (2% - 3%) | 1 | LS | 3.0% | $115,200.00 |
| Clearing & Grubbing (0.5% - 1.5%) | 1 | LS | 1.0% | $38,400.00 |
| Erosion Control Devices (1% - 2%) | 1 | LS | 2.0% | $76,800.00 |
| Maintenance of Traffic (3% - 4%) | 1 | LS | 4.0% | $153,600.00 |
| Restoration, Grading, and Seeding (2% - 3%) | 1 | LS | 3.0% | $115,200.00 |

**CONSTRUCTION COST SUBTOTAL =** $4,528,991.00

**CONTINGENCY (30%) =** $1,358,700.00

**TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = $5,888,000.00**

**NON-CONSTRUCTION COSTS**

| DESCRIPTION | QUANTITY | UNIT | % | TOTAL PRICE |
|---|---|---|---|---|
| Engineering Program Management Fees (estimated) | 1 | LS | 3.0% | $176,700.00 |
| Engineering Design Fees (estimated) | 1 | LS | 10.0% | $588,800.00 |
| Engineering Construction Engineering Fees (estimated) | 1 | LS | 9.6% | $565,300.00 |

**NON-CONSTRUCTION COST SUBTOTAL =** $1,331,000.00

**TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = $7,219,000.00**

HNTB

DECEMBER 2020
LAST REVISION JANUARY 2021

# NORTH STAR NEIGHBORHOOD WATER MAIN REPLACEMENT SCOPING REPORT

## 2022 WATER RATE CASE

December 2020
Last Revision January 2021

PREPARED FOR

**Evansville Water & Sewer Utility**
1 SE 9th Street
Suite 200
Evansville, IN 47708
Phone: (812) 421-2120
Contact: Michael Labitkze, P.E.

PREPARED BY

**HNTB Corporation**
111 Monument Circle
Suite 1200
Indianapolis, IN 46204
Phone: (317) 636-4682
Contact: Jason Hoff, P.E.

# NORTH STAR NEIGHBORHOODWATER MAIN REPLACEMENT SCOPING REPORT

## 1. Project Summary

The proposed North STAR Neighborhood Water Main Replacement Project includes the replacement of approximately 15,890 feet of water main. The project is expected to include approximately nineteen (19) fire hydrants, fifty (50) gate valves, one (1) butterfly valve, and 316 service connections. Approximately 17,920 feet of existing water main will be abandoned and filled with grout. Two (2) existing parallel water mains will be replaced be one (1) water main so that only 15,890 feet of water main is proposed.

### 1.1. Project Limits

The project scope includes replacement of existing water mains along Tennessee Street between 4th Avenue and 3rd Avenue, Tennessee Street between 2nd Avenue and First Avenue, Georgia Street between Fulton Avenue and 4th Avenue, Florida Street between Fulton Avenue and 4th Avenue, Florida Street between 3rd Street and First Avenue, Louisiana Street between Fulton Avenue and 4th Avenue, Louisiana Street between 3rd Avenue and 2nd Avenue, Missouri Street between Fulton Avenue and 2nd Avenue, Oregon Street between Fulton Avenue and 4th Avenue, Oregon Street between 3rd Avenue and 1st Avenue, Fountain Avenue between Fulton Avenue and 3rd Avenue, Maryland Street between Fulton Avenue and 4th Avenue, Maryland Street between 3rd Avenue and 2nd Avenue, Columbia Street between 3rd Avenue and 2nd Avenue, 4th Avenue between Tennessee Street and Columbia Street, 3rd Avenue between Tennessee Street and Columbia Street, and 2nd Avenue between Tennessee Street and Columbia Street. The proposed project and potential alignment for proposed water mains are shown in **Figure 1**. Actual horizontal and vertical alignment will be determined during final design based on surveyed locations of existing utilities in the project area.

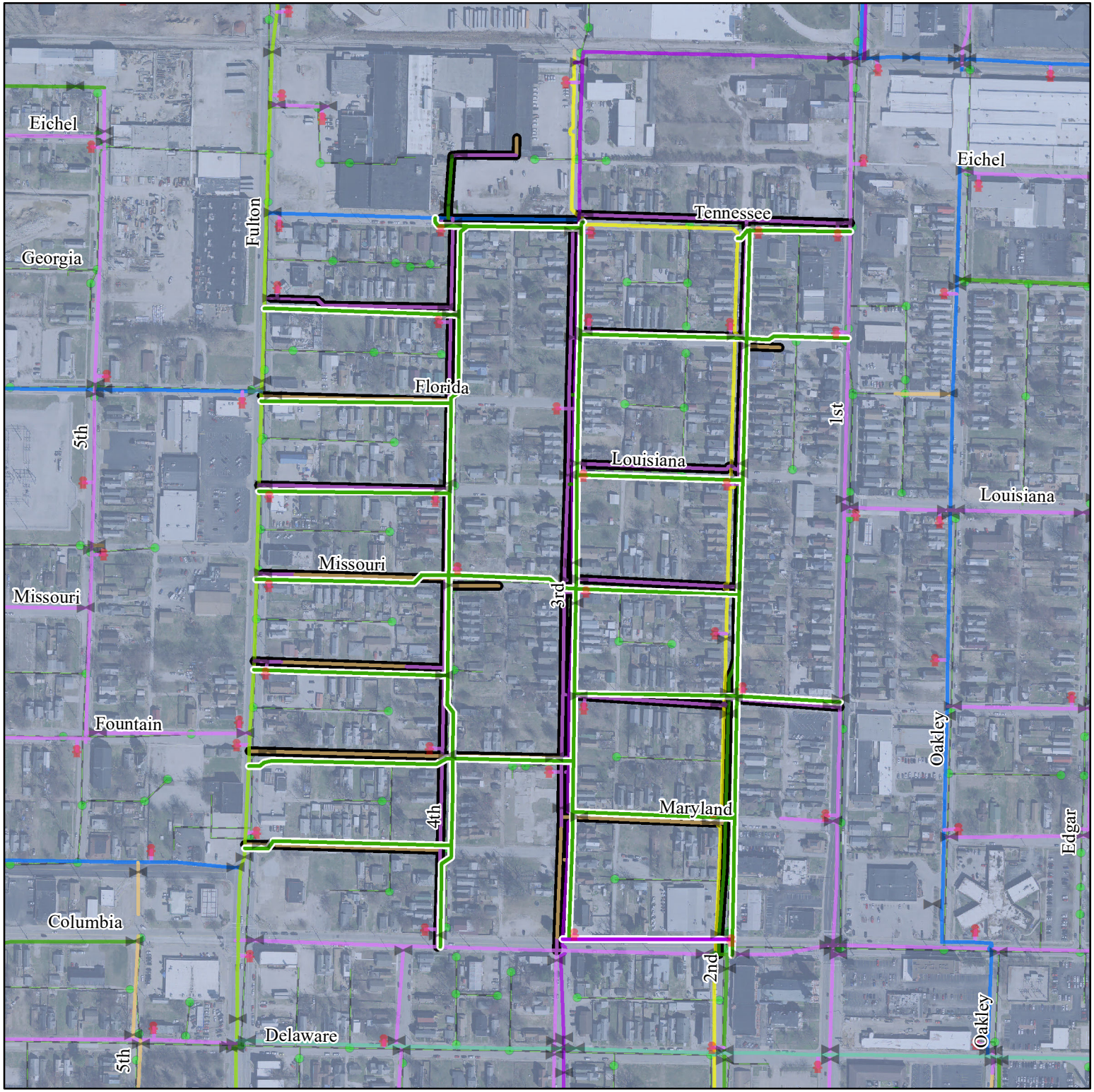
### 1.2. Project Drivers

The existing water mains within the proposed project limits have replacement prioritization scores ranging from 140 to 295. The average score weighted by length for the existing water mains is 218.

This project had a high replacement rating due to a high likelihood of failure criteria score from this project's high historical rate of failure and short service life remaining or being past its service life. Pipe material also contributed to this project's high score.

### 1.3. Project Cost

The total capital cost estimate for the project is $7,040,000. This includes $5,742,000 construction costs and $1,298,000 non-construction costs. The project costs were estimated using the EWSU Cost Estimating Tool Scoping Report tab. The cost estimate is included at the end of the scoping report.




# Figure 1
# Report No. 38
# North STAR Neighborhood

## Legend

**Proposed Project**

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

**Water Infrastructure**

- Hydrants

**Valves**

- System Isolation
- System Separation

**Mains**

- <6"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- 24"
- 30"
- 36"
- 48"
- Private

**Pressure Zones**

- Central
- Lincoln
- Killian
- Northern

**Sanitary Infrastructure**

- Manholes
- Sewer

N

**Print Date: December 2020**

0 400 800 Feet

# 2. Hydraulic Modeling

The available fire flow within the project limits and surrounding areas were evaluated using the WaterGEMS distribution system model under maximum day demands of 26.7 million gallons per day (MGD) based upon 2019 data. Three (3) alternatives were evaluated for replacement. Alternative 1 included replacement with 16-inch diameter water main along 3rd Avenue, new 24-inch diameter water main along Columbia Street between 3rd Avenue and 2nd Avenue, and 8-inch diameter water main in the remainder of the project limits. Alternative 2 included replacement with 12-inch diameter water main along 3rd Avenue, new 24-inch diameter water main along Columbia Street between 3rd Avenue and 2nd Avenue, and 8-inch diameter water main in the remainder of the project limits. Alternative 3 included new 24-inch diameter water main along Columbia Street between 3rd Avenue and 2nd Avenue and 8-inch diameter water main in the remainder of the project limits. All alternatives connect the dead-ends on Florida Street and Missouri Street and add an 8-inch water main along Oregon Street between 1st Avenue and 2nd Avenue.

## 2.1. Results

The existing available fire flow in the project limits are shown in **Figure 2**. The available fire flow in the project limits for Alternative 1 are shown in **Figure 3**. The available fire flow in the project limits for Alternative 2 are shown in **Figure 4**. The available fire flow in the project limits for Alternative 3 are shown in **Figure 5**.


**Figure 2. Existing Available Fire Flow**

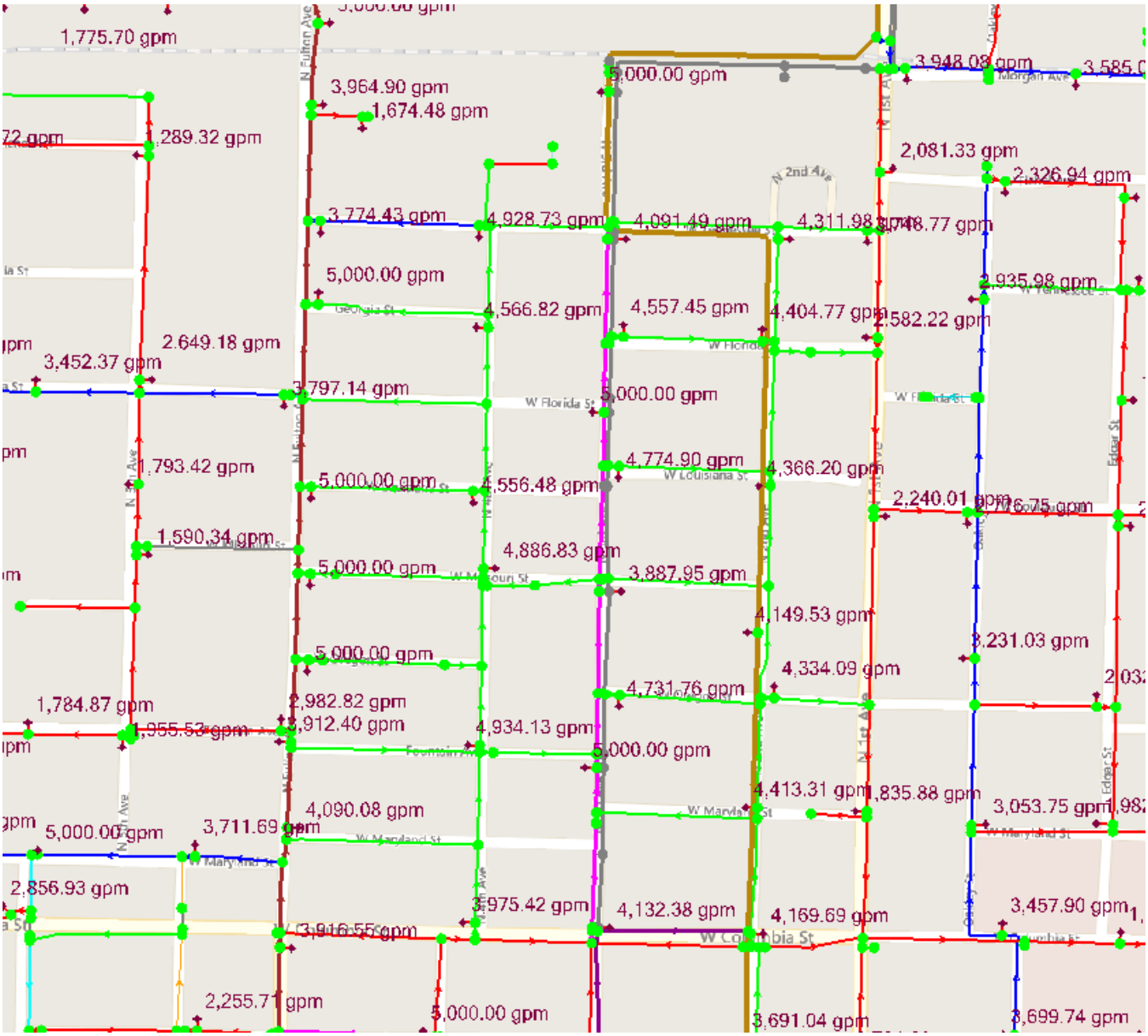



**Figure 3. Alternative 1 Available Fire Flow**

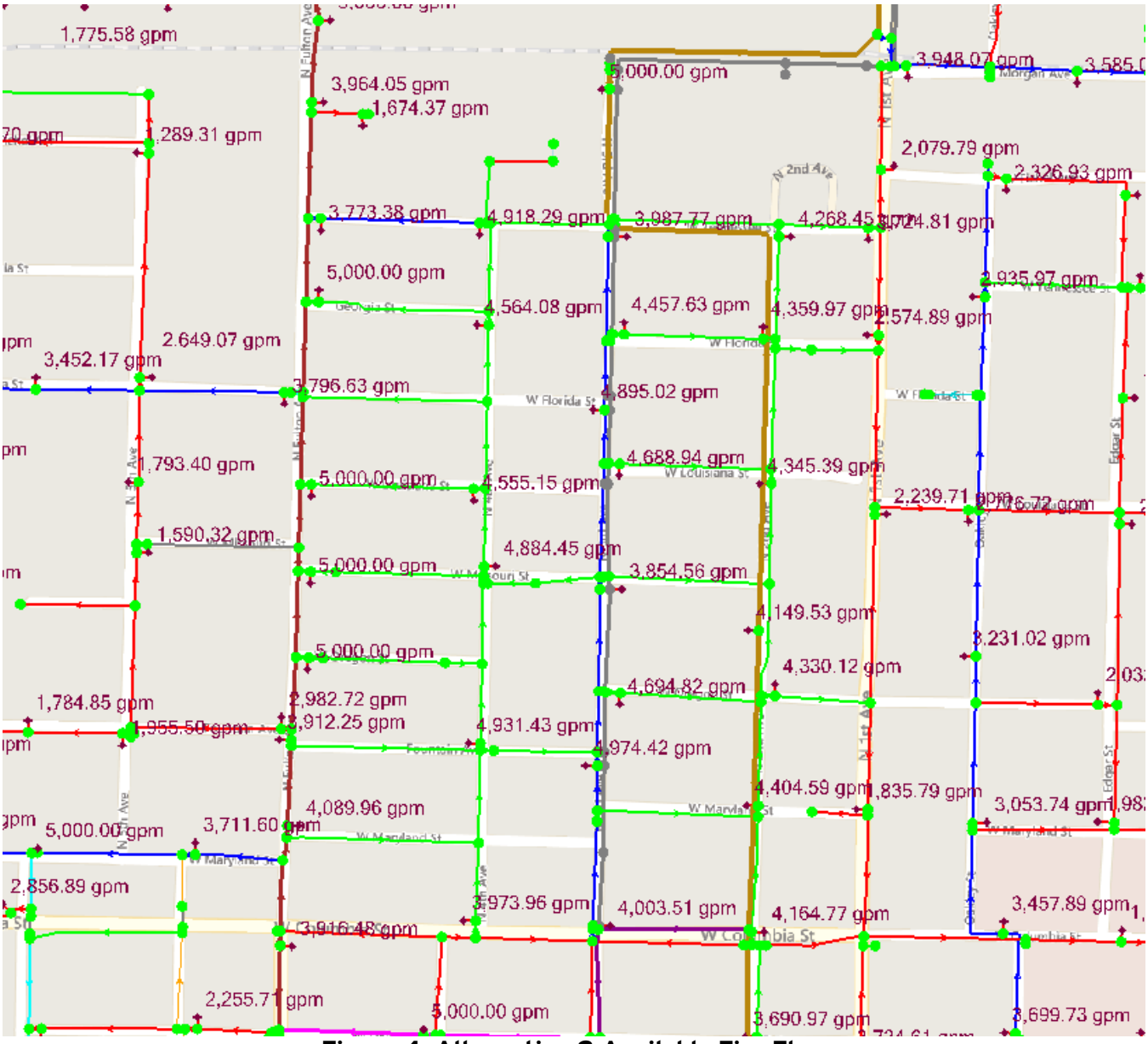



**Figure 4. Alternative 2 Available Fire Flow**

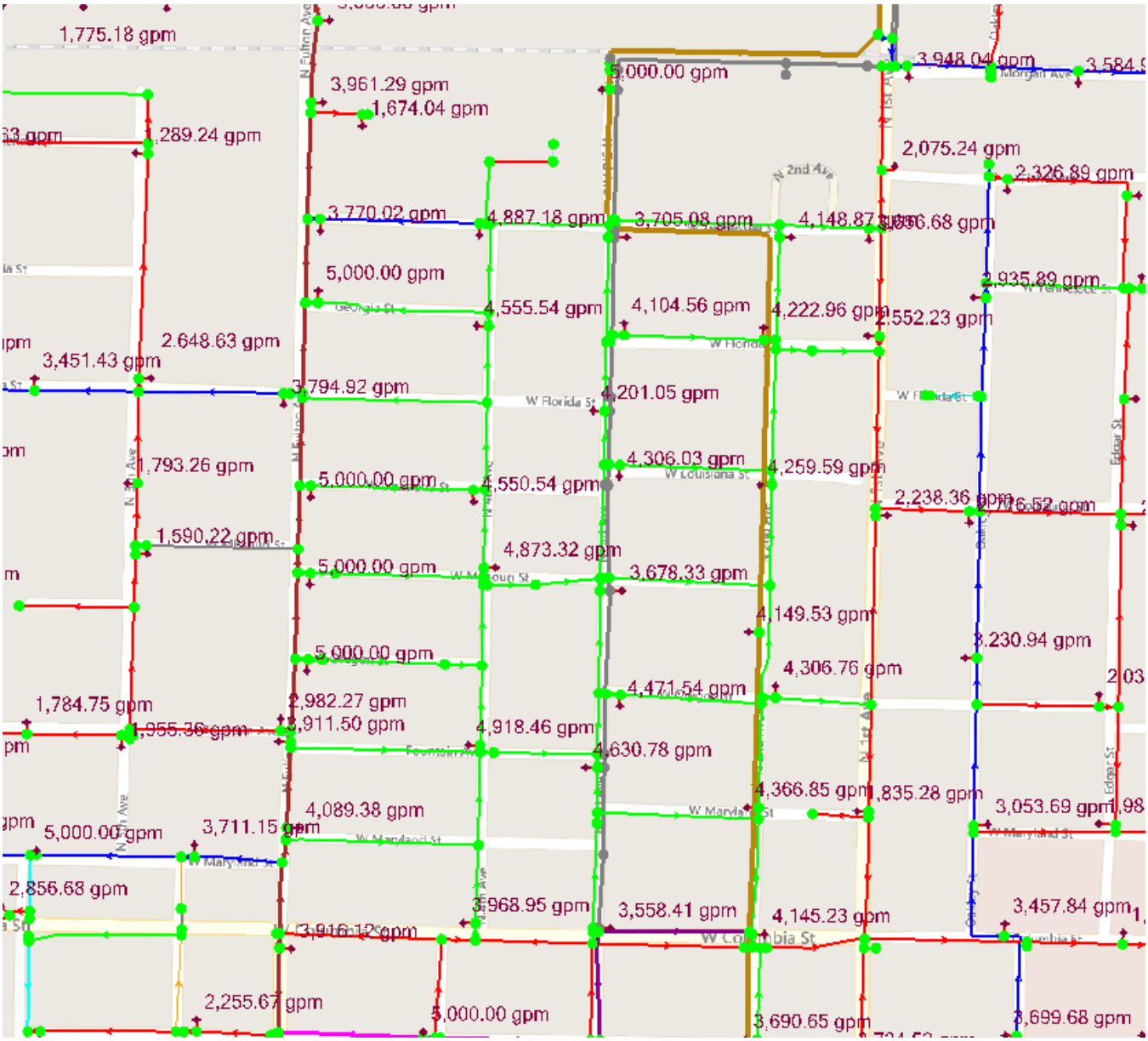



**Figure 5. Alternative 3 Available Fire Flow**

## 2.1. Conclusion

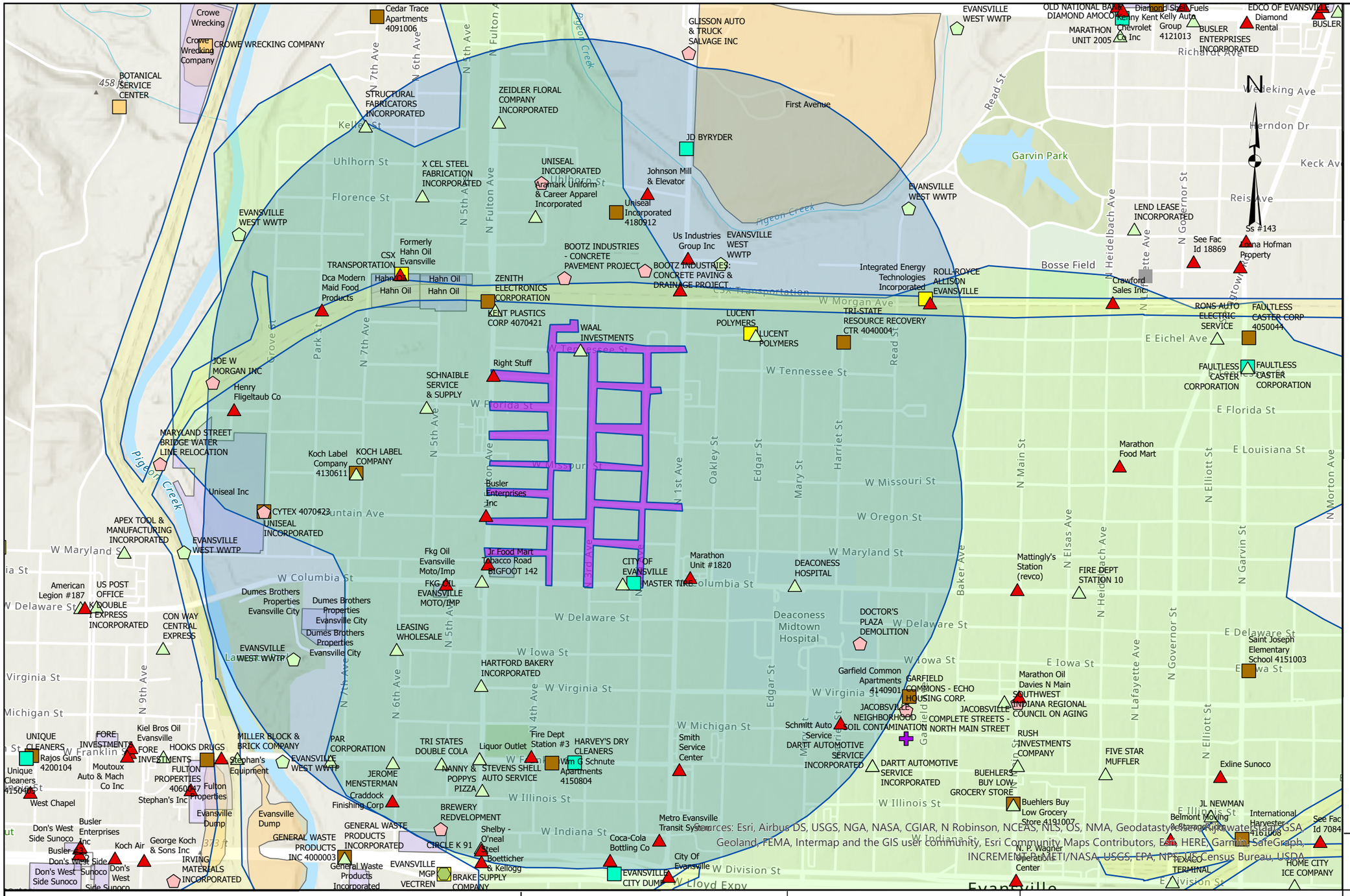
The project area is primarily residential, so the required fire flow is expected to be approximately 1,500 gallons per minute. All alternatives provide adequate pressure and available fire flow, therefore Alternative 3 was selected to minimize project costs.

# 3. Environmental Assessment

A preliminary environmental assessment was performed within the project limits and surrounding area using IndianaMap and Indiana Department of Transportation (INDOT) Geographical Information Office (GIO) Library to identify sites that may be of concern within one-half mile of the proposed project limits. The assessment of the project limits and surrounding area identified thirty-one (31) potential contaminated sites and thirty-nine (39) known contaminated sites as shown in **Figure 6**.

## 3.1. Site Specific Concerns

The preliminary environmental assessment identified five (5) known contaminated sites with close proximity to the project. These five (5) known contaminated sites include three (3) leaking underground storage tank sites, one (1) cleanup site, and one (1) institutional cleanup site.




## LEGEND

### KNOWN CONTAMINATED SITES

- BROWNFIELD SITE
- CLEANUP SITE
- CONFINED FEEDING OPERATION
- SUPERFUND SITE
- LEAKING UNDERGROUND STORAGE TANK SITE
- VOLUNTARY REMEDIATION PROGRAM SITE
- INSTITUTIONAL CONTROL SITE
- JACOBSVILLE SUPERFUND SITE BOUNDARY
- WASTE COAL COMBUSTION IMPOUNDMENT

### POTENTIAL CONTAMINATED SITES

- ELECTRONIC RECYCLING FACILITY
- MANUFACTURED GAS PLANT
- NPDES FACILITY
- NPDES PIPE LOCATION
- SEPTAGE WASTE SITE
- SOLID WASTE DISPOSAL/PROCESSING FACILITY
- UNDERGROUND STORAGE TANK SITE
- WASTE TIRE SITE
- RAILROAD
- SOLID WASTE LANDFILL

### PROJECT INFORMATION

- HALF MILE RADIUS
- PROPOSED PROJECT LIMITS

**Figure 6**

0 SCALE 0.25 Miles

**TITLE:** North STAR Neighborhood Hazardous Materials Concerns

**LOCATION:** North STAR Neighborhood,
Evansville, IN

X: 87.5776784
Y: 37.9878241

**PREPARED FOR:**

EVANSVILLE WATER & SEWER DEPARTMENT
REFRESH PROGRAM
1 NW MARTIN LUTHER KING JR BLVD
EVANSVILLE, INDIANA 47708

**DELIVERED TO:**

HNTB CORPORATION
111 MONUMENT CIRCLE,
SUITE 1200
INDIANAPOLIS, INDIANA 46204

CRANE ENVIRONMENTAL SERVICES, LLC
MAIN OFFICE:
4209 HIGHWAY 41 NORTH, SUITE 24,EVANSVILLE, INDIANA 47711
INDIANAPOLIS OFFICE:
6745 S GRAY ROAD, SUITE I,INDIANAPOLIS, IN 46237

**CRANE PROJECT NO.120-0108S**

**DATE:** 11/6/2020

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# Scoping Report

Project Capital Cost Estimate

**North STAR Neighborhood Water Main Replacement**
Report #: 38

**CONSTRUCTION COSTS**

| ITEM ID | DESCRIPTION | QUANTITY | UNIT | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|
| **STANDARD PAY ITEMS** | | | | | |
| 1083 | 8" PVC C900 PIPE | 15,380 | LF | $86.00 | $1,322,680.00 |
| 1167 | 24" DUCTILE IRON PIPE | 510 | LF | $582.00 | $296,820.00 |
| 1026 | 8" MJ GATE VALVE | 50 | EA | $1,645.00 | $82,250.00 |
| 1230 | 24" MJ BUTTERFLY VALVE | 1 | EA | $10,094.00 | $10,094.00 |
| 1013 | 8" MJ 45° BEND | 128 | EA | $441.00 | $56,448.00 |
| 1225 | 24" MJ 45° BEND | 4 | EA | $3,495.00 | $13,980.00 |
| 1036 | 8" MJ TEE | 26 | EA | $679.00 | $17,654.00 |
| 1259 | 24"X8" MJ Tee | 2 | EA | $10,000.00 | $20,000.00 |
| 1119 | FIRE HYDRANT ASSEMBLY WITH GATE VALVE | 19 | EA | $5,814.00 | $110,466.00 |
| 1132 | 3/4"-1" WATER SERVICE RELOCATION, OPEN CUT | 316 | EA | $1,682.00 | $531,512.00 |
| 7006 | 20" Tapping Sleeve & 8" Tapping Valve | 7 | LS | $9,145.00 | $64,015.00 |
| 6003 | Proposed 8" to Existing 6" Connection | 4 | LS | $6,308.00 | $25,232.00 |
| 6004 | Proposed 8" to Existing 8" Connection | 1 | LS | $7,122.00 | $7,122.00 |
| 7015 | 24" Tapping Sleeve & 24" Tapping Valve | 1 | LS | $20,094.00 | $20,094.00 |
| 7016 | 36" Tapping Sleeve & 8" Tapping Valve | 2 | LS | $14,145.00 | $28,290.00 |
| 5006 | ABANDON AND GROUT FILL EXISTING MAIN | 17,920 | LF | $10.00 | $179,200.00 |
| 5007 | COMPACTED AGGREGATE, NO. 53S | 15,890 | LF | $9.00 | $143,010.00 |
| 5021 | HOT MIX ASPHALT BASE | 15,890 | LF | $28.00 | $444,920.00 |
| 5023 | HOT MIX ASPHALT SURFACE | 15,890 | LF | $12.00 | $190,680.00 |
| **NON-STANDARD PAY ITEMS** | | | | | |
| -- | Environmental Remediation Contingency | 1 | LS | 5.0% | $178,300.00 |
| -- | | | | | |

| STANDARD LUMP SUM PAY ITEMS | | | | |
|---|---|---|---|---|
| **DESCRIPTION** | **QUANTITY** | **UNIT** | **%** | **TOTAL PRICE** |
| Mobilization & Demobilization (4% - 5%) | 1 | LS | 5.0% | $187,200.00 |
| Construction Engineering (2% - 3%) | 1 | LS | 3.0% | $112,300.00 |
| Clearing & Grubbing (0.5% - 1.5%) | 1 | LS | 1.0% | $37,500.00 |
| Erosion Control Devices (1% - 2%) | 1 | LS | 2.0% | $74,900.00 |
| Maintenance of Traffic (3% - 4%) | 1 | LS | 4.0% | $149,800.00 |
| Restoration, Grading, and Seeding (2% - 3%) | 1 | LS | 3.0% | $112,300.00 |

**CONSTRUCTION COST SUBTOTAL =** $4,416,767.00

**CONTINGENCY (30%) =** $1,325,100.00

**TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = $5,742,000.00**

**NON-CONSTRUCTION COSTS**

| DESCRIPTION | QUANTITY | UNIT | % | TOTAL PRICE |
|---|---|---|---|---|
| Engineering Program Management Fees (estimated) | 1 | LS | 3.0% | $172,300.00 |
| Engineering Design Fees (estimated) | 1 | LS | 10.0% | $574,200.00 |
| Engineering Construction Engineering Fees (estimated) | 1 | LS | 9.6% | $551,300.00 |

**NON-CONSTRUCTION COST SUBTOTAL =** $1,298,000.00

**TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = $7,040,000.00**

# ELLIOT STREET AND MORTON AVENUE WATER MAIN REPLACEMENT SCOPING REPORT

## 2022 WATER RATE CASE

refresh EVANSVILLE

December 2020
Last Revision January 2021

PREPARED FOR

**Evansville Water & Sewer Utility**
1 SE 9th Street
Suite 200
Evansville, IN 47708
Phone: (812) 421-2120
Contact: Michael Labitkze, P.E.

PREPARED BY

**HNTB Corporation**
111 Monument Circle
Suite 1200
Indianapolis, IN 46204
Phone: (317) 636-4682
Contact: Jason Hoff, P.E.

HNTB

# ELLIOT STREET AND MORTON AVENUE WATER MAIN REPLACEMENT SCOPING REPORT

## 1. Project Summary

The proposed Elliot Street and Morton Avenue Water Main Replacement Project includes the replacement of approximately 9,550 feet of water main. The project is expected to include approximately twenty (20) fire hydrants, nine (9) gate valves, and 170 service connections. Approximately 9,930 feet of existing water main will be abandoned and filled with grout. Two (2) existing parallel water mains will be replaced by one (1) water main so that only 9,550 feet of water main is proposed.

### 1.1. Project Limits

The project scope includes replacement of existing water mains along Culver Drive from Sweester Avenue to Waggoner Avenue, S Governor Street and S Elliott Street south of E Riverside Drive, S Garvin Street and S Morton Street between Sweester Avenue and E Riverside Drive, Cross Street between S Judson Street and S Linwood Avenue and Waggoner Avenue. The proposed project and potential alignment for proposed water mains are shown in **Figure 1**. Actual horizontal and vertical alignment will be determined during final design based on surveyed locations of existing utilities in the project area.

### 1.2. Project Drivers

The existing water mains within the proposed project limits have replacement prioritization scores ranging from 170 to 315. The average score weighted by length for the existing water mains is 217.

This project had a high replacement rating due to a high likelihood of failure criteria score from this project's high historical rate of failure and short service life remaining. Pipe material and low available fire flow also contributed to this project's high score.

### 1.3. Project Cost

The total capital cost estimate for the project is $3,735,000. This includes $3,046,000 construction costs and $689,000 non-construction costs. The project costs were estimated using the EWSU Cost Estimating Tool Scoping Report tab. The cost estimate is included at the end of the scoping report.

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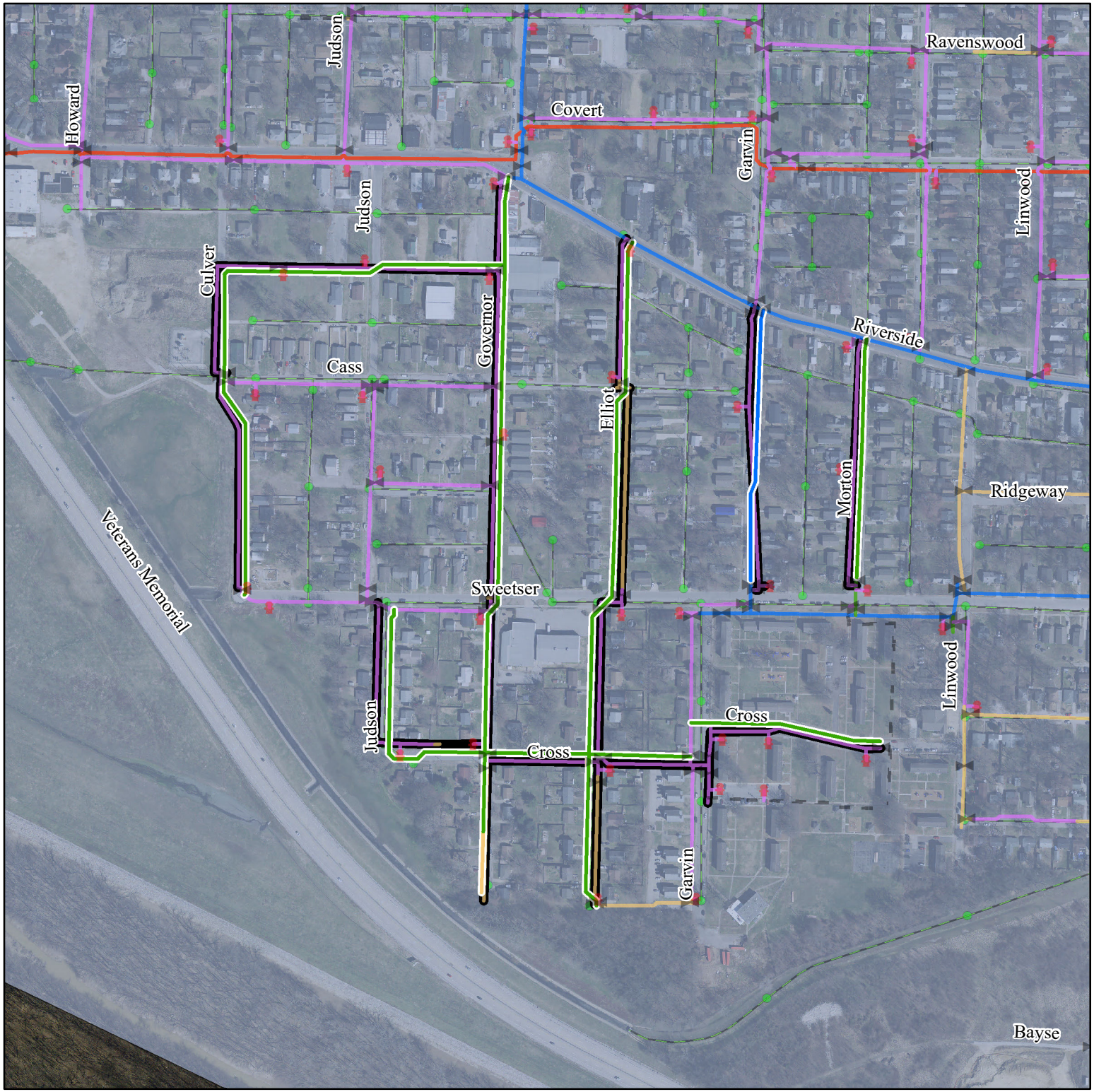
HNTB

# Figure 1
# Report No. 39
# Elliot Street and Morton Avenue




## Legend

**Proposed Project**

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

**Water Infrastructure**

- Hydrants

**Valves**

- System Isolation
- System Separation

**Mains**

- <6"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- 24"
- 30"
- 36"
- 48"
- Private

**Pressure Zones**

- Central
- Lincoln
- Killian
- Northern

**Sanitary Infrastructure**

- Manholes
- Sewer

N

**Print Date: December 2020**

0 400 800 Feet

# 2. Hydraulic Modeling

The available fire flow within the project limits and surrounding areas were evaluated using the WaterGEMS distribution system model under maximum day demands of 26.7 million gallons per day (MGD) based upon 2019 data. Two (2) alternative was evaluated for replacement. Alternative 1 includes replacement with all 8-inch diameter water main in the project limits. Alternative 2 includes replacement with all 8-inch diameter water main in the project limits except for 12-inch diameter water main along Garvin Street.

## 2.1. Results

The existing available fire flow in the project limits are shown in **Figure 2**. The available fire flow in the project limits for Alternative 1 are shown in **Figure 3**. The available fire flow in the project limits for Alternative 2 are shown in **Figure 4**.

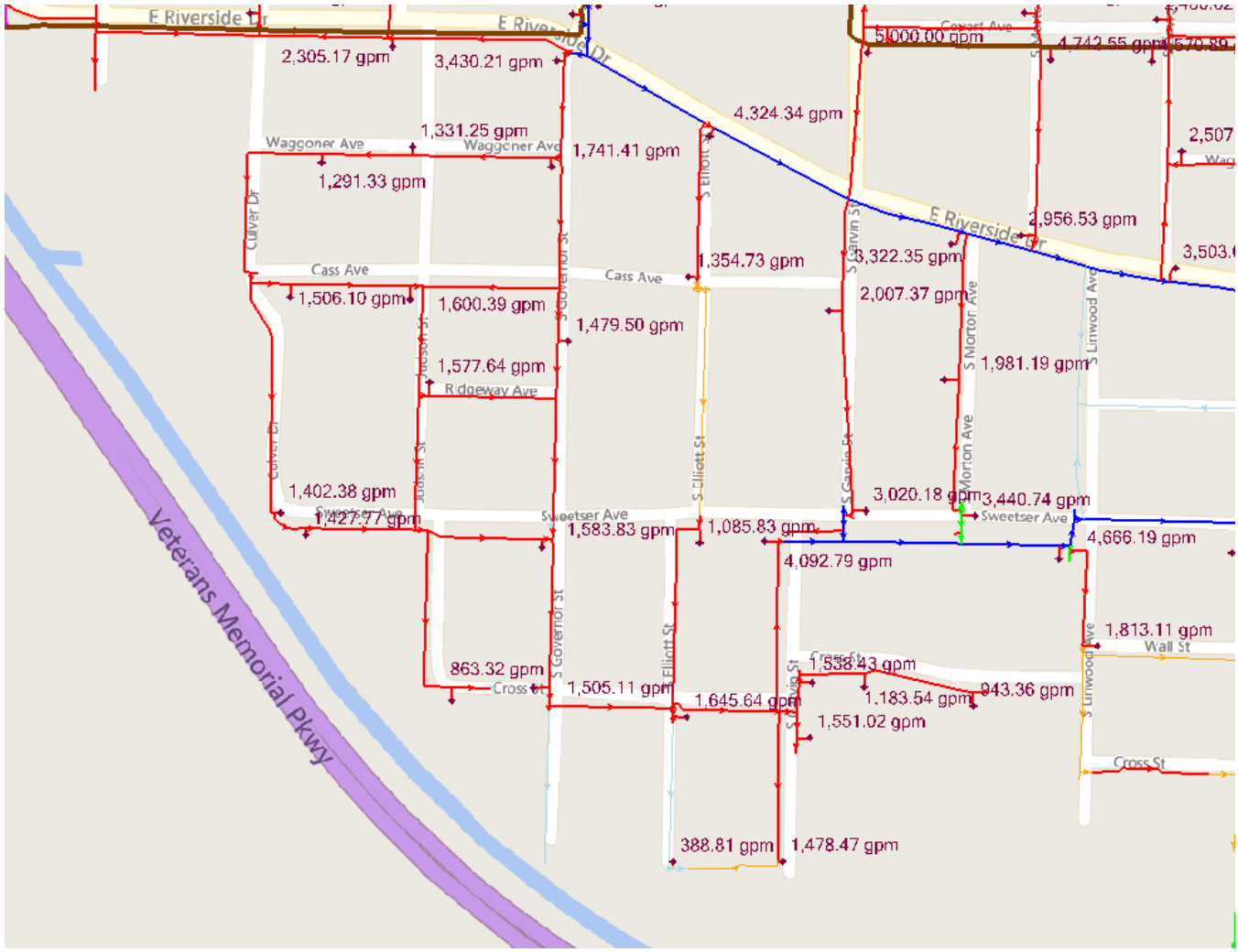



**Figure 2. Existing Available Fire Flow**


**Figure 3. Alternative 1 Available Fire Flow**


**Figure 4. Alternative 2 Available Fire Flow**

### 2.1. Conclusion

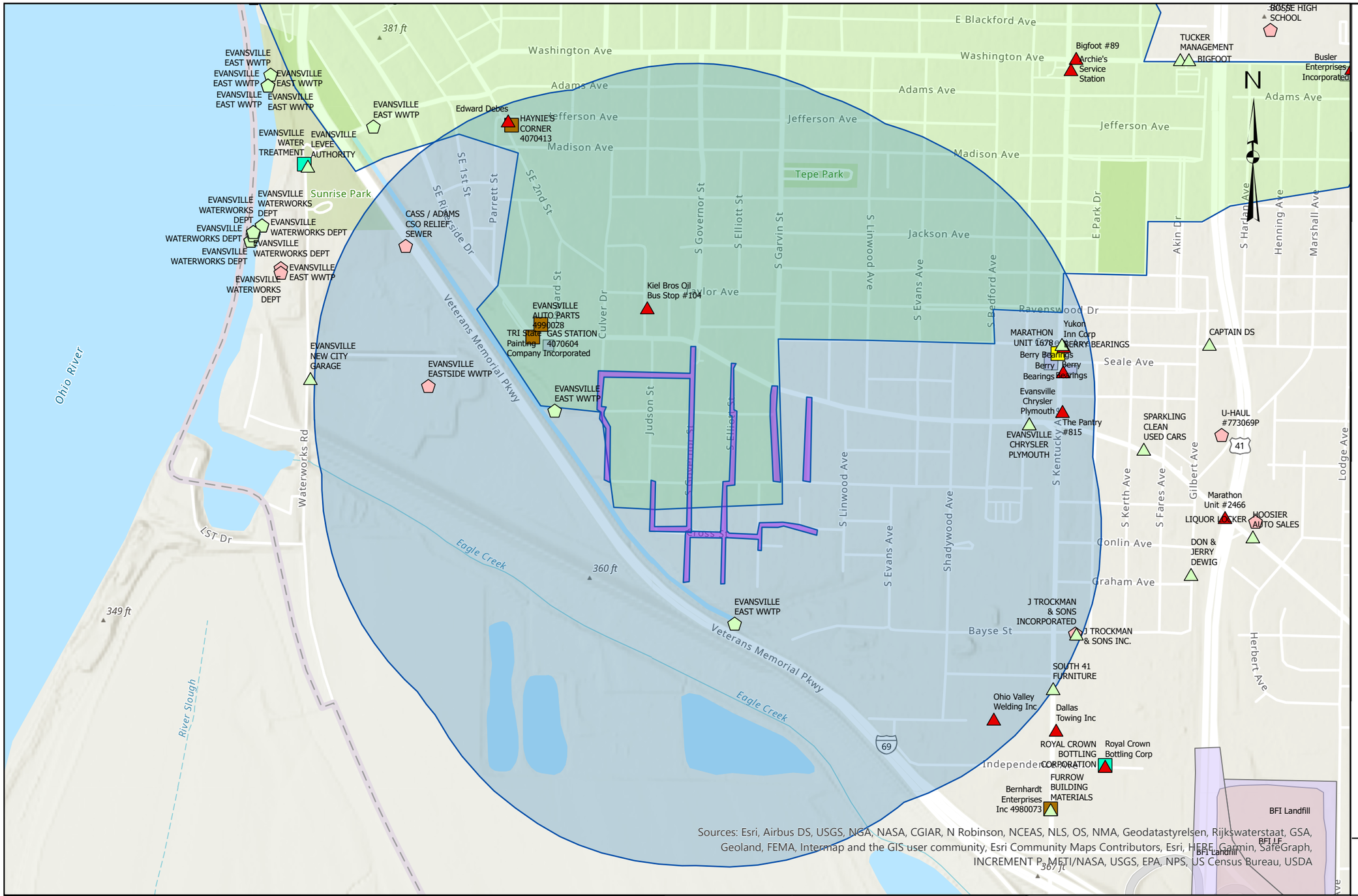
The project area is primarily residential, so the required fire flow is expected to be approximately 1,500 gallons per minute. All alternatives provide the required fire flow, however Alternative 2 was selected to make use a connection set-up for a 12-inch water main and connect existing 12-inch mains.

## 3. Environmental Assessment

A preliminary environmental assessment was performed within the project limits and surrounding area using IndianaMap and Indiana Department of Transportation (INDOT) Geographical Information Office (GIO) Library to identify sites that may be of concern within one-half mile of the proposed project limits. The assessment of the project limits and surrounding area identified eight (8) potential contaminated sites and ten (10) known contaminated sites as shown in **Figure 5**.

## 3.1. Site Specific Concerns

The preliminary environmental assessment identified zero (0) known contaminated site with close proximity to the project.




## LEGEND

### KNOWN CONTAMINATED SITES

- BROWNFIELD SITE
- CLEANUP SITE
- CONFINED FEEDING OPERATION
- SUPERFUND SITE
- LEAKING UNDERGROUND STORAGE TANK SITE
- VOLUNTARY REMEDIATION PROGRAM SITE
- INSTITUTIONAL CONTROL SITE
- JACOBSVILLE SUPERFUND SITE BOUNDARY
- WASTE COAL COMBUSTION IMPOUNDMENT

### POTENTIAL CONTAMINATED SITES

- ELECTRONIC RECYCLING FACILITY
- MANUFACTURED GAS PLANT
- NPDES FACILITY
- NPDES PIPE LOCATION
- SEPTAGE WASTE SITE
- SOLID WASTE DISPOSAL/PROCESSING FACILITY
- UNDERGROUND STORAGE TANK SITE
- WASTE TIRE SITE
- RAILROAD
- SOLID WASTE LANDFILL

### PROJECT INFORMATION

- HALF MILE RADIUS
- PROPOSED PROJECT LIMITS

**Figure 5**

0 SCALE 0.25
Miles

**TITLE:** Elliott Street and Morton Avenue Hazardous Materials Concerns

**LOCATION:** Elliott Street and Morton Avenue, Evansville, IN

X: 87.5598169
Y: 38.9531831

**PREPARED FOR:**

EVANSVILLE WATER & SEWER DEPARTMENT
REFRESH PROGRAM
1 NW MARTIN LUTHER KING JR BLVD
EVANSVILLE, INDIANA 47708

**DELIVERED TO:**

HNTB CORPORATION
111 MONUMENT CIRCLE,
SUITE 1200
INDIANAPOLIS, INDIANA 46204

CRANE ENVIRONMENTAL SERVICES, LLC
MAIN OFFICE:
4209 HIGHWAY 41 NORTH, SUITE 24,EVANSVILLE, INDIANA 47711
INDIANAPOLIS OFFICE:
6745 S GRAY ROAD, SUITE I,INDIANAPOLIS, IN 46237

CRANE PROJECT NO.120-0108T

DATE: 11/6/2020

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# Scoping Report

Project Capital Cost Estimate

## Elliot Street and Morton Avenue Water Main Replacement

Report #: 39

### CONSTRUCTION COSTS

| ITEM ID | DESCRIPTION | QUANTITY | UNIT | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|
| **STANDARD PAY ITEMS** | | | | | |
| 1083 | 8" PVC C900 PIPE | 8,540 | LF | $86.00 | $734,440.00 |
| 1085 | 12" PVC C900 PIPE | 820 | LF | $102.00 | $83,640.00 |
| 1081 | 4" PVC C900 PIPE | 190 | LF | $67.00 | $12,730.00 |
| 1028 | 12" MJ GATE VALVE | 1 | EA | $2,818.00 | $2,818.00 |
| 1026 | 8" MJ GATE VALVE | 8 | EA | $1,645.00 | $13,160.00 |
| 1013 | 8" MJ 45° BEND | 89 | EA | $441.00 | $39,249.00 |
| 1015 | 12" MJ 45° BEND | 7 | EA | $765.00 | $5,355.00 |
| 1036 | 8" MJ TEE | 5 | EA | $679.00 | $3,395.00 |
| 1119 | FIRE HYDRANT ASSEMBLY WITH GATE VALVE | 20 | EA | $5,814.00 | $116,280.00 |
| 1132 | 3/4"-1" WATER SERVICE RELOCATION, OPEN CUT | 170 | EA | $1,682.00 | $285,940.00 |
| 6026 | Proposed 12" to Existing 12" Connection | 2 | LS | $10,368.00 | $20,736.00 |
| 6025 | Proposed 8" to Existing 12" Connection | 3 | LS | $10,115.00 | $30,345.00 |
| 6004 | Proposed 8" to Existing 8" Connection | 1 | LS | $7,122.00 | $7,122.00 |
| 6003 | Proposed 8" to Existing 6" Connection | 8 | LS | $6,308.00 | $50,464.00 |
| 6002 | Proposed 8" to Existing 4" Connection | 2 | LS | $5,964.00 | $11,928.00 |
| 5006 | ABANDON AND GROUT FILL EXISTING MAIN | 9,930 | LF | $10.00 | $99,300.00 |
| 5007 | COMPACTED AGGREGATE, NO. 53S | 9,550 | LF | $9.00 | $85,950.00 |
| 5021 | HOT MIX ASPHALT BASE | 9,550 | LF | $28.00 | $267,400.00 |
| 5023 | HOT MIX ASPHALT SURFACE | 9,550 | LF | $12.00 | $114,600.00 |
| **NON-STANDARD PAY ITEMS** | | | | | |
| -- | | | | | |
| -- | | | | | |

| STANDARD LUMP SUM PAY ITEMS | | | | |
|---|---|---|---|---|
| **DESCRIPTION** | **QUANTITY** | **UNIT** | **%** | **TOTAL PRICE** |
| Mobilization & Demobilization (4% - 5%) | 1 | LS | 5.0% | $99,300.00 |
| Construction Engineering (2% - 3%) | 1 | LS | 3.0% | $59,600.00 |
| Clearing & Grubbing (0.5% - 1.5%) | 1 | LS | 1.0% | $19,900.00 |
| Erosion Control Devices (1% - 2%) | 1 | LS | 2.0% | $39,700.00 |
| Maintenance of Traffic (3% - 4%) | 1 | LS | 4.0% | $79,400.00 |
| Restoration, Grading, and Seeding (2% - 3%) | 1 | LS | 3.0% | $59,600.00 |

**CONSTRUCTION COST SUBTOTAL =** $2,342,352.00

**CONTINGENCY (30%) =** $702,800.00

**TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = $3,046,000.00**

### NON-CONSTRUCTION COSTS

| DESCRIPTION | QUANTITY | UNIT | % | TOTAL PRICE |
|---|---|---|---|---|
| Engineering Program Management Fees (estimated) | 1 | LS | 3.0% | $91,400.00 |
| Engineering Design Fees (estimated) | 1 | LS | 10.0% | $304,600.00 |
| Engineering Construction Engineering Fees (estimated) | 1 | LS | 9.6% | $292,500.00 |

**NON-CONSTRUCTION COST SUBTOTAL =** $689,000.00

**TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = $3,735,000.00**

# TRINITY STORM WATER PARK WATER MAIN REPLACEMENT SCOPING REPORT

## 2022 WATER RATE CASE

December 2020
Last Revision January 2021

PREPARED FOR

**Evansville Water & Sewer Utility**
1 SE 9th Street
Suite 200
Evansville, IN 47708
Phone: (812) 421-2120
Contact: Michael Labitkze, P.E.

PREPARED BY

**HNTB Corporation**
111 Monument Circle
Suite 1200
Indianapolis, IN 46204
Phone: (317) 636-4682
Contact: Jason Hoff, P.E.

# TRINITY STORM WATER PARK WATER MAIN REPLACEMENT SCOPING REPORT

## 1. Project Summary

The proposed Trinity Storm Water Park Water Main Replacement Project includes the replacement of approximately 4,670 feet of water main. The project is expected to include approximately eight (8) fire hydrants, thirteen (13) gate valves, four (4) butterfly valves, and ten (10) service connections. Approximately 5,680 feet of existing water main will be abandoned and filled with grout. Two (2) existing parallel water mains will be replaced by one (1) water main so that only 4,670 feet of water main is proposed.

During preliminary 2022 Rate Case preparations, this project was previously entirely included within another project (Downtown Area between 2nd Street and Martin Luther King Jr Boulevard, North of Main) being prepared for the 2022 Rate Case. The extents of the project overlapped with Evansville's Trinity Storm Water Park project area. As a result, the project was split into two (2) separate projects with this project, Trinity Storm Water Park, only including the overlapping project area. This separation of projects will allow for utility work in the area to be completed concurrently to or immediately following the completion of the Trinity Storm Water Park project to avoid duplicated construction and restoration efforts.

### 1.1. Project Limits

The project scope includes replacement of existing water mains along Ingle Street between 4th Street and 6th Street, Court Street between 3rd Street and Market Street, Vine Street between 3rd Street and 6th Street, Sycamore Street from 3rd Street to 4th Street and 5th Street to 6th Street, 6th Street between Ingle Street and Court Street, 5th Street from Ingle Street to Court Street and Vine Street to Sycamore Street, 4th Street from Vine Street to Sycamore Street, and Market Street between Ingle Street and Court Street. The proposed project and potential alignment for proposed water mains are shown in **Figure 1**. Actual horizontal and vertical alignment will be determined during final design based on surveyed locations of existing utilities in the project area.

### 1.2. Project Drivers

The existing water mains within the proposed project limits have replacement prioritization scores ranging from 175 to 315. The average score weighted by length for the existing water mains is 210.

This project had a high replacement rating due to a high likelihood of failure criteria score from this project's high historical rate of failure and short service life remaining. This project also had a high consequence of failure score due to being located along Sycamore Street, a minor arterial. Pipe material also contributed to this project's high score.

### 1.3. Project Cost

The total capital cost estimate for the project is $3,061,000. This includes $2,668,000 construction costs and $393,000 non-construction costs. The project costs were estimated using the EWSU Cost Estimating Tool Scoping Report tab. The cost estimate is included at the end of the scoping report.

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HNTB

# Figure 1
# Report No. 41
# Trinity Storm Water Park


## Legend

**Proposed Project**

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

**Water Infrastructure**

- Hydrants

**Valves**

- System Isolation
- System Separation

**Mains**

- <6"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- 24"
- 30"
- 36"
- 48"
- Private

**Pressure Zones**

- Central
- Lincoln
- Killian
- Northern

**Sanitary Infrastructure**

- Manholes
- Sewer

N

**Print Date: December 2020**

0 400 800 Feet

# 2. Hydraulic Modeling

The available fire flow within the project limits and surrounding areas were evaluated using the WaterGEMS distribution system model under maximum day demands of 26.7 million gallons per day (MGD) based upon 2019 data. One (1) alternative was evaluated for replacement. Alternative 1 includes replacement with 20-inch diameter water main along Vine Street, 12-inch diameter water main along Sycamore Street and Mary Street/Martin Luther King Jr Boulevard under the Lloyd Expressway, and all 8-inch diameter water main in the remainder of the project limits.

## 2.1. Results

The existing available fire flow in the project limits are shown in **Figure 2**. The available fire flow in the project limits for Alternative 1 are shown in **Figure 3**.

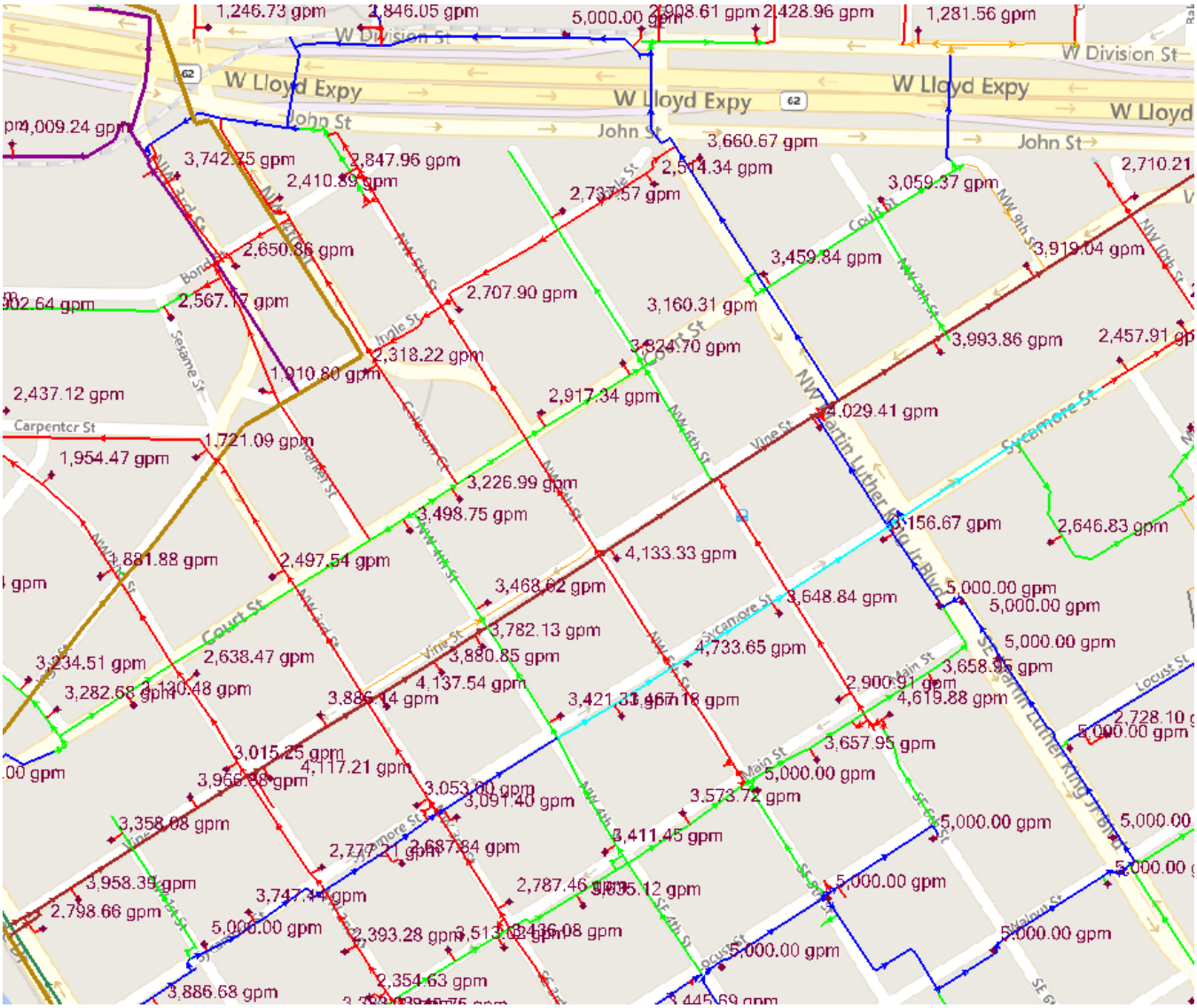



**Figure 2. Existing Available Fire Flow**


**Figure 3. Alternative 1 Available Fire Flow**

### 2.1. Conclusion

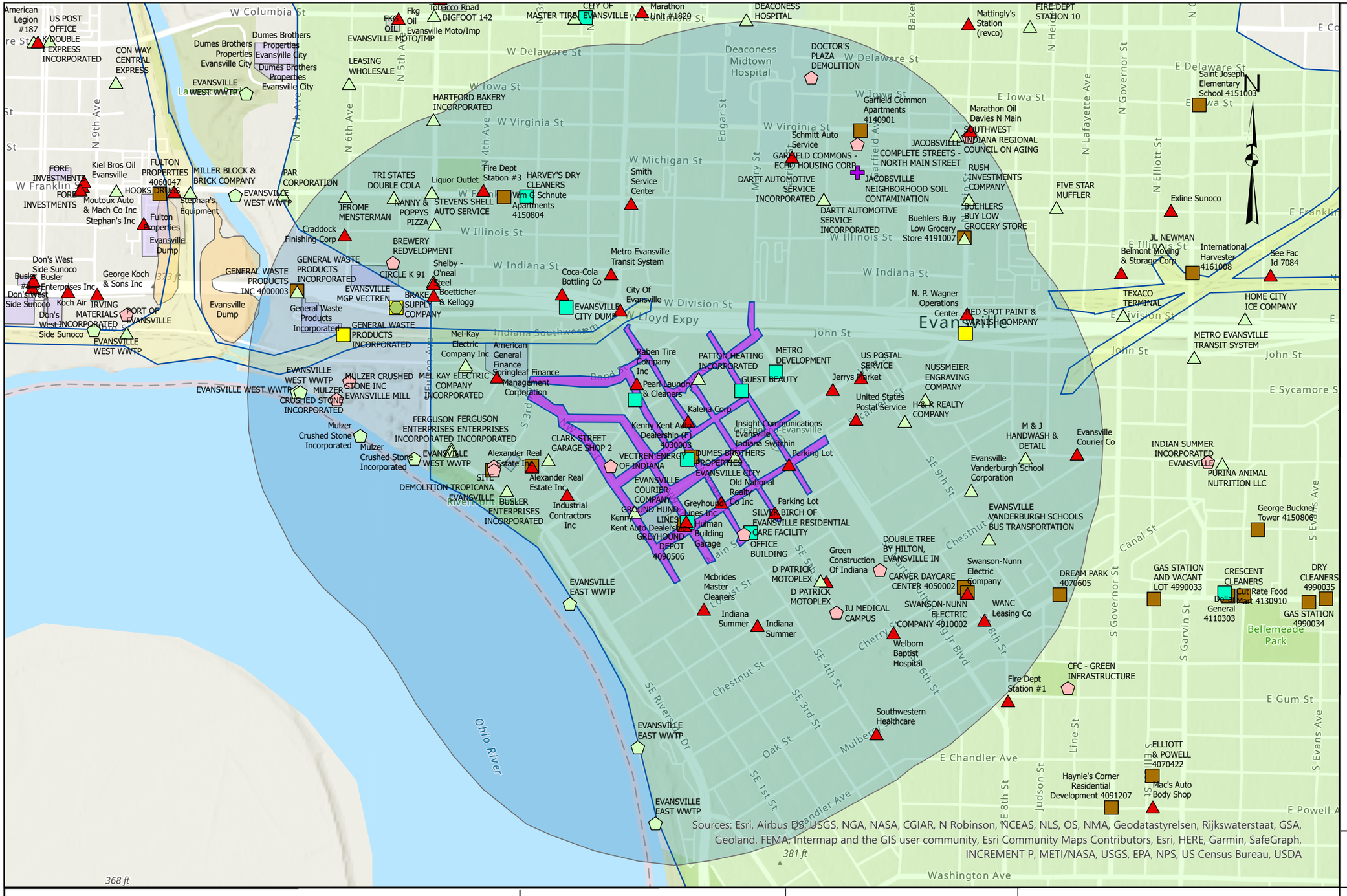
The project area is primarily commercial, so the required fire flow is expected to be approximately 2,000 gallons per minute. Alternative 1 provides the required fire flow, therefore Alternative 1 was selective to provide the required fire flow in the project area.

## 3. Environmental Assessment

A preliminary environmental assessment was performed within the project limits and surrounding area using IndianaMap and Indiana Department of Transportation (INDOT) Geographical Information Office (GIO) Library to identify sites that may be of concern within one-half mile of the proposed project limits. The assessment of the project limits and surrounding area identified forty-two (42) potential contaminated sites and fifty-eight (58) known contaminated sites as shown in **Figure 4**.

## 3.1. Site Specific Concerns

The preliminary environmental assessment identified eight (8) known contaminated sites with close proximity to the project. These eight (8) known contaminated sites include four (4) leaking underground storage tank sites, two (2) cleanup sites, one (1) brownfield sites, and one (1) institutional control site.




Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

## LEGEND

### KNOWN CONTAMINATED SITES

- BROWNFIELD SITE
- CLEANUP SITE
- CONFINED FEEDING OPERATION
- SUPERFUND SITE
- LEAKING UNDERGROUND STORAGE TANK SITE
- VOLUNTARY REMEDIATION PROGRAM SITE
- INSTITUTIONAL CONTROL SITE
- JACOBSVILLE SUPERFUND SITE BOUNDARY
- WASTE COAL COMBUSTION IMPOUNDMENT

### POTENTIAL CONTAMINATED SITES

- ELECTRONIC RECYCLING FACILITY
- MANUFACTURED GAS PLANT
- NPDES FACILITY
- NPDES PIPE LOCATION
- SEPTAGE WASTE SITE
- SOLID WASTE DISPOSAL/PROCESSING FACILITY
- UNDERGROUND STORAGE TANK SITE
- WASTE TIRE SITE
- RAILROAD
- SOLID WASTE LANDFILL

### PROJECT INFORMATION

- HALF MILE RADIUS
- PROPOSED PROJECT LIMITS

**Figure 4**

0 SCALE 0.25 Miles

**TITLE:** Downtown Area Hazardous Materials Concerns

**LOCATION:** Downtown Area,
2nd Street and Martin Luther King Jr. Blvd, North of Main
Evansville, IN
X: 87.5731871
Y: 37.9740608

**PREPARED FOR:**

EVANSVILLE WATER & SEWER DEPARTMENT
REFRESH PROGRAM
1 NW MARTIN LUTHER KING JR BLVD
EVANSVILLE, INDIANA 47708

**DELIVERED TO:**

HNTB CORPORATION
111 MONUMENT CIRCLE,
SUITE 1200
INDIANAPOLIS, INDIANA 46204

CRANE ENVIRONMENTAL SERVICES, LLC
MAIN OFFICE:
4209 HIGHWAY 41 NORTH, SUITE 24,EVANSVILLE, INDIANA 47711
INDIANAPOLIS OFFICE:
6745 S GRAY ROAD, SUITE I,INDIANAPOLIS, IN 46237

**CRANE PROJECT NO.120-0108K**

**DATE:** 11/6/2020

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# Scoping Report

Project Capital Cost Estimate

**Trinity Storm Water Park Water Main Replacement**
Report #: 41

**CONSTRUCTION COSTS**

| ITEM ID | DESCRIPTION | QUANTITY | UNIT | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|
| **STANDARD PAY ITEMS** | | | | | |
| 1083 | 8" PVC C900 PIPE | 2,840 | LF | $86.00 | $244,240.00 |
| 1085 | 12" PVC C900 PIPE | 720 | LF | $102.00 | $73,440.00 |
| 1166 | 20" DUCTILE IRON PIPE | 1,110 | LF | $550.00 | $610,500.00 |
| 1026 | 8" MJ GATE VALVE | 9 | EA | $1,645.00 | $14,805.00 |
| 1028 | 12" MJ GATE VALVE | 4 | EA | $2,818.00 | $11,272.00 |
| 1266 | 20" Butterfly Valve | 4 | EA | $7,500.00 | $30,000.00 |
| 1013 | 8" MJ 45° BEND | 24 | EA | $441.00 | $10,584.00 |
| 1015 | 12" MJ 45° BEND | 20 | EA | $765.00 | $15,300.00 |
| 1267 | 20" MJ 45° Bend | 8 | EA | $3,000.00 | $24,000.00 |
| 1036 | 8" MJ TEE | 9 | EA | $679.00 | $6,111.00 |
| 1041 | 12"X8" MJ TEE | 8 | EA | $866.00 | $6,928.00 |
| 1268 | 20" x 8" MJ Tee | 8 | EA | $7,500.00 | $60,000.00 |
| 1119 | FIRE HYDRANT ASSEMBLY WITH GATE VALVE | 8 | EA | $5,814.00 | $46,512.00 |
| 1132 | 3/4"-1" WATER SERVICE RELOCATION, OPEN CUT | 10 | EA | $1,682.00 | $16,820.00 |
| 6003 | Proposed 8" to Existing 6" Connection | 6 | LS | $6,308.00 | $37,848.00 |
| 6026 | Proposed 12" to Existing 12" Connection | 4 | LS | $10,368.00 | $41,472.00 |
| 7007 | 20" Tapping Sleeve & 20" Tapping Valve | 2 | LS | $15,000.00 | $30,000.00 |
| 6008 | Proposed 12" to Existing 8" Connection | 6 | LS | $7,446.00 | $44,676.00 |
| 6004 | Proposed 8" to Existing 8" Connection | 18 | LS | $7,122.00 | $128,196.00 |
| 5006 | ABANDON AND GROUT FILL EXISTING MAIN | 5,680 | LF | $10.00 | $56,800.00 |
| 5007 | COMPACTED AGGREGATE, NO. 53S | 4,670 | LF | $9.00 | $42,030.00 |
| 5021 | HOT MIX ASPHALT BASE | 4,670 | LF | $28.00 | $130,760.00 |
| 5023 | HOT MIX ASPHALT SURFACE | 4,670 | LF | $12.00 | $56,040.00 |

| STANDARD LUMP SUM PAY ITEMS | | | | |
|---|---|---|---|---|
| **DESCRIPTION** | **QUANTITY** | **UNIT** | **%** | **TOTAL PRICE** |
| Mobilization & Demobilization (4% - 5%) | 1 | LS | 5.0% | $87,000.00 |
| Construction Engineering (2% - 3%) | 1 | LS | 3.0% | $52,200.00 |
| Clearing & Grubbing (0.5% - 1.5%) | 1 | LS | 1.0% | $17,400.00 |
| Erosion Control Devices (1% - 2%) | 1 | LS | 2.0% | $34,800.00 |
| Maintenance of Traffic (3% - 4%) | 1 | LS | 4.0% | $69,600.00 |
| Restoration, Grading, and Seeding (2% - 3%) | 1 | LS | 3.0% | $52,200.00 |

**CONSTRUCTION COST SUBTOTAL =** $2,051,534.00
**CONTINGENCY (30%) =** $615,500.00

**TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = $2,668,000.00**

**NON-CONSTRUCTION COSTS**

| DESCRIPTION | QUANTITY | UNIT | % | TOTAL PRICE |
|---|---|---|---|---|
| Engineering Program Management Fees (estimated) | 1 | LS | 3.0% | $52,200.00 |
| Engineering Design Fees (estimated) | 1 | LS | 10.0% | $173,900.00 |
| Engineering Construction Engineering Fees (estimated) | 1 | LS | 9.6% | $166,900.00 |

**NON-CONSTRUCTION COST SUBTOTAL =** $393,000.00

**TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = $3,061,000.00**

HNTB

DECEMBER 2020
LAST REVISION JANUARY 2021

# U1071 CHARLOTTE AVENUE AND RUSSELL AVENUE WATER MAIN REPLACEMENT SCOPING REPORT

## 2022 WATER RATE CASE

December 2020
Last Revision January 2021

PREPARED FOR

**Evansville Water & Sewer Utility**
1 SE 9th Street
Suite 200
Evansville, IN 47708
Phone: (812) 421-2120
Contact: Michael Labitkze, P.E.

PREPARED BY

**HNTB Corporation**
111 Monument Circle
Suite 1200
Indianapolis, IN 46204
Phone: (317) 636-4682
Contact: Jason Hoff, P.E.

# U1071 CHARLOTTE AVENUE AND RUSSELL AVENUE WATER MAIN REPLACEMENT SCOPING REPORT

## 1. Project Summary

The proposed U1071 Charlotte Avenue and Russell Avenue Water Main Replacement Project includes the replacement of approximately 2,910 feet of water main. The project is expected to include approximately three (3) fire hydrants, five (5) gate valves, and fifty-two (52) service connections. Approximately 3,230 feet of existing water main will be abandoned and filled with grout.

This proposed project was included in Preliminary Engineering Report A (PER A) in June 2018. Approximately 200 feet of proposed water main was removed from the project extents along Bement Avenue as the main was low scoring based on the 2020 distribution system scoring.

### 1.1. Project Limits

The project scope includes replacement of existing water mains along Charlotte Avenue and Russell Avenue from Ruby Avenue to Bement Avenue. The proposed project and potential alignment for proposed water mains are shown in **Figure 1**. Actual horizontal and vertical alignment will be determined during final design based on surveyed locations of existing utilities in the project area.

### 1.2. Project Drivers

The existing water mains within the proposed project limits have replacement prioritization scores ranging from 260 to 160. The average score weighted by length for the existing water mains is 213.

This project had a high replacement rating due to a high likelihood of failure criteria score from this project's short service life remaining and high operating pressure. Pipe material and low available fire flow also contributed to this project's high score.

### 1.3. Project Cost

The total capital cost estimate for the project is $1,021,000. This includes $931,000 construction costs and $90,000 non-construction costs. The project costs were estimated using the EWSU Cost Estimating Tool Scoping Report tab. The cost estimate is included at the end of the scoping report.


# Figure 1
# Project No. U1071
# Charlotte Avenue and Russell Avenue

## Legend

**Proposed Project**

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

**Water Infrastructure**

- Hydrants

**Valves**

- System Isolation
- System Separation

**Mains**

- <6"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- 24"
- 30"
- 36"
- 48"
- Private

**Pressure Zones**

- Central
- Lincoln
- Killian
- Northern

**Sanitary Infrastructure**

- Manholes
- Sewer

N

**Print Date: December 2020**

0 300 600 Feet

## 2. Hydraulic Modeling

No hydraulic modeling was performed for this project.

## 3. Environmental Assessment

An environmental assessment was performed for this project as part of PER B, therefore no additional assessment was performed for this scoping report.

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# Scoping Report

Project Capital Cost Estimate

## Charlotte Avenue and Russell Avenue Water Main Replacement

Project #: U1071

### CONSTRUCTION COSTS

| ITEM ID | DESCRIPTION | QUANTITY | UNIT | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|
| **STANDARD PAY ITEMS** | | | | | |
| 1083 | 8" PVC C900 PIPE | 2,730 | LF | $86.00 | $234,780.00 |
| 1085 | 12" PVC C900 PIPE | 180 | LF | $102.00 | $18,360.00 |
| 1026 | 8" MJ GATE VALVE | 4 | EA | $1,645.00 | $6,580.00 |
| 1028 | 12" MJ GATE VALVE | 1 | EA | $2,818.00 | $2,818.00 |
| 1013 | 8" MJ 45° BEND | 44 | EA | $441.00 | $19,404.00 |
| 1036 | 8" MJ TEE | 2 | EA | $679.00 | $1,358.00 |
| 1043 | 12" MJ TEE | 1 | EA | $982.00 | $982.00 |
| 1060 | 12"X8" MJ REDUCER | 1 | EA | $564.00 | $564.00 |
| 1119 | FIRE HYDRANT ASSEMBLY WITH GATE VALVE | 3 | EA | $5,814.00 | $17,442.00 |
| 1132 | 3/4"-1" WATER SERVICE RELOCATION, OPEN CUT | 52 | EA | $1,682.00 | $87,464.00 |
| 6007 | Proposed 12" to Existing 6" Connection | 1 | LS | $6,723.00 | $6,723.00 |
| 6026 | Proposed 12" to Existing 12" Connection | 1 | LS | $10,368.00 | $10,368.00 |
| 6004 | Proposed 8" to Existing 8" Connection | 2 | LS | $7,122.00 | $14,244.00 |
| 6025 | Proposed 8" to Existing 12" Connection | 1 | LS | $10,115.00 | $10,115.00 |
| 5006 | ABANDON AND GROUT FILL EXISTING MAIN | 3,230 | LF | $10.00 | $32,300.00 |
| 5007 | COMPACTED AGGREGATE, NO. 53S | 2,910 | LF | $9.00 | $26,190.00 |
| 5021 | HOT MIX ASPHALT BASE | 2,910 | LF | $28.00 | $81,480.00 |
| 5023 | HOT MIX ASPHALT SURFACE | 2,910 | LF | $12.00 | $34,920.00 |
| **NON-STANDARD PAY ITEMS** | | | | | |
| -- | | | | | |
| -- | | | | | |
| -- | | | | | |

| STANDARD LUMP SUM PAY ITEMS | | | | |
|---|---|---|---|---|
| **DESCRIPTION** | **QUANTITY** | **UNIT** | **%** | **TOTAL PRICE** |
| Mobilization & Demobilization (4% - 5%) | 1 | LS | 5.0% | $30,400.00 |
| Construction Engineering (2% - 3%) | 1 | LS | 3.0% | $18,200.00 |
| Clearing & Grubbing (0.5% - 1.5%) | 1 | LS | 1.0% | $6,100.00 |
| Erosion Control Devices (1% - 2%) | 1 | LS | 2.0% | $12,200.00 |
| Maintenance of Traffic (3% - 4%) | 1 | LS | 4.0% | $24,300.00 |
| Restoration, Grading, and Seeding (2% - 3%) | 1 | LS | 3.0% | $18,200.00 |

**CONSTRUCTION COST SUBTOTAL =** $715,492.00

**CONTINGENCY (30%) =** $214,700.00

**TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = $931,000.00**

### NON-CONSTRUCTION COSTS

| DESCRIPTION | QUANTITY | UNIT | % | TOTAL PRICE |
|---|---|---|---|---|
| Engineering Program Management Fees (estimated) | 1 | LS | 0% | $0.00 |
| Engineering Design Fees (estimated) | 1 | LS | 0% | $0.00 |
| Engineering Construction Engineering Fees (estimated) | 1 | LS | 9.6% | $89,400.00 |

**NON-CONSTRUCTION COST SUBTOTAL =** $90,000.00

**TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = $1,021,000.00**

HNTB

DECEMBER 2020
LAST REVISION JANUARY 2021

# U1019 FRANKLIN AVENUE AND ILLINOIS AVENUE, EAST OF PIGEON CREEK WATER MAIN REPLACEMENT SCOPING REPORT

## 2022 WATER RATE CASE

refresh EVANSVILLE

December 2020
Last Revision January 2021

PREPARED FOR

**Evansville Water & Sewer Utility**
1 SE 9th Street
Suite 200
Evansville, IN 47708
Phone: (812) 421-2120
Contact: Michael Labitkze, P.E.

PREPARED BY

**HNTB Corporation**
111 Monument Circle
Suite 1200
Indianapolis, IN 46204
Phone: (317) 636-4682
Contact: Jason Hoff, P.E.

HNTB

# U1019 FRANKLIN AVENUE AND ILLINOIS AVENUE, EAST OF PIGEON CREEK WATER MAIN REPLACEMENT SCOPING REPORT

## 1. Project Summary

The proposed U1019 Franklin Avenue and Illinois Avenue, East of Pigeon Creek Water Main Replacement Project includes the replacement of approximately 4,410 feet of water main. The project is expected to include approximately seven (7) fire hydrants, nine (9) gate valves, three (3) butterfly valves, and fifteen (15) service connections. Approximately 5,920 feet of existing water main will be abandoned and filled with grout.

The proposed project was included in the 2019 Water Rate Case in March 2018. Approximately 480 feet of proposed main was removed from the project extents along Franklin Avenue under Pigeon Creek as the main was low scoring based on the 2020 distribution scoring. Approximately 310 feet of proposed main was added to the project extents along 6th Avenue and 5th Avenue as the main was high scoring based on the 2020 distribution system scoring.

### 1.1. Project Limits

The project scope includes replacement of existing water mains along Franklin Avenue from Pigeon Creek to Fulton Avenue, Illinois Avenue from 7th Avenue to Fulton Avenue, 7th and 5th Avenues from Franklin Avenue to Illinois Avenue and 6th Avenue from Franklin Avenue to Indiana Avenue. The proposed project and potential alignment for proposed water mains are shown in **Figure 1**. Actual horizontal and vertical alignment will be determined during final design based on surveyed locations of existing utilities in the project area.

### 1.2. Project Drivers

The existing water mains within the proposed project limits have replacement prioritization scores ranging from 265 to 140. The average score weighted by length for the existing water mains is 198.

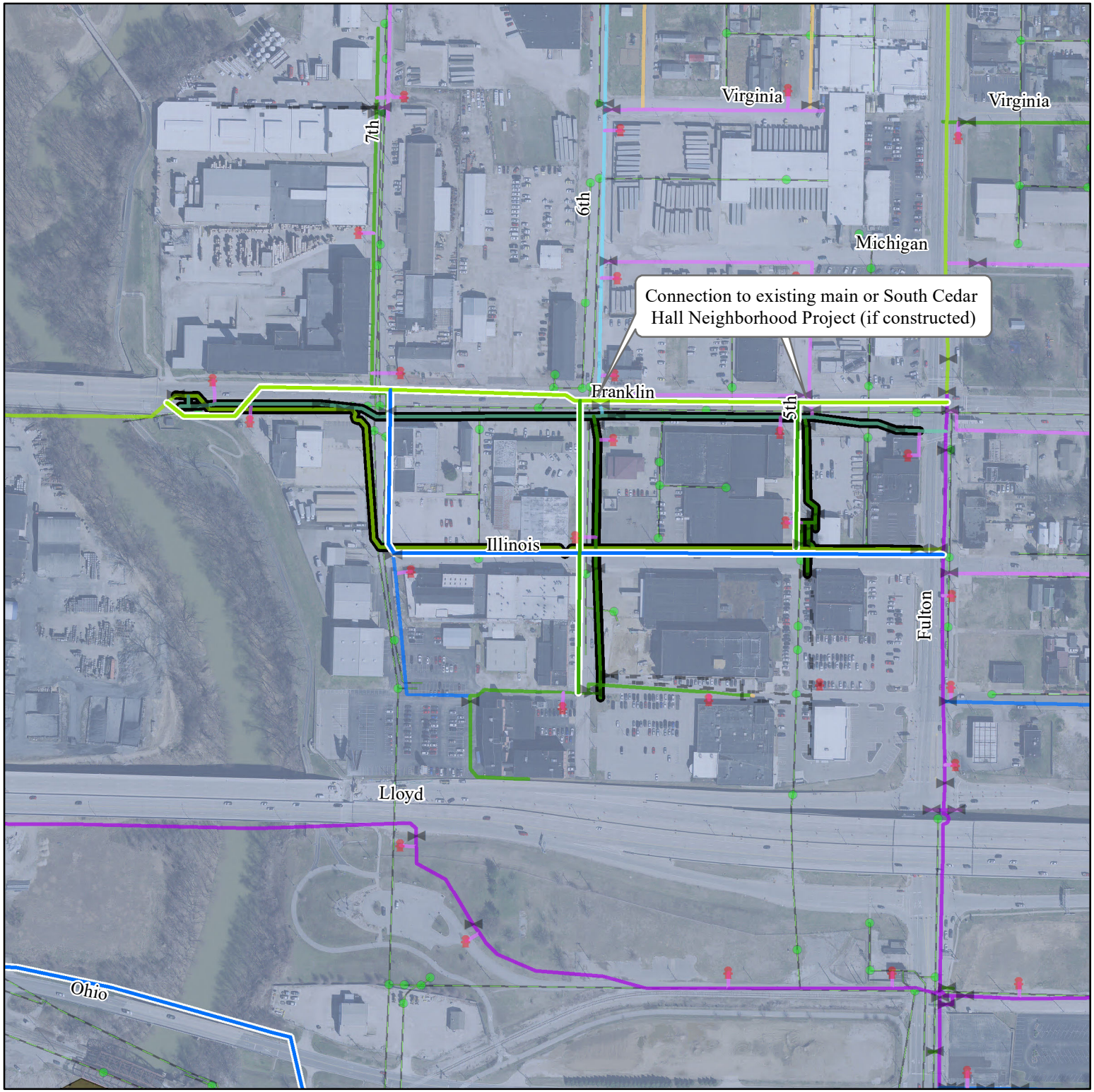
This project had a high replacement rating due to a high likelihood of failure criteria score from this project's short service life remaining. Pipe material also contributed to this project's high score.

### 1.3. Project Cost

The total capital cost estimate for the project is $3,110,000. This includes $2,837,000 construction costs and $273,000 non-construction costs. The project costs were estimated using the EWSU Cost Estimating Tool Scoping Report tab. The cost estimate is included at the end of the scoping report.

refresh EVANSVILLE
HNTB

# Franklin and Illinois Avenue, East of Pigeon Creek




## Legend

**Proposed Project**

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

**Water Infrastructure**

- Hydrants

**Valves**

- System Isolation
- System Separation

**Mains**

- <6"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- 24"
- 30"
- 36"
- 48"
- Private

**Pressure Zones**

- Central
- Lincoln
- Killian
- Northern

**Sanitary Infrastructure**

- Manholes
- Sewer

N

**Print Date: December 2020**

0 300 600 Feet

## 2. Hydraulic Modeling

No hydraulic modeling was performed for this project. Main sizing was evaluated in preparation of the Scoping Report for the 2019 Water Rate Case prepared in March 2018.

## 3. Environmental Assessment

An environmental assessment was performed for this project as part of the 2019 Water Rate Case, therefore no additional assessment was performed for this scoping report.

refresh EVANSVILLE

# Scoping Report

Project Capital Cost Estimate

## Franklin Avenue and Illinois Avenue, East of Pigeon Creek Water Main Replacement

Project #: U1019

**CONSTRUCTION COSTS**

| ITEM ID | DESCRIPTION | QUANTITY | UNIT | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|
| **STANDARD PAY ITEMS** | | | | | |
| 1166 | 20" DUCTILE IRON PIPE | 1,810 | LF | $550.00 | $995,500.00 |
| 1085 | 12" PVC C900 PIPE | 1,620 | LF | $102.00 | $165,240.00 |
| 1083 | 8" PVC C900 PIPE | 980 | LF | $86.00 | $84,280.00 |
| 1266 | 20" Butterfly Valve | 3 | EA | $7,500.00 | $22,500.00 |
| 1028 | 12" MJ GATE VALVE | 4 | EA | $2,818.00 | $11,272.00 |
| 1026 | 8" MJ GATE VALVE | 5 | EA | $1,645.00 | $8,225.00 |
| 1267 | 20" MJ 45° Bend | 29 | EA | $3,000.00 | $87,000.00 |
| 1015 | 12" MJ 45° BEND | 2 | EA | $765.00 | $1,530.00 |
| 1013 | 8" MJ 45° BEND | 9 | EA | $441.00 | $3,969.00 |
| 1271 | 20"X12" MJ Tee | 1 | EA | $8,500.00 | $8,500.00 |
| 1268 | 20"X8" MJ TEE | 2 | EA | $7,500.00 | $15,000.00 |
| 1041 | 12"X8" MJ TEE | 2 | EA | $866.00 | $1,732.00 |
| 1119 | FIRE HYDRANT ASSEMBLY WITH GATE VALVE | 7 | EA | $5,814.00 | $40,698.00 |
| 1132 | 3/4"-1" WATER SERVICE RELOCATION, OPEN CUT | 15 | EA | $1,682.00 | $25,230.00 |
| 7014 | 24" Tapping Sleeve & 20" Tapping Valve | 1 | LS | $17,500.00 | $17,500.00 |
| 7012 | 24" Tapping Sleeve & 12" Tapping Valve | 1 | LS | $12,818.00 | $12,818.00 |
| 7009 | 20" Tapping Sleeve & 20" Tapping Valve | 1 | LS | $15,000.00 | $15,000.00 |
| 6026 | Proposed 12" to Existing 12" Connection | 1 | LS | $10,368.00 | $10,368.00 |
| 6004 | Proposed 8" to Existing 8" Connection | 1 | LS | $7,122.00 | $7,122.00 |
| 6016 | Proposed 20" to Existing 8" Connection | 2 | LS | $15,785.00 | $31,570.00 |
| 6015 | Proposed 20" to Existing 6" Connection | 1 | LS | $15,100.00 | $15,100.00 |
| 5006 | ABANDON AND GROUT FILL EXISTING MAIN | 5,290 | LF | $10.00 | $52,900.00 |
| 5007 | COMPACTED AGGREGATE, NO. 53S | 4,410 | LF | $9.00 | $39,690.00 |
| 5021 | HOT MIX ASPHALT BASE | 4,410 | LF | $28.00 | $123,480.00 |
| 5023 | HOT MIX ASPHALT SURFACE | 4,410 | LF | $12.00 | $52,920.00 |
| **NON-STANDARD PAY ITEMS** | | | | | |
| -- | | | | | |
| **STANDARD LUMP SUM PAY ITEMS** | | | | | |
| **DESCRIPTION** | | **QUANTITY** | **UNIT** | **%** | **TOTAL PRICE** |
| Mobilization & Demobilization (4% - 5%) | | 1 | LS | 5.0% | $92,500.00 |
| Construction Engineering (2% - 3%) | | 1 | LS | 3.0% | $55,500.00 |
| Clearing & Grubbing (0.5% - 1.5%) | | 1 | LS | 1.0% | $18,500.00 |
| Erosion Control Devices (1% - 2%) | | 1 | LS | 2.0% | $37,000.00 |
| Maintenance of Traffic (3% - 4%) | | 1 | LS | 4.0% | $74,000.00 |
| Restoration, Grading, and Seeding (2% - 3%) | | 1 | LS | 3.0% | $55,500.00 |

**CONSTRUCTION COST SUBTOTAL =** $2,182,144.00

**CONTINGENCY (30%) =** $654,700.00

**TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = $2,837,000.00**

**NON-CONSTRUCTION COSTS**

| DESCRIPTION | QUANTITY | UNIT | % | TOTAL PRICE |
|---|---|---|---|---|
| Engineering Program Management Fees (estimated) | 1 | LS | 0% | $0.00 |
| Engineering Design Fees (estimated) | 1 | LS | 0% | $0.00 |
| Engineering Construction Engineering Fees (estimated) | 1 | LS | 9.6% | $272,400.00 |

**NON-CONSTRUCTION COST SUBTOTAL =** $273,000.00

**TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = $3,110,000.00**

HNTB

DECEMBER 2020
LAST REVISION JANUARY 2021

# U1062 OHIO STREET, PIGEON CREEK TO ST JOSEPH AVENUE WATER MAIN REPLACEMENT SCOPING REPORT

## 2022 WATER RATE CASE

December 2020
Last Revision January 2021

PREPARED FOR

**Evansville Water & Sewer Utility**
1 SE 9th Street
Suite 200
Evansville, IN 47708
Phone: (812) 421-2120
Contact: Michael Labitkze, P.E.

PREPARED BY

**HNTB Corporation**
111 Monument Circle
Suite 1200
Indianapolis, IN 46204
Phone: (317) 636-4682
Contact: Jason Hoff, P.E.

# U1062 OHIO STREET, PIGEON CREEK TO ST JOSEPH AVENUE WATER MAIN REPLACEMENT SCOPING REPORT

## 1. Project Summary

The proposed U1062 Ohio Street, Pigeon Creek to St Joseph Avenue Water Main Replacement Project includes the replacement of approximately 5,270 feet of water main. The project is expected to include approximately ten (10) fire hydrants, ten (10) gate valves, and fifteen (15) service connections. Approximately 4,200 feet of existing water main will be abandoned and filled with grout.

The proposed project was included in the 2019 Water Rate Case in March 2018. Approximately 400 feet of proposed main was removed from the project extents along Ohio Street west of Pigeon Creek as the main was low scoring based on the 2020 distribution scoring.

### 1.1. Project Limits

The project scope includes replacement of existing water mains along Ohio Street east of Ray Becker Parkway, Ray Becker Parkway south of Ohio Street and 9th Avenue from Lloyd Expressway to Ohio Street. The proposed project and potential alignment for proposed water mains are shown in **Figure 1**. Actual horizontal and vertical alignment will be determined during final design based on surveyed locations of existing utilities in the project area.

### 1.2. Project Drivers

The existing water mains within the proposed project limits have replacement prioritization scores ranging from 120 to 250. The average score weighted by length for the existing water mains is 205.

This project had a high replacement rating due to a high likelihood of failure criteria score which is from this project's short service life remaining. Pipe material also contributed to this project's high score.

### 1.3. Project Cost

The total capital cost estimate for the project is $1,771,000. This includes $1,615,000 construction costs and $156,000 non-construction costs. The project costs were estimated using the EWSU Cost Estimating Tool Scoping Report tab. The cost estimate is included at the end of the scoping report.


# Figure 1
# Project No. U1062
# Ohio Street, Pigeon Creek to St Joseph Avenue

## Legend

**Proposed Project**

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

**Water Infrastructure**

- Hydrants

**Valves**

- System Isolation
- System Separation

**Mains**

- <6"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- 24"
- 30"
- 36"
- 48"
- Private

**Pressure Zones**

- Central
- Lincoln
- Killian
- Northern

**Sanitary Infrastructure**

- Manholes
- Sewer

N

**Print Date: December 2020**

0 600 1,200 Feet

## 2. Hydraulic Modeling

No hydraulic modeling was performed for this project. Main sizing was evaluated in preparation of the Scoping Report for the 2019 Water Rate Case prepared in March 2018.

## 3. Environmental Assessment

An environmental assessment was performed for this project as part of the 2019 Water Rate Case, therefore no additional assessment was performed for this scoping report.

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# Scoping Report

Project Capital Cost Estimate

## Ohio Street, Pigeon Creek to Saint Joseph Avenue Water Main Replacement

Project #: U1062

### CONSTRUCTION COSTS

| ITEM ID | DESCRIPTION | QUANTITY | UNIT | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|
| **STANDARD PAY ITEMS** | | | | | |
| 1085 | 12" PVC C900 PIPE | 4,770 | LF | $102.00 | $486,540.00 |
| 3036 | 12" HDPE PIPE | 370 | LF | $50.00 | $18,500.00 |
| 1091 | 12" DUCTILE IRON PIPE | 130 | LF | $192.00 | $24,960.00 |
| 1141 | 16" STEEL CASING PIPE | 130 | LF | $160.00 | $20,800.00 |
| 1098 | 12" SOLID SLEEVE | 6 | EA | $394.00 | $2,364.00 |
| 1028 | 12" MJ GATE VALVE | 10 | EA | $2,818.00 | $28,180.00 |
| 1015 | 12" MJ 45° BEND | 27 | EA | $765.00 | $20,655.00 |
| 1043 | 12" MJ TEE | 2 | EA | $982.00 | $1,964.00 |
| 1119 | FIRE HYDRANT ASSEMBLY WITH GATE VALVE | 10 | EA | $5,814.00 | $58,140.00 |
| 1132 | 3/4"-1" WATER SERVICE RELOCATION, OPEN CUT | 15 | EA | $1,682.00 | $25,230.00 |
| 6026 | Proposed 12" to Existing 12" Connection | 5 | LS | $10,368.00 | $51,840.00 |
| 7012 | 24" Tapping Sleeve & 12" Tapping Valve | 1 | LS | $12,818.00 | $12,818.00 |
| 5006 | ABANDON AND GROUT FILL EXISTING MAIN | 4,200 | LF | $10.00 | $42,000.00 |
| 5007 | COMPACTED AGGREGATE, NO. 53S | 5,270 | LF | $9.00 | $47,430.00 |
| 5021 | HOT MIX ASPHALT BASE | 5,270 | LF | $28.00 | $147,560.00 |
| 5023 | HOT MIX ASPHALT SURFACE | 5,270 | LF | $12.00 | $63,240.00 |
| | | | | | |
| | | | | | |
| **NON-STANDARD PAY ITEMS** | | | | | |
| -- | | | | | |
| -- | | | | | |
| -- | | | | | |

| STANDARD LUMP SUM PAY ITEMS | | | | |
|---|---|---|---|---|
| **DESCRIPTION** | **QUANTITY** | **UNIT** | **%** | **TOTAL PRICE** |
| Mobilization & Demobilization (4% - 5%) | 1 | LS | 5.0% | $52,700.00 |
| Construction Engineering (2% - 3%) | 1 | LS | 3.0% | $31,600.00 |
| Clearing & Grubbing (0.5% - 1.5%) | 1 | LS | 1.0% | $10,600.00 |
| Erosion Control Devices (1% - 2%) | 1 | LS | 2.0% | $21,100.00 |
| Maintenance of Traffic (3% - 4%) | 1 | LS | 4.0% | $42,100.00 |
| Restoration, Grading, and Seeding (2% - 3%) | 1 | LS | 3.0% | $31,600.00 |

**CONSTRUCTION COST SUBTOTAL =** $1,241,921.00

**CONTINGENCY (30%) =** $372,600.00

**TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = $1,615,000.00**

### NON-CONSTRUCTION COSTS

| DESCRIPTION | QUANTITY | UNIT | % | TOTAL PRICE |
|---|---|---|---|---|
| Engineering Program Management Fees (estimated) | 1 | LS | 0% | $0.00 |
| Engineering Design Fees (estimated) | 1 | LS | 0% | $0.00 |
| Engineering Construction Engineering Fees (estimated) | 1 | LS | 9.6% | $155,100.00 |

**NON-CONSTRUCTION COST SUBTOTAL =** $156,000.00

**TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = $1,771,000.00**

# U1069 SPEAKER ROAD, JAMES AVENUE AND NOLAN AVENUE WATER MAIN REPLACEMENT SCOPING REPORT

## 2022 WATER RATE CASE

December 2020
Last Revision January 2021

PREPARED FOR

**Evansville Water & Sewer Utility**
1 SE 9th Street
Suite 200
Evansville, IN 47708
Phone: (812) 421-2120
Contact: Michael Labitkze, P.E.

PREPARED BY

**HNTB Corporation**
111 Monument Circle
Suite 1200
Indianapolis, IN 46204
Phone: (317) 636-4682
Contact: Jason Hoff, P.E.

# U1069 SPEAKER ROAD, JAMES AVENUE AND NOLAN AVENUE WATER MAIN REPLACEMENT SCOPING REPORT

## 1. Project Summary

The proposed U1069 Speaker Road, James Avenue and Nolan Avenue Water Main Replacement Project includes the replacement of approximately 2,970 feet of water main. The project is expected to include approximately five (5) fire hydrants, six (6) gate valves, two (2) automatic flushing device, and thirty-five (35) service connections. Approximately 2,800 feet of existing water main will be abandoned and filled with grout.

This proposed project was included in Preliminary Engineering Report A (PER A) in June 2018. No changes to the extents of the project were made based on the 2020 distribution system scoring.

### 1.1. Project Limits

The project scope includes replacement of existing water mains along Speaker Road from Broadway Avenue to just past Nolan Avenue, James Avenue and Nolan Avenue. The proposed project and potential alignment for proposed water mains are shown in **Figure 1**. Actual horizontal and vertical alignment will be determined during final design based on surveyed locations of existing utilities in the project area.

### 1.2. Project Drivers

The existing water mains within the proposed project limits have replacement prioritization scores ranging from 250 to 170. The average score weighted by length for the existing water mains is 205.

This project had a high replacement rating due to a high likelihood of failure criteria score from this project's high operating pressure. Pipe material and low available fire flow also contributed to this project's high score.

### 1.3. Project Cost

The total capital cost estimate for the project is $913,000. This includes $833,000 construction costs and $80,000 non-construction costs. The project costs were estimated using the EWSU Cost Estimating Tool Scoping Report tab. The cost estimate is included at the end of the scoping report.


# Figure 1
# Project No. U1069
# Speaker Road, James Avenue, and Nolan Avenue

**Legend**

**Proposed Project**

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

**Water Infrastructure**

- Hydrants

**Valves**

- System Isolation
- System Separation

**Mains**

- <6"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- 24"
- 30"
- 36"
- 48"
- Private

**Pressure Zones**

- Central
- Lincoln
- Killian
- Northern

**Sanitary Infrastructure**

- Manholes
- Sewer

N

**Print Date: December 2020**

0 350 700 Feet

## 2. Hydraulic Modeling

No hydraulic modeling was performed for this project.

## 3. Environmental Assessment

An environmental assessment was performed for this project as part of PER B, therefore no additional assessment was performed for this scoping report.

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# Scoping Report

Project Capital Cost Estimate

**Speaker Road, James Avenue and Nolan Avenue Water Main Replacement**
Project #: U1069

**CONSTRUCTION COSTS**

| ITEM ID | DESCRIPTION | QUANTITY | UNIT | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|
| **STANDARD PAY ITEMS** | | | | | |
| 1083 | 8" PVC C900 PIPE | 2,280 | LF | $86.00 | $196,080.00 |
| 1081 | 4" PVC C900 PIPE | 610 | LF | $67.00 | $40,870.00 |
| 3035 | 8" HDPE PIPE | 80 | LF | $40.00 | $3,200.00 |
| 1096 | 8" SOLID SLEEVE | 2 | EA | $394.00 | $788.00 |
| 1026 | 8" MJ GATE VALVE | 4 | EA | $1,645.00 | $6,580.00 |
| 1024 | 4" MJ GATE VALVE | 2 | EA | $1,061.00 | $2,122.00 |
| 1013 | 8" MJ 45° BEND | 4 | EA | $441.00 | $1,764.00 |
| 1036 | 8" MJ TEE | 2 | EA | $679.00 | $1,358.00 |
| 1078 | 8"X4" MJ REDUCER | 2 | EA | $384.00 | $768.00 |
| 1119 | FIRE HYDRANT ASSEMBLY WITH GATE VALVE | 5 | EA | $5,814.00 | $29,070.00 |
| 1126 | AUTOMATIC FLUSH DEVICE WITH GATE VALVE (9400) | 2 | EA | $5,212.00 | $10,424.00 |
| 1132 | 3/4"-1" WATER SERVICE RELOCATION, OPEN CUT | 35 | EA | $1,682.00 | $58,870.00 |
| 6025 | Proposed 8" to Existing 12" Connection | 1 | LS | $10,115.00 | $10,115.00 |
| 6004 | Proposed 8" to Existing 8" Connection | 1 | LS | $7,122.00 | $7,122.00 |
| 5006 | ABANDON AND GROUT FILL EXISTING MAIN | 2,800 | LF | $10.00 | $28,000.00 |
| 5007 | COMPACTED AGGREGATE, NO. 53S | 2,970 | LF | $9.00 | $26,730.00 |
| 5021 | HOT MIX ASPHALT BASE | 2,970 | LF | $28.00 | $83,160.00 |
| 5023 | HOT MIX ASPHALT SURFACE | 2,970 | LF | $12.00 | $35,640.00 |
| **NON-STANDARD PAY ITEMS** | | | | | |
| -- | | | | | |
| -- | | | | | |
| -- | | | | | |

| STANDARD LUMP SUM PAY ITEMS | | | | |
|---|---|---|---|---|
| **DESCRIPTION** | **QUANTITY** | **UNIT** | **%** | **TOTAL PRICE** |
| Mobilization & Demobilization (4% - 5%) | 1 | LS | 5.0% | $27,200.00 |
| Construction Engineering (2% - 3%) | 1 | LS | 3.0% | $16,300.00 |
| Clearing & Grubbing (0.5% - 1.5%) | 1 | LS | 1.0% | $5,500.00 |
| Erosion Control Devices (1% - 2%) | 1 | LS | 2.0% | $10,900.00 |
| Maintenance of Traffic (3% - 4%) | 1 | LS | 4.0% | $21,800.00 |
| Restoration, Grading, and Seeding (2% - 3%) | 1 | LS | 3.0% | $16,300.00 |

**CONSTRUCTION COST SUBTOTAL =** $640,661.00

**CONTINGENCY (30%) =** $192,200.00

**TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = $833,000.00**

**NON-CONSTRUCTION COSTS**

| DESCRIPTION | QUANTITY | UNIT | % | TOTAL PRICE |
|---|---|---|---|---|
| Engineering Program Management Fees (estimated) | 1 | LS | 0% | $0.00 |
| Engineering Design Fees (estimated) | 1 | LS | 0% | $0.00 |
| Engineering Construction Engineering Fees (estimated) | 1 | LS | 9.6% | $80,000.00 |

**NON-CONSTRUCTION COST SUBTOTAL =** $80,000.00

**TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = $913,000.00**

# WALNUT PHASE 3, MLK TO US 41 ROADWORK WATER MAIN RELOCATION SCOPING REPORT

## 2022 WATER RATE CASE

January 2021

PREPARED FOR

**Evansville Water & Sewer Utility**
1 SE 9th Street
Suite 200
Evansville, IN 47708
Phone: (812) 421-2120
Contact: Michael Labitkze, P.E.

PREPARED BY

**HNTB Corporation**
111 Monument Circle
Suite 1200
Indianapolis, IN 46204
Phone: (317) 636-4682
Contact: Jason Hoff, P.E.

# WALNUT PHASE 3, MLK TO US 41 ROADWORK WATER MAIN RELOCATION SCOPING REPORT

## 1. Project Summary

The proposed Walnut Phase 3, MLK To US 41 Roadwork Water Main Relocation Project includes relocation of approximately 4,270 feet of water main. The project is expected to include approximately seven (7) fire hydrants, six (6) gate valves, and thirty-one (31) service connections. Approximately 4,060 feet of existing water main will be abandoned and filled with grout.

### 1.1. Project Limits

The project scope includes relocation of existing water mains along E Walnut Street from Martin Luther King Jr Boulevard to S Morton Avenue due to a planned road project. For planning purposes it was assumed that all water main within the project limits will need to be relocated with the exception of 24-inch water main that was installed in 2014. It was assumed that the road reconstruction project and associated storm water infrastructure will be designed to avoid conflicts with the 24-inch water main. The proposed project and potential alignment for the proposed water mains are shown in **Figure 1**. Actual horizontal and vertical alignment will be determined during final design based on surveyed locations of existing utilities in the project area and the final design of the road project.

### 1.2. Project Drivers

A road project is planned for Walnut Street within the project limits and may require the relocation of some or all of the water main. Though not being driven by the replacement criteria scoring, the existing water mains within the proposed project limits have replacement prioritization scores ranging from 130 to 245. The average score weighted by length for the existing water mains is 208.

### 1.3. Project Cost

The total capital cost estimate for the project is $1,987,000. This includes $1,620,000 construction costs and $367,000 non-construction costs. The project costs were estimated using the EWSU Cost Estimating Tool Scoping Report tab. The cost estimate is included at the end of the scoping report.

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# Figure 1
# R1 Walnut Phase 3, MLK to US 41 Roadwork Water Main Replacement


## Legend

**Proposed Project**

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

**Water Infrastructure**

- Hydrants

**Valves**

- System Isolation
- System Separation

**Mains**

- Private
- <6"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- 24"
- 30"
- 36"
- 48"

**Pressure Zones**

- Central
- Lincoln
- Killian
- Northern

**Sanitary Infrastructure**

- Manholes
- Sewer

N

**Print Date: January 2021**

0 500 1,000 Feet

# 2. Hydraulic Modeling

The available fire flow within the project limits and surrounding areas were evaluated using the WaterGEMS distribution system model under maximum day demands of 26.7 million gallons per day (MGD) based upon 2019 data. One (1) alternative was evaluated for replacement. Alternative 1 includes replacement with 8-inch diameter water main for all existing mains less than or equal to 8-inch diameter and replacement in kind of 24-inch diameter water main except for that which was recently replaced (2014).

## 2.1. Results

The existing available fire flow in the project limits are shown in **Figure 2**. The available fire flow in the project limits for Alternative 1 are shown in **Figure 3**.

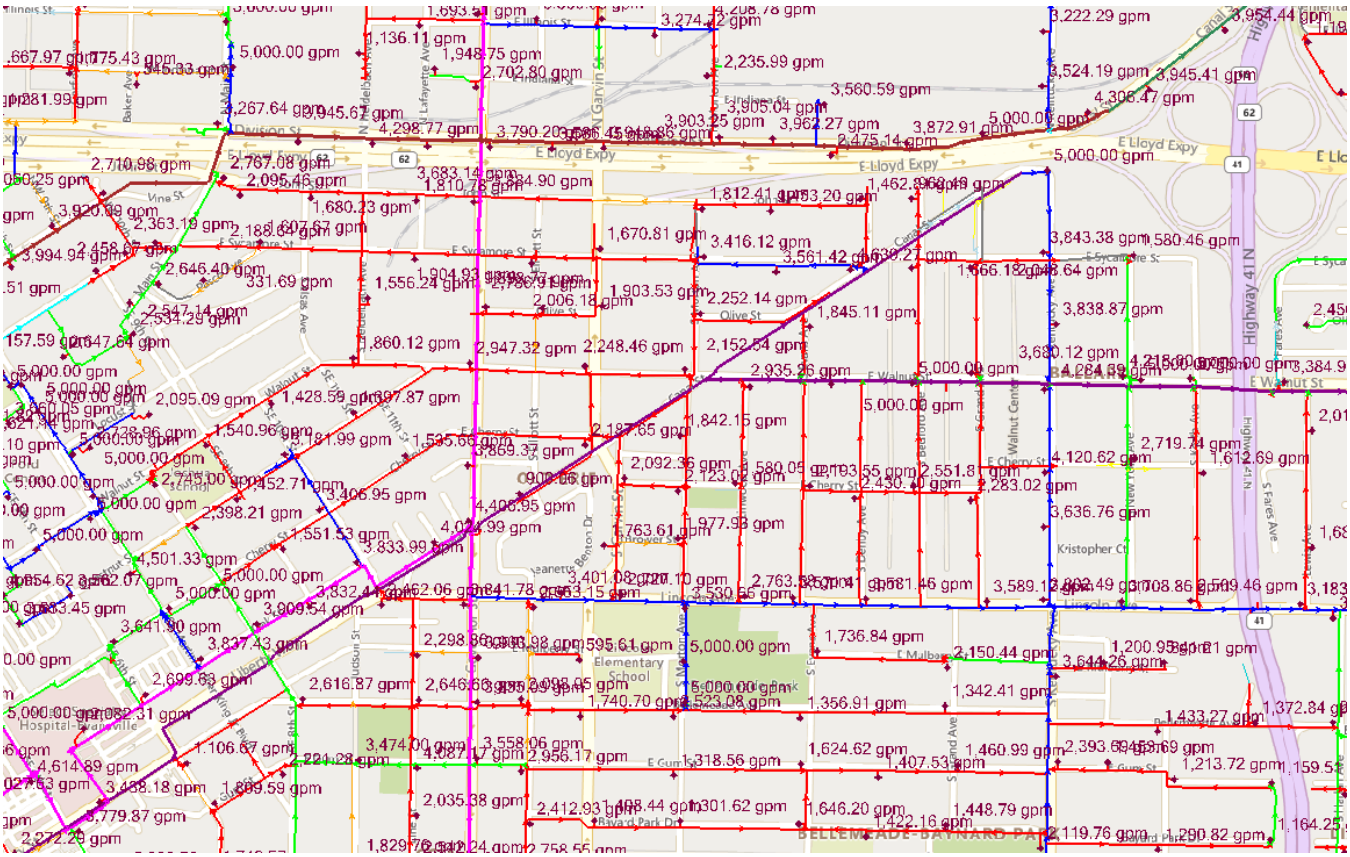


**Figure 2. Existing Available Fire Flow**

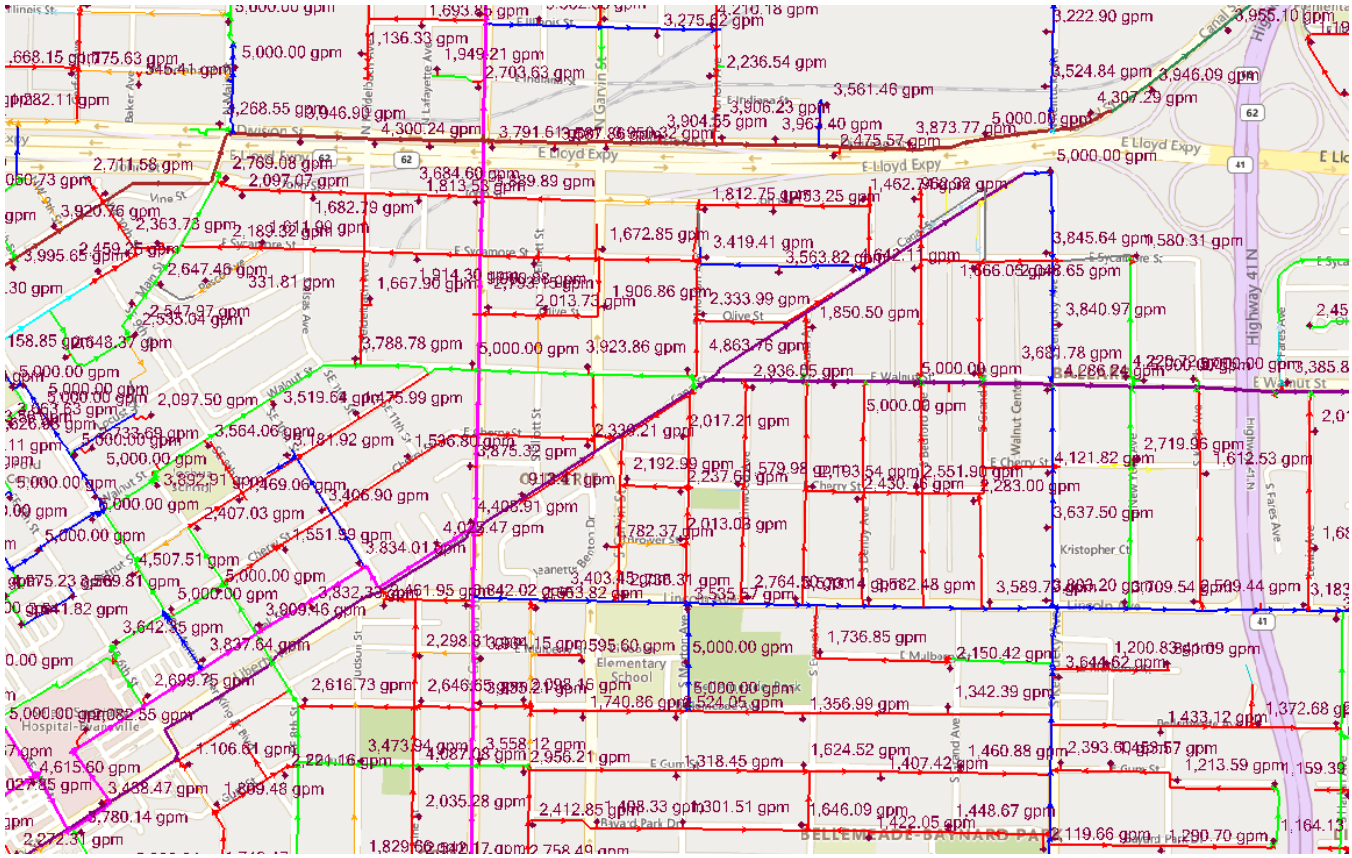


**Figure 3. Alternative 1 Available Fire Flow**

### 2.1. Conclusion

The project area is primarily commercial, so the required fire flow is expected to be approximately 2,000 gallons per minute. Alternative 1 provides the required fire flow therefore Alternative 1 was selective to provide the required fire flow in the project area.

## 3. Environmental Assessment

No environmental assessment was performed for this project scoping report.

refresh EVANSVILLE

# Scoping Report

Project Capital Cost Estimate

## Walnut Ph 3, MLK to US 41 Roadwork Water Main Relocation

Project #: R1

### CONSTRUCTION COSTS

| ITEM ID | DESCRIPTION | QUANTITY | UNIT | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|
| **STANDARD PAY ITEMS** | | | | | |
| 1083 | 8" PVC C900 PIPE | 4,060 | LF | $86.00 | $349,160.00 |
| 1167 | 24" DUCTILE IRON PIPE | 210 | LF | $582.00 | $122,220.00 |
| 1026 | 8" MJ GATE VALVE | 6 | EA | $1,645.00 | $9,870.00 |
| 1013 | 8" MJ 45° BEND | 13 | EA | $441.00 | $5,733.00 |
| 1225 | 24" MJ 45° BEND | 33 | EA | $3,495.00 | $115,335.00 |
| 1036 | 8" MJ TEE | 4 | EA | $679.00 | $2,716.00 |
| 1119 | FIRE HYDRANT ASSEMBLY WITH GATE VALVE | 7 | EA | $5,814.00 | $40,698.00 |
| 1132 | 3/4"-1" WATER SERVICE RELOCATION, OPEN CUT | 31 | EA | $1,682.00 | $52,142.00 |
| 6025 | Proposed 8" to Existing 12" Connection | 1 | LS | $10,115.00 | $10,115.00 |
| 6003 | Proposed 8" to Existing 6" Connection | 6 | LS | $6,308.00 | $37,848.00 |
| 6002 | Proposed 8" to Existing 4" Connection | 1 | LS | $5,964.00 | $5,964.00 |
| 7015 | 24" Tapping Sleeve & 24" Tapping Valve | 2 | LS | $20,094.00 | $40,188.00 |
| 7002 | 16" Tapping Sleeve & 8" Tapping Valve | 2 | LS | $6,645.00 | $13,290.00 |
| 5006 | ABANDON AND GROUT FILL EXISTING MAIN | 4,060 | LF | $10.00 | $40,600.00 |
| 5007 | COMPACTED AGGREGATE, NO. 53S | 4,270 | LF | $9.00 | $38,430.00 |
| 5021 | HOT MIX ASPHALT BASE | 4,270 | LF | $28.00 | $119,560.00 |
| 5023 | HOT MIX ASPHALT SURFACE | 4,270 | LF | $12.00 | $51,240.00 |
| | | | | | |
| | | | | | |
| **NON-STANDARD PAY ITEMS** | | | | | |
| -- | | | | | |
| -- | | | | | |
| -- | | | | | |

| STANDARD LUMP SUM PAY ITEMS | | | | |
|---|---|---|---|---|
| **DESCRIPTION** | **QUANTITY** | **UNIT** | **%** | **TOTAL PRICE** |
| Mobilization & Demobilization (4% - 5%) | 1 | LS | 5.0% | $52,800.00 |
| Construction Engineering (2% - 3%) | 1 | LS | 3.0% | $31,700.00 |
| Clearing & Grubbing (0.5% - 1.5%) | 1 | LS | 1.0% | $10,600.00 |
| Erosion Control Devices (1% - 2%) | 1 | LS | 2.0% | $21,200.00 |
| Maintenance of Traffic (3% - 4%) | 1 | LS | 4.0% | $42,300.00 |
| Restoration, Grading, and Seeding (2% - 3%) | 1 | LS | 3.0% | $31,700.00 |

**CONSTRUCTION COSTS SUBTOTAL =** $1,245,409.00

**CONTINGENCY (30%) =** $373,700.00

**TOTAL ESTIMATED CONSTRUCTION COSTS, SCOPING REPORT = $1,620,000.00**

### NON-CONSTRUCTION COSTS

| DESCRIPTION | QUANTITY | UNIT | % | TOTAL PRICE |
|---|---|---|---|---|
| Engineering Program Management Fees (estimated) | 1 | LS | 3.0% | $48,600.00 |
| Engineering Design Fees (estimated) | 1 | LS | 10.0% | $162,000.00 |
| Engineering Construction Engineering Fees (estimated) | 1 | LS | 9.6% | $155,600.00 |

**NON-CONSTRUCTION COSTS SUBTOTAL =** $367,000.00

**TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = $1,987,000.00**

# LLOYD EXPRESSWAY, ROSENBERGER TO EPWORTH INDOT ROADWORK WATER MAIN RELOCATION SCOPING REPORT

## 2022 WATER RATE CASE

January 2021

PREPARED FOR

**Evansville Water & Sewer Utility**
1 SE 9th Street
Suite 200
Evansville, IN 47708
Phone: (812) 421-2120
Contact: Michael Labitkze, P.E.

PREPARED BY

**HNTB Corporation**
111 Monument Circle
Suite 1200
Indianapolis, IN 46204
Phone: (317) 636-4682
Contact: Jason Hoff, P.E.

# LLOYD EXPRESSWAY, ROSENBERGER TO EPWORTH INDOT ROADWORK WATER MAIN RELOCATION SCOPING REPORT

## 1. Project Summary

The proposed Lloyd Expressway, Rosenberger To Epworth INDOT Roadwork Water Main Relocation Project includes relocation of approximately 17,110 feet of water main. The project is expected to include approximately eleven (11) fire hydrants, twenty-five (25) gate valves, seven (7) butterfly valves, and one hundred and one (101) service connections. Approximately 21,030 feet of existing water main will be abandoned and filled with grout.

This proposed project was included in Preliminary Engineering Report B (PER B) in May 2019. Approximately 10,220 feet were added to the project to avoid potential conflicts with the road project.

### 1.1. Project Limits

The project scope includes relocation of existing water mains at the intersection of the Lloyd Expressway and Rosenberger Avenue, along the Lloyd Expressway from Tekoppel Avenue to 9th Avenue, Tekoppel Avenue from the Lloyd Expressway to Edgewood Drive, at the intersection of the Lloyd Expressway and Vann Avenue, and at the intersection of the Lloyd Expressway and Cross Pointe Boulevard due to a planned road project. The proposed project and potential alignment for the proposed water mains are shown in **Figure 1**. Actual horizontal and vertical alignment will be determined during final design based on surveyed locations of existing utilities in the project area and the final design of the road project.

### 1.2. Project Drivers

A road project is planned for the Lloyd Expressway within the project limits and may require the relocation of some or all of the water main. Though not being driven by the replacement criteria scoring, the existing water mains within the proposed project limits have replacement prioritization scores ranging from 110 to 290. The average score weighted by length for the existing water mains is 168.

### 1.3. Project Cost

The total capital cost estimate for the project is $15,952,000. This includes $13,011,000 construction costs and $2,941,000 non-construction costs. The project costs were estimated using the EWSU Cost Estimating Tool Scoping Report tab. The cost estimate is included at the end of the scoping report.