

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

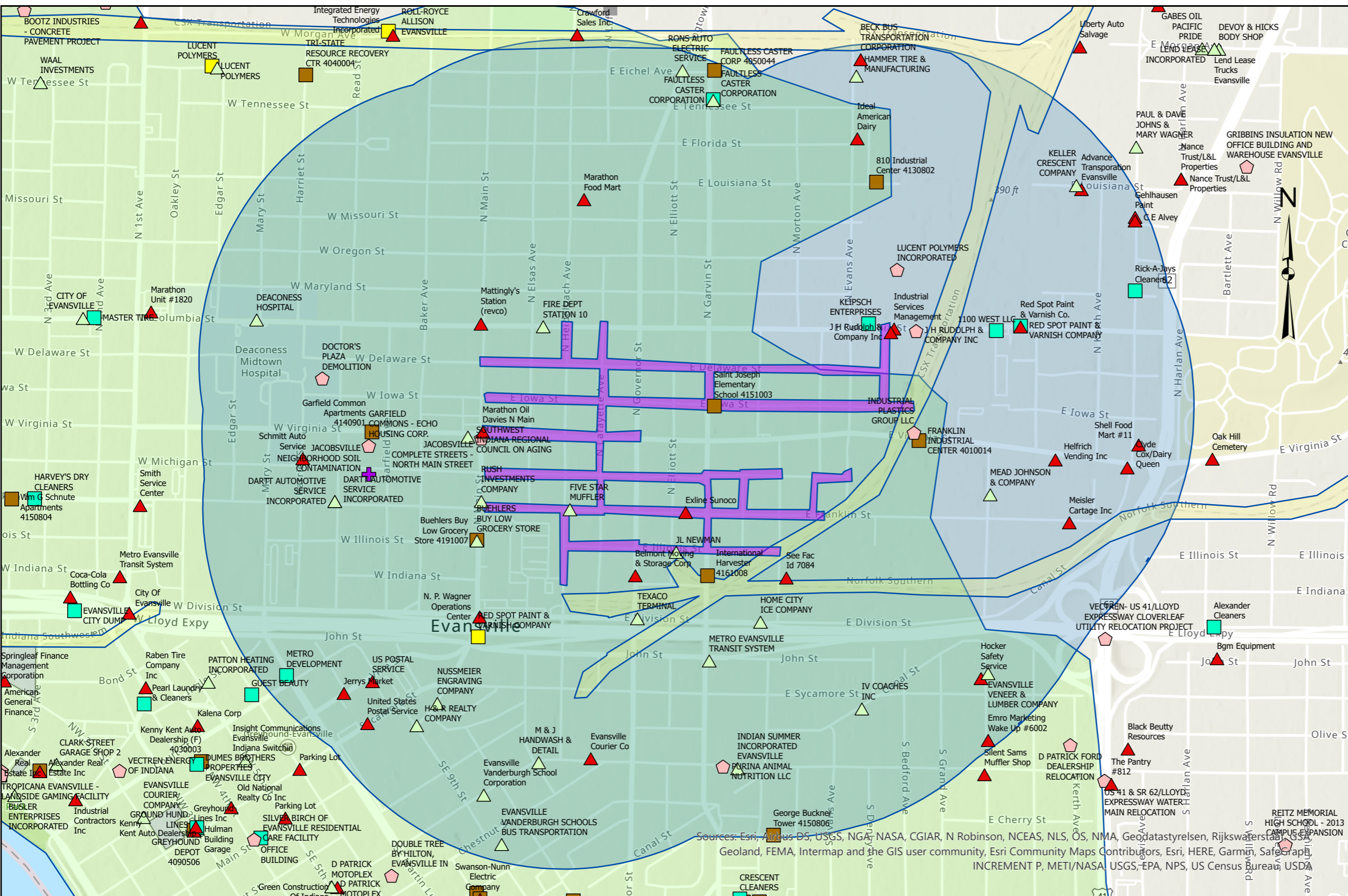
- ELECTRONIC RECYCLING FACILITY
- MANUFACTURED GAS PLANT
- NPDES FACILITY
- NPDES PIPE LOCATION
- SEPTAGE WASTE SITE
- SOLID WASTE DISPOSAL/PROCESSING FACILITY
- UNDERGROUND STORAGE TANK SITE
- WASTE TIRE SITE
- RAILROAD
- SOLID WASTE LANDFILL

PROJECT INFORMATION

- HALF MILE RADIUS
- PROPOSED PROJECT LIMITS

FILED
May 10, 2021
INDIANA UTILITY
REGULATORY COMMISSION

Figure 4



TITLE: Southeast Jacobsville Neighborhood Hazardous Materials Concerns

LOCATION: Southeast Jacobsville Neighborhood, Evansville, IN

X: 87.5599881
Y: 37.9819605

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.120-0108M

DATE: 11/6/2020



Scoping Report

Project Capital Cost Estimate

Southeast Jacobsville Neighborhood Water Main Replacement

Report #: 29

CONSTRUCTION COSTS

ITEM ID	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
STANDARD PAY ITEMS					
1083	8" PVC C900 PIPE	19,800	LF	\$86.00	\$1,702,800.00
1085	12" PVC C900 PIPE	1,700	LF	\$102.00	\$173,400.00
1091	12" DUCTILE IRON PIPE	510	LF	\$192.00	\$97,920.00
1141	16" STEEL CASING PIPE	510	LF	\$160.00	\$81,600.00
1098	12" SOLID SLEEVE	6	EA	\$394.00	\$2,364.00
1093	16" DUCTILE IRON PIPE	1,420	LF	\$121.00	\$171,820.00
1026	8" MJ GATE VALVE	35	EA	\$1,645.00	\$57,575.00
1028	12" MJ GATE VALVE	5	EA	\$2,818.00	\$14,090.00
1030	16" MJ BUTTERFLY VALVE	1	EA	\$4,171.00	\$4,171.00
1013	8" MJ 45° BEND	114	EA	\$441.00	\$50,274.00
1015	12" MJ 45° BEND	28	EA	\$765.00	\$21,420.00
1017	16" MJ 45° BEND	8	EA	\$1,409.00	\$11,272.00
1036	8" MJ TEE	18	EA	\$679.00	\$12,222.00
1049	16"X12" MJ TEE	1	EA	\$1,716.00	\$1,716.00
1047	16"X8" MJ TEE	2	EA	\$1,535.00	\$3,070.00
1041	12"X8" MJ TEE	2	EA	\$866.00	\$1,732.00
1119	FIRE HYDRANT ASSEMBLY WITH GATE VALVE	25	EA	\$5,814.00	\$145,350.00
1132	3/4"-1" WATER SERVICE RELOCATION, OPEN CUT	333	EA	\$1,682.00	\$560,106.00
7007	20" Tapping Sleeve & 12" Tapping Valve	1	LS	\$10,318.00	\$10,318.00
6003	Proposed 8" to Existing 6" Connection	2	LS	\$6,308.00	\$12,616.00
6004	Proposed 8" to Existing 8" Connection	8	LS	\$7,122.00	\$56,976.00
6012	Proposed 16" to Existing 8" Connection	1	LS	\$8,448.00	\$8,448.00
6026	Proposed 12" to Existing 12" Connection	1	LS	\$10,368.00	\$10,368.00
5006	ABANDON AND GROUT FILL EXISTING MAIN	23,050	LF	\$10.00	\$230,500.00
5007	COMPACTED AGGREGATE, NO. 53S	23,430	LF	\$9.00	\$210,870.00
5021	HOT MIX ASPHALT BASE	23,430	LF	\$28.00	\$656,040.00
5023	HOT MIX ASPHALT SURFACE	23,430	LF	\$12.00	\$281,160.00
NON-STANDARD PAY ITEMS					
--	Environmental Remediation Contingency	1	LS	5.0%	\$229,600.00
STANDARD LUMP SUM PAY ITEMS					
DESCRIPTION		QUANTITY	UNIT	%	TOTAL PRICE
Mobilization & Demobilization (4% - 5%)		1	LS	5.0%	\$241,000.00
Construction Engineering (2% - 3%)		1	LS	3.0%	\$144,600.00
Clearing & Grubbing (0.5% - 1.5%)		1	LS	1.0%	\$48,200.00
Erosion Control Devices (1% - 2%)		1	LS	2.0%	\$96,400.00
Maintenance of Traffic (3% - 4%)		1	LS	4.0%	\$192,800.00
Restoration, Grading, and Seeding (2% - 3%)		1	LS	3.0%	\$144,600.00

CONSTRUCTION COST SUBTOTAL = \$5,687,398.00

CONTINGENCY (30%) = \$1,706,300.00

TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = \$7,394,000.00

NON-CONSTRUCTION COSTS

DESCRIPTION	QUANTITY	UNIT	%	TOTAL PRICE
Engineering Program Management Fees (estimated)	1	LS	3.0%	\$221,900.00
Engineering Design Fees (estimated)	1	LS	10.0%	\$739,400.00
Engineering Construction Engineering Fees (estimated)	1	LS	9.6%	\$709,900.00

NON-CONSTRUCTION COST SUBTOTAL = \$1,672,000.00

TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = \$9,066,000.00

GOVERNOR STREET,
CANAL TO DELAWARE
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.

GOVERNOR STREET, CANAL TO DELAWARE WATER MAIN REPLACEMENT SCOPING REPORT

1. Project Summary

The proposed Governor Street, Canal to Delaware Water Main Replacement Project includes the replacement of approximately 4,540 feet of water main. The project is expected to include approximately ten (10) fire hydrants, four (4) butterfly valves, and six (6) service connections. Approximately 4,730 feet of existing water main will be abandoned and filled with grout.

1.1. Project Limits

The project scope includes replacement of existing water mains along Governor Street between Delaware Street and Canal 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 190 to 315. The average score weighted by length for the existing water mains is 221.

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 its location along Governor 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 \$2,529,000. This includes \$2,062,000 construction costs and \$467,000 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. 30
Governor Street, Canal to Delaware



Legend

Proposed Project

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

Water Infrastructure

- Hydrants
- System Isolation
- System Separation

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

- Pressure Zones**
- Central Lincoln
 - Killian Northern

- Sanitary Infrastructure**
- Manholes Sewer

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 16-inch diameter water main in 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.

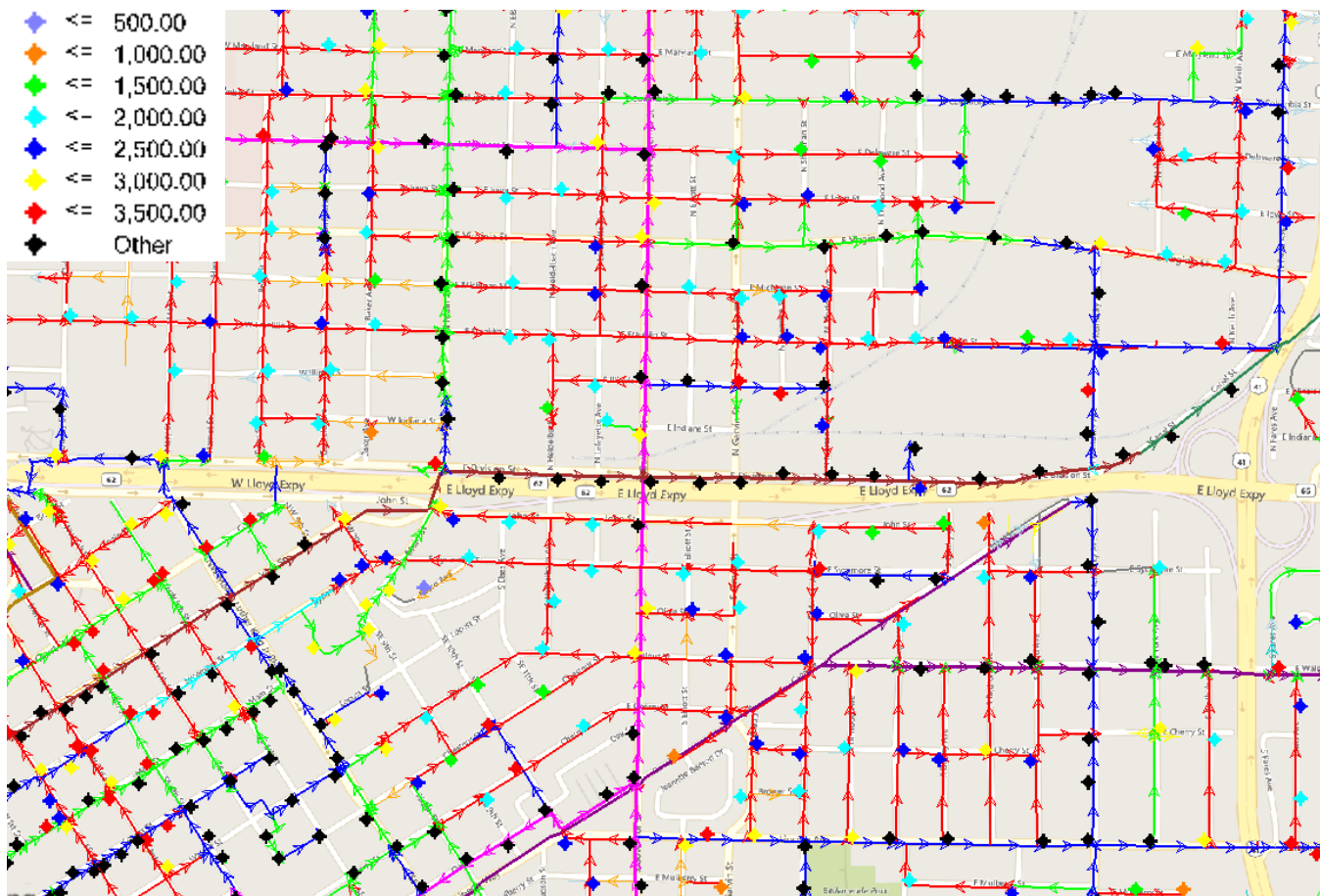


Figure 2. Existing Available Fire Flow

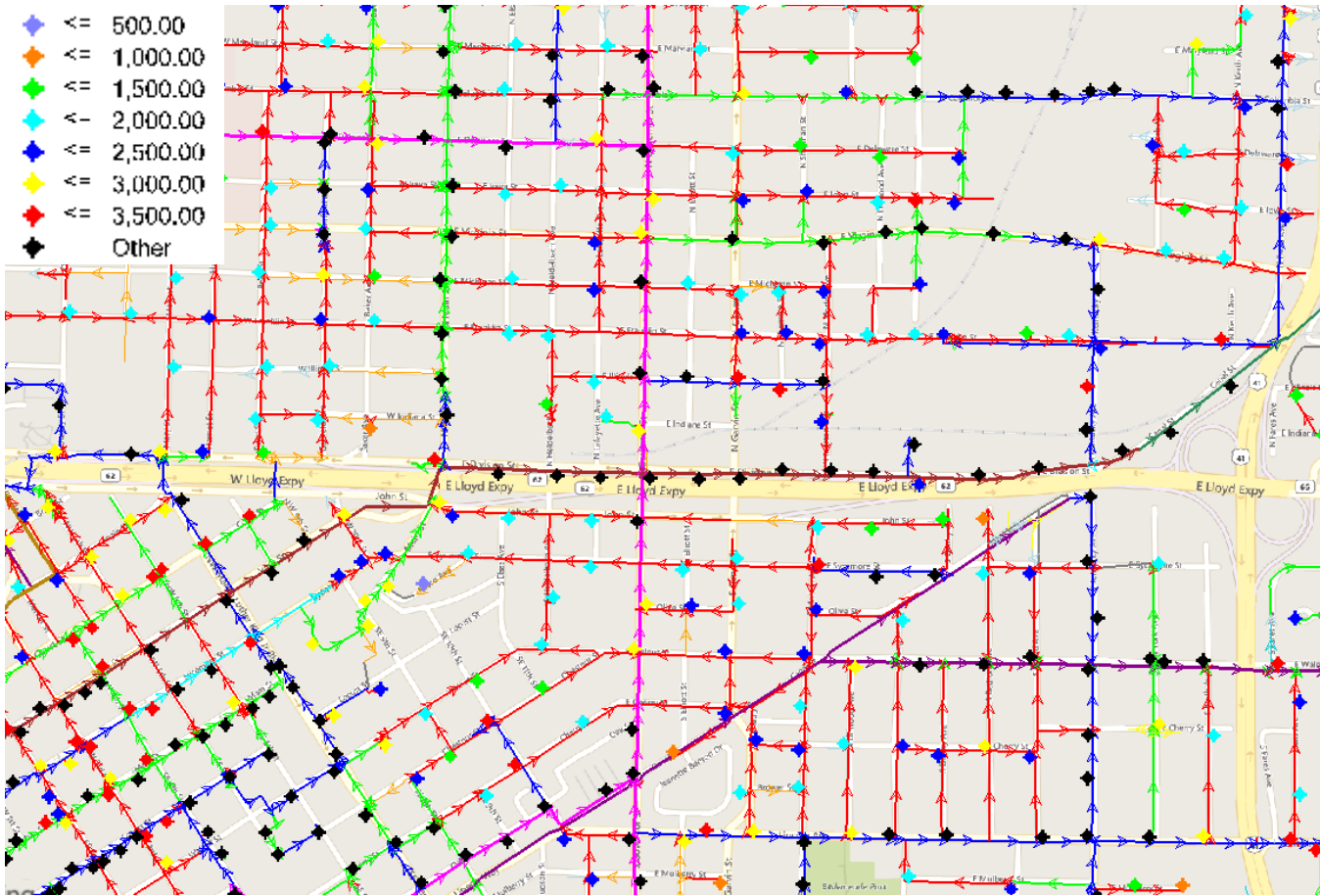


Figure 3. Alternative 1 Available Fire Flow

2.1. Conclusion

The project area is primarily commercial and residential, 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 twenty-six (26) potential contaminated sites and twenty-six (26) known contaminated sites as shown in **Figure 4**.

3.1. Site Specific Concerns

The preliminary environmental assessment identified one (1) known contaminated site with close proximity to the project. This one (1) known contaminated site includes one (1) leaking underground storage tank 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
- JACOBVILLE 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

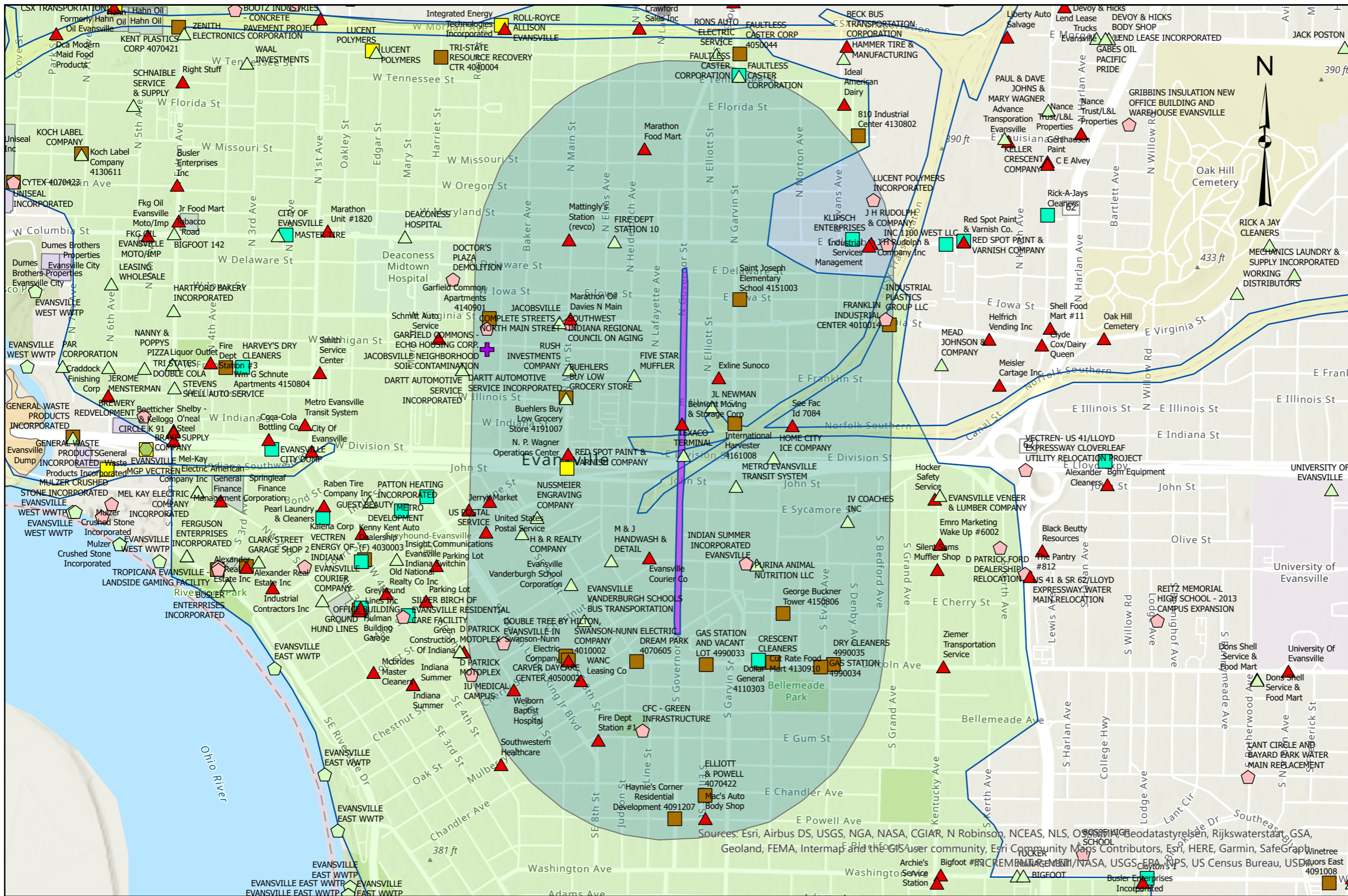


Figure 4



TITLE: Governor Street Hazardous Materials Concerns

**LOCATION: Governor Street,
Canal Street to Columbia Street,
Evansville, IN
X: 87.5589124
Y: 37.9769437**

**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.120-0108N

DATE: 11/6/2020



Scoping Report

Project Capital Cost Estimate

Governor Street, Canal to Delaware Water Main Replacement
Report #: 30

CONSTRUCTION COSTS

ITEM ID	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
STANDARD PAY ITEMS					
1093	16" DUCTILE IRON PIPE	4,540	LF	\$121.00	\$549,340.00
1143	20" STEEL CASING PIPE	440	LF	\$182.00	\$80,080.00
1099	16" SOLID SLEEVE	2	EA	\$500.00	\$1,000.00
1030	16" MJ BUTTERFLY VALVE	4	EA	\$4,171.00	\$16,684.00
1017	16" MJ 45° BEND	48	EA	\$1,409.00	\$67,632.00
1119	FIRE HYDRANT ASSEMBLY WITH GATE VALVE	10	EA	\$5,814.00	\$58,140.00
1132	3/4"-1" WATER SERVICE RELOCATION, OPEN CUT	6	EA	\$1,682.00	\$10,092.00
7004	16" Tapping Sleeve & 16" Tapping Valve	1	LS	\$9,171.00	\$9,171.00
6028	Proposed 16" to Existing 12" Connection	1	LS	\$11,434.00	\$11,434.00
6012	Proposed 16" to Existing 8" Connection	20	LS	\$8,448.00	\$168,960.00
7013	24" Tapping Sleeve & 16" Tapping Valve	1	LS	\$14,171.00	\$14,171.00
7008	20" Tapping Sleeve & 16" Tapping Valve	2	LS	\$11,671.00	\$23,342.00
5006	ABANDON AND GROUT FILL EXISTING MAIN	4,730	LF	\$10.00	\$47,300.00
5007	COMPACTED AGGREGATE, NO. 53S	4,540	LF	\$9.00	\$40,860.00
5021	HOT MIX ASPHALT BASE	4,540	LF	\$28.00	\$127,120.00
5023	HOT MIX ASPHALT SURFACE	4,540	LF	\$12.00	\$54,480.00
NON-STANDARD PAY ITEMS					
--	Environmental Remediation Contingency	1	LS	5.0%	\$64,000.00
--					
--					
STANDARD LUMP SUM PAY ITEMS					
DESCRIPTION		QUANTITY	UNIT	%	TOTAL PRICE
Mobilization & Demobilization (4% - 5%)		1	LS	5.0%	\$67,200.00
Construction Engineering (2% - 3%)		1	LS	3.0%	\$40,400.00
Clearing & Grubbing (0.5% - 1.5%)		1	LS	1.0%	\$13,500.00
Erosion Control Devices (1% - 2%)		1	LS	2.0%	\$26,900.00
Maintenance of Traffic (3% - 4%)		1	LS	4.0%	\$53,800.00
Restoration, Grading, and Seeding (2% - 3%)		1	LS	3.0%	\$40,400.00

CONSTRUCTION COST SUBTOTAL = \$1,586,006.00

CONTINGENCY (30%) = \$475,900.00

TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = **\$2,062,000.00**

NON-CONSTRUCTION COSTS

DESCRIPTION	QUANTITY	UNIT	%	TOTAL PRICE
Engineering Program Management Fees (estimated)	1	LS	3.0%	\$61,900.00
Engineering Design Fees (estimated)	1	LS	10.0%	\$206,200.00
Engineering Construction Engineering Fees (estimated)	1	LS	9.6%	\$198,000.00

NON-CONSTRUCTION COST SUBTOTAL = \$467,000.00

TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = **\$2,529,000.00**

REITZ HILL
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.

REITZ HILL NEIGHBORHOOD WATER MAIN REPLACEMENT SCOPING REPORT

1. Project Summary

The proposed Reitz Hill Neighborhood Water Main Replacement Project includes the replacement of approximately 12,580 feet of water main. The project is expected to include approximately fifteen (15) fire hydrants, twenty-six (26) gate valves, three (3) automatic flushing device, and 259 service connections. Approximately 12,820 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 12,580 feet of water main is proposed.

1.1. Project Limits

The project scope includes replacement of existing water mains along Forest Avenue between Dreier Boulevard and S Lemcke Avenue, Hillcrest Terrace between S Barker Avenue and Dreier Boulevard, Hillcrest Terrace between Rick Davis Way and S Lemcke Avenue, Edgewood Drive between S Barker Avenue and Sonntag Avenue, Edgewood Drive between Rick Davis Way and S Lemcke Avenue, Sonntag Avenue between Marion Avenue and Edgewood Drive, Marion Avenue between S Barker Avenue and Dreier Boulevard, Hartmetz Avenue between S Barker Avenue and Dreier Avenue, Austin Avenue between S Barker Avenue and Dreier Avenue, S Barker Avenue between Pennsylvania Street and Claremont Avenue, Short Marion Avenue, Dreier Boulevard between Forest Avenue and Claremont Avenue, and Rick Davis Way between Hillcrest Terrace and Edgewood Drive. The proposed project and potential alignment for proposed water mains are shown in **Figure 1**. A pressure zone boundary change was also considered as part of the project and is also 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

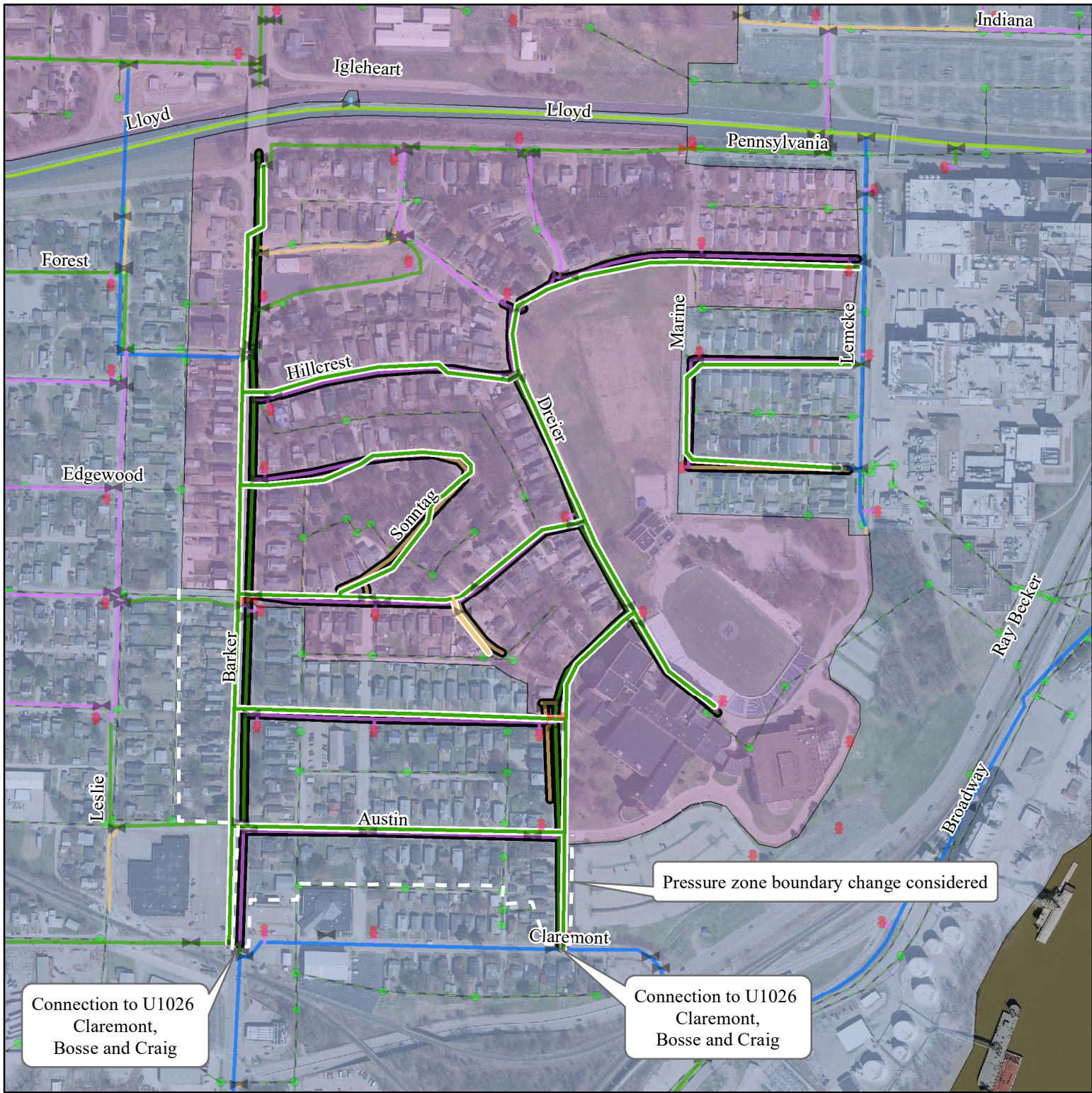
The existing water mains within the proposed project limits have replacement prioritization scores ranging from 140 to 305. The average score weighted by length for the existing water mains is 213.

This project had a high replacement rating due to a high likelihood of failure criteria score from this project's high historical rate of failure, short service life remaining, and high operating pressure. This project also had a high consequence of failure score due to being located along S Barker Avenue, 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 \$5,125,000. This includes \$4,180,000 construction costs and \$945,000 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. 31
Reitz Hill Neighborhood






Legend













Proposed Project

-  Trenchless Installation
-  Main to be Abandoned
-  Proposed Main


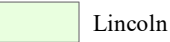


Water Infrastructure

-  Hydrants
-  System Isolation
-  System Separation

Valves

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

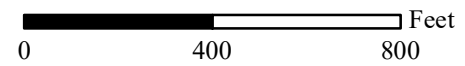
Pressure Zones

-  Central
-  Lincoln
-  Killian
-  Northern

Sanitary Infrastructure

-  Manholes
-  Sewer

Print Date: December 2020



Connection to U1026
 Claremont,
 Bosse and Craig

Connection to U1026
 Claremont,
 Bosse and Craig

Pressure zone boundary change considered

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) alternatives were evaluated for replacement. Alternative 1 includes replacement with all 8-inch diameter water main in the project limits and the abandonment of a parallel main west of the intersection of Harmetz Avenue and Drier Boulevard. Alternative 2 included replacement with all 8-inch diameter water main in the project limits, the abandonment of a parallel main west of the intersection of Harmetz Avenue and Drier Boulevard, and moving the pressure boundary which affects 92 customers.

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

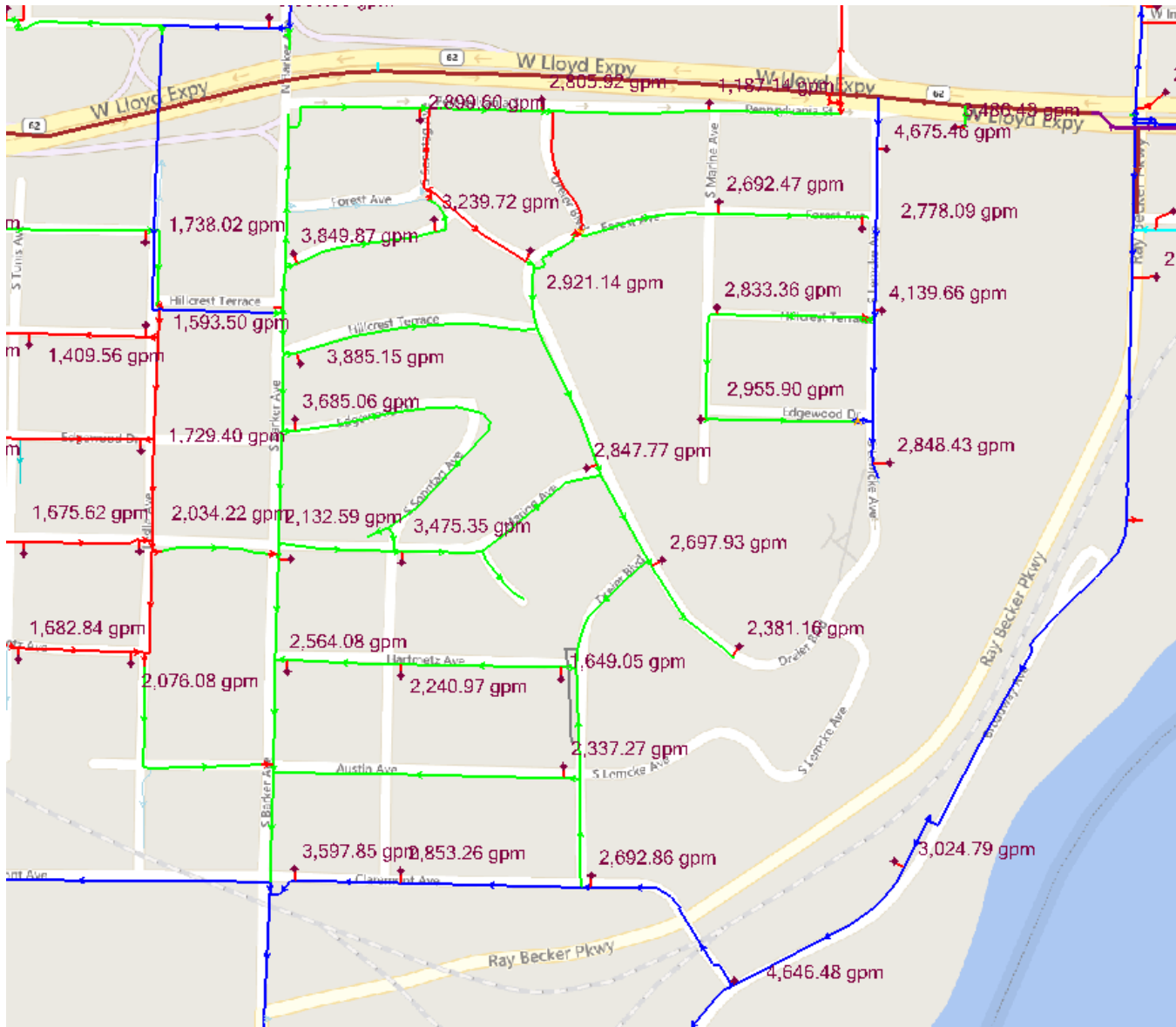


Figure 3. Alternative 1 Available Fire Flow



Figure 4. Alternative 2 Available Fire Flow

2.1. Conclusion

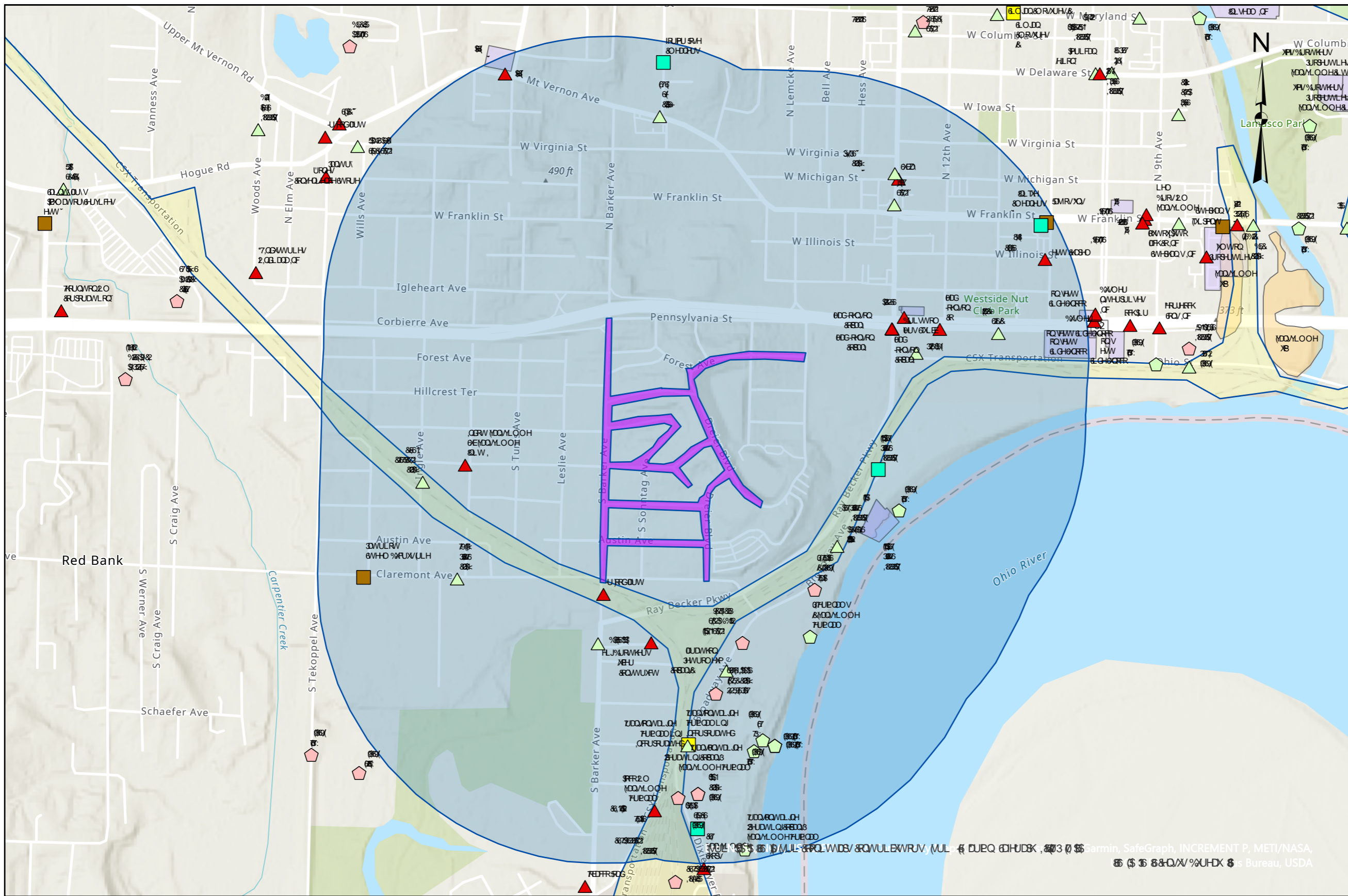
The project area is primarily residential, so the required fire flow is expected to be approximately 1,500 gallons per minute. All alternatives provide adequate pressure and available fire flow, therefore Alternative 2 was selected to adjust pressure zone boundaries.

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 twenty-three (23) potential contaminated sites and twenty-two (22) known contaminated sites as shown in Figure 5.

3.1. Site Specific Concerns

The preliminary environmental assessment identified no known contaminated sites 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
- JACOBVILLE SUPERFUND SITE BOUNDARY
- WASTE COAL COMBUSTION IMPOUNDMENT

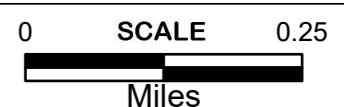
POTENTIAL CONTAMINATED SITES

- 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



TITLE: Reitz Hill Neighborhood Hazardous Materials Concerns

LOCATION: Reitz Hill Neighborhood, Evansville, IN

X: 87.6075847
Y: 38.9741223

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. 120-01080

DATE: 11/6/2020



Scoping Report

Project Capital Cost Estimate

Reitz Hill Neighborhood Water Main Replacement

Report #: 31

CONSTRUCTION COSTS

ITEM ID	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
STANDARD PAY ITEMS					
1083	8" PVC C900 PIPE	12,380	LF	\$86.00	\$1,064,680.00
1081	4" PVC C900 PIPE	200	LF	\$67.00	\$13,400.00
1026	8" MJ GATE VALVE	25	EA	\$1,645.00	\$41,125.00
1024	4" MJ GATE VALVE	1	EA	\$1,061.00	\$1,061.00
1013	8" MJ 45° BEND	67	EA	\$441.00	\$29,547.00
1224	4" MJ 45° BEND	1	EA	\$302.00	\$302.00
1036	8" MJ TEE	11	EA	\$679.00	\$7,469.00
1034	8"x4" MJ TEE	1	EA	\$497.00	\$497.00
1119	FIRE HYDRANT ASSEMBLY WITH GATE VALVE	16	EA	\$5,814.00	\$93,024.00
1126	AUTOMATIC FLUSH DEVICE WITH GATE VALVE (9400)	3	EA	\$5,212.00	\$15,636.00
1269	PRESSURE REDUCING VALVE	92	EA	\$2,500.00	\$230,000.00
1132	3/4"-1" WATER SERVICE RELOCATION, OPEN CUT	259	EA	\$1,682.00	\$435,638.00
6004	Proposed 8" to Existing 8" Connection	3	LS	\$7,122.00	\$21,366.00
6025	Proposed 8" to Existing 12" Connection	2	LS	\$10,115.00	\$20,230.00
6002	Proposed 8" to Existing 4" Connection	1	LS	\$5,964.00	\$5,964.00
5006	ABANDON AND GROUT FILL EXISTING MAIN	12,820	LF	\$10.00	\$128,200.00
5007	COMPACTED AGGREGATE, NO. 53S	12,580	LF	\$9.00	\$113,220.00
5021	HOT MIX ASPHALT BASE	12,580	LF	\$28.00	\$352,240.00
5023	HOT MIX ASPHALT SURFACE	12,580	LF	\$12.00	\$150,960.00
NON-STANDARD PAY ITEMS					
--					
--					
STANDARD LUMP SUM PAY ITEMS					
DESCRIPTION	QUANTITY	UNIT	%	TOTAL PRICE	
Mobilization & Demobilization (4% - 5%)	1	LS	5.0%	\$136,300.00	
Construction Engineering (2% - 3%)	1	LS	3.0%	\$81,800.00	
Clearing & Grubbing (0.5% - 1.5%)	1	LS	1.0%	\$27,300.00	
Erosion Control Devices (1% - 2%)	1	LS	2.0%	\$54,500.00	
Maintenance of Traffic (3% - 4%)	1	LS	4.0%	\$109,000.00	
Restoration, Grading, and Seeding (2% - 3%)	1	LS	3.0%	\$81,800.00	

CONSTRUCTION COST SUBTOTAL = \$3,215,259.00

CONTINGENCY (30%) = \$964,600.00

TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = **\$4,180,000.00**

NON-CONSTRUCTION COSTS

DESCRIPTION	QUANTITY	UNIT	%	TOTAL PRICE
Engineering Program Management Fees (estimated)	1	LS	3.0%	\$125,400.00
Engineering Design Fees (estimated)	1	LS	10.0%	\$418,000.00
Engineering Construction Engineering Fees (estimated)	1	LS	9.6%	\$401,300.00

NON-CONSTRUCTION COST SUBTOTAL = \$945,000.00

TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = **\$5,125,000.00**

HOWELL
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.

HOWELL NEIGHBORHOOD WATER MAIN REPLACEMENT SCOPING REPORT

1. Project Summary

The proposed Howell Neighborhood Water Main Replacement Project includes the replacement of approximately 17,040 feet of water main. The project is expected to include approximately thirty (30) fire hydrants, twenty-six (26) gate valves, one (1) automatic flushing device, and 431 service connections. Approximately 17,040 feet of existing water main will be abandoned and filled with grout.

1.1. Project Limits

The project scope includes replacement of existing water mains along Irvington Avenue, Hollywood Avenue, Glendale Avenue, Stinson Avenue and Delmar Avenue north of James Avenue, Ewing Avenue south of Emerson Street and north of Dearborn Street, Cumberland Avenue and S Barker Avenue south of Broadway Avenue, James Avenue from Irvington Avenue to Hollywood Avenue, Emerson Street from Irvington Ave to Hollywood Ave and from Stinson Avenue to S Barker Avenue, Dearborn Street from Stinson Avenue to Delmar Avenue, Arlington Avenue and Tieman 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 140 to 295. The average score weighted by length for the existing water mains is 215.

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 also contributed to this project's high score.

1.3. Project Cost


The total capital cost estimate for the project is \$6,550,000. This includes \$5,342,000 costs and \$1,208,000 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. 32
Howell Neighborhood



Legend

Proposed Project

 Trenchless Installation


 Main to be Abandoned


 Proposed Main

Water Infrastructure

 Hydrants

Valves

 System Isolation


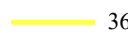
 System Separation

Mains

 <6"  20"

 6"  24"

 8"  30"

 10"  36"

 12"  48"

 16"  Private

Pressure Zones

 Central  Lincoln

 Killian  Northern

Sanitary Infrastructure

 Manholes  Sewer

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.

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

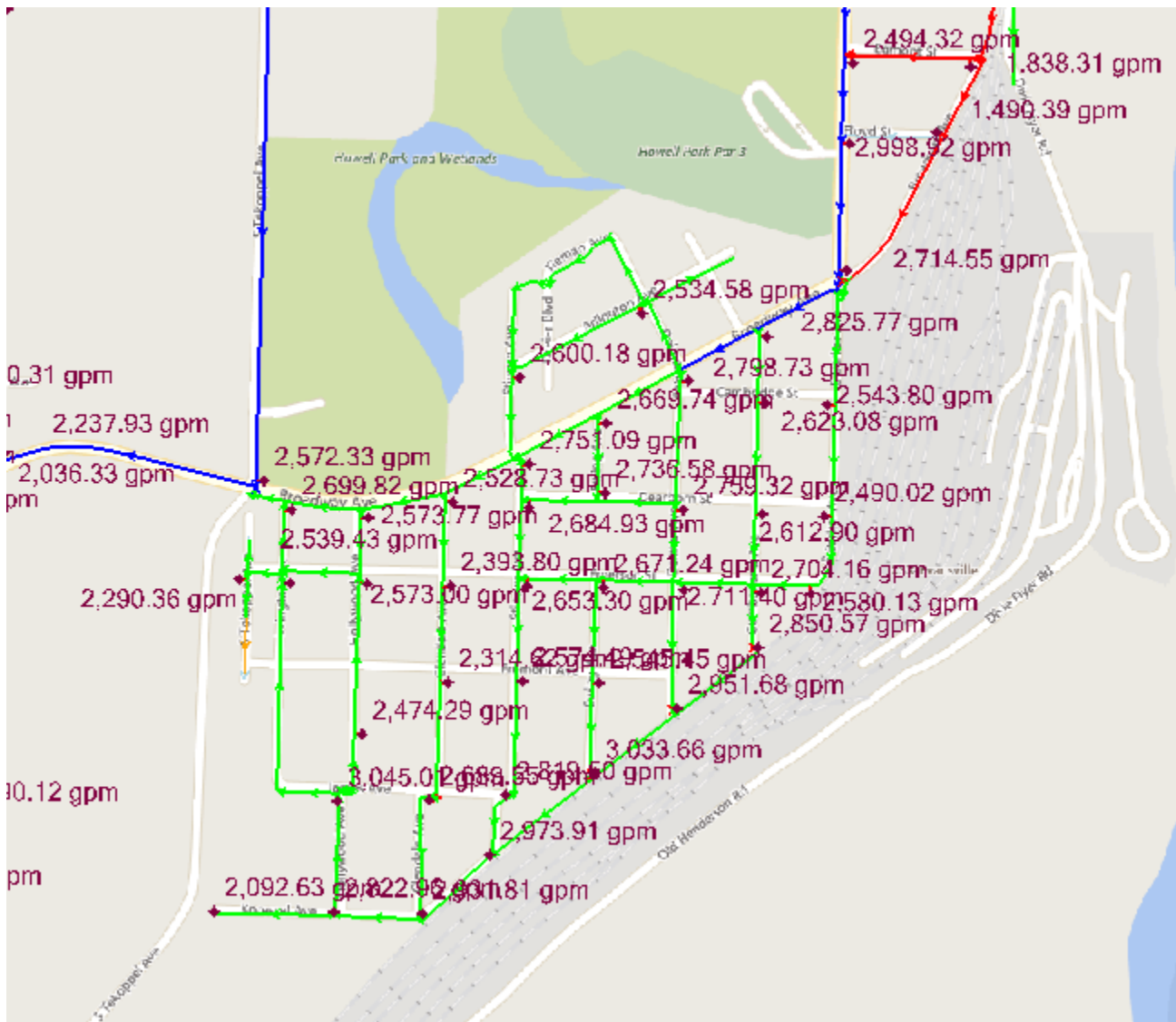


Figure 3. Alternative 1 Available Fire Flow

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 seventeen (17) potential contaminated sites and six (6) known contaminated sites as shown in Figure 4.

3.1. Site Specific Concerns











The preliminary environmental assessment identified no known contaminated sites with close proximity to the project.

LEGEND



KNOWN CONTAMINATED SITES

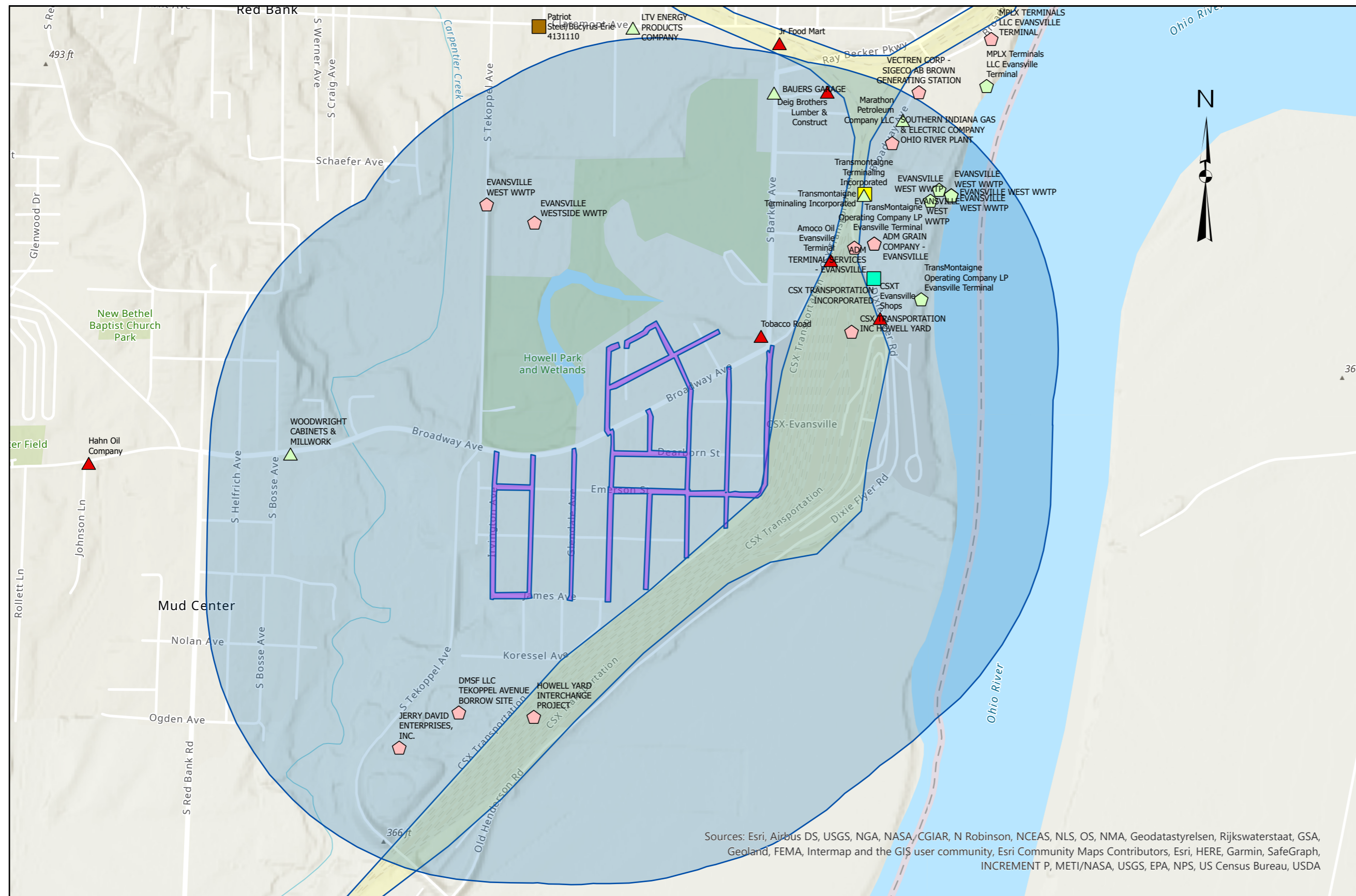
-  BROWNFIELD SITE
-  CLEANUP SITE
-  CONFINED FEEDING OPERATION
-  SUPERFUND SITE
-  LEAKING UNDERGROUND STORAGE TANK SITE
-  VOLUNTARY REMEDIATION PROGRAM SITE
-  INSTITUTIONAL CONTROL SITE
-  JACOBVILLE SUPERFUND SITE BOUNDARY
-  WASTE COAL COMBUSTION IMPOUNDMENT

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



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

Figure 4



TITLE: Howell Neighborhood Hazardous Materials Concerns

LOCATION: Howell Neighborhood, Evansville, IN

X: 87.6139474
Y: 37.9605030

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.120-0108P

DATE: 11/6/2020



Scoping Report

Project Capital Cost Estimate

Howell Neighborhood Water Main Replacement

Report #: 32

CONSTRUCTION COSTS

ITEM ID	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
STANDARD PAY ITEMS					
1083	8" PVC C900 PIPE	16,840	LF	\$86.00	\$1,448,240.00
1081	4" PVC C900 PIPE	200	LF	\$67.00	\$13,400.00
1026	8" MJ GATE VALVE	25	EA	\$1,645.00	\$41,125.00
1024	4" MJ GATE VALVE	1	EA	\$1,061.00	\$1,061.00
1013	8" MJ 45° BEND	80	EA	\$441.00	\$35,280.00
1224	4" MJ 45° BEND	4	EA	\$302.00	\$1,208.00
1036	8" MJ TEE	14	EA	\$679.00	\$9,506.00
1078	8"X4" MJ REDUCER	1	EA	\$384.00	\$384.00
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
1132	3/4"-1" WATER SERVICE RELOCATION, OPEN CUT	431	EA	\$1,682.00	\$724,942.00
6004	Proposed 8" to Existing 8" Connection	3	LS	\$7,122.00	\$21,366.00
5006	ABANDON AND GROUT FILL EXISTING MAIN	17,040	LF	\$10.00	\$170,400.00
5007	COMPACTED AGGREGATE, NO. 53S	17,040	LF	\$9.00	\$153,360.00
5021	HOT MIX ASPHALT BASE	17,040	LF	\$28.00	\$477,120.00
5023	HOT MIX ASPHALT SURFACE	17,040	LF	\$12.00	\$204,480.00
NON-STANDARD PAY ITEMS					
--					
--					
--					
STANDARD LUMP SUM PAY ITEMS					
DESCRIPTION	QUANTITY	UNIT	%	TOTAL PRICE	
Mobilization & Demobilization (4% - 5%)	1	LS	5.0%	\$174,100.00	
Construction Engineering (2% - 3%)	1	LS	3.0%	\$104,500.00	
Clearing & Grubbing (0.5% - 1.5%)	1	LS	1.0%	\$34,900.00	
Erosion Control Devices (1% - 2%)	1	LS	2.0%	\$69,700.00	
Maintenance of Traffic (3% - 4%)	1	LS	4.0%	\$139,300.00	
Restoration, Grading, and Seeding (2% - 3%)	1	LS	3.0%	\$104,500.00	

CONSTRUCTION COST SUBTOTAL = \$4,108,504.00

CONTINGENCY (30%) = \$1,232,600.00

TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = \$5,342,000.00

NON-CONSTRUCTION COSTS

DESCRIPTION	QUANTITY	UNIT	%	TOTAL PRICE
Engineering Program Management Fees (estimated)	1	LS	3.0%	\$160,300.00
Engineering Design Fees (estimated)	1	LS	10.0%	\$534,200.00
Engineering Construction Engineering Fees (estimated)	1	LS	9.6%	\$512,900.00

NON-CONSTRUCTION COST SUBTOTAL = \$1,208,000.00

TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = \$6,550,000.00

**DOWNTOWN AREA ON
1ST AND 2ND STREETS
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.

DOWNTOWN AREA ON 1ST AND 2ND STREETS WATER MAIN REPLACEMENT SCOPING REPORT

1. Project Summary

The proposed Downtown Area on 1st and 2nd Streets Water Main Replacement Project includes the replacement of approximately 12,790 feet of water main. The project is expected to include approximately eighteen (18) fire hydrants, twenty-three (23) gate valves, and 221 service connections. Approximately 12,300 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 1,000 feet of proposed water main was added to the project extents along Taylor 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 SE 1st Street from SE Riverside Drive to Chandler Avenue, Parrett Street from SE Riverside Drive to SE 2nd Street, SE 2nd Street south of Adams Ave, Venice Street, Howard Street, Culver Drive south of Madison Ave, Judson Street, Jackson Street from SE 1st Street to Parrett Street and from Culver Street to Judson Street, Monroe Avenue from Parrett Street to SE 2nd Street, Taylor Avenue from SE Riverside Drive to Howard Street and from Judson Street to S Governor 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 130 to 325. The average score weighted by length for the existing water mains is 229.

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 \$5,569,000. This includes \$4,542,000 construction costs and \$1,027,000 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. 33
Downtown Area on 1st and 2nd Streets



Legend

Proposed Project

- Trenchless Installation
- Main to be Abandoned
- Proposed Main

Water Infrastructure

- Hydrants

Valves

- System Isolation
- System Separation

Mains

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

Pressure Zones

- Central Lincoln
- Killian Northern

Sanitary Infrastructure

- Manholes Sewer

Print Date: December 2020

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. Two (2) alternatives were evaluated for replacement. Alternative 1 includes replacement with all 8-inch diameter water main in the project limits. Alternative 2 included replacement with 12-inch diameter water main along 2nd Street and down Culver Avenue to Riverside Avenue and 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**. The available fire flow in the project limits for Alternative 2 are shown in **Figure 4**.

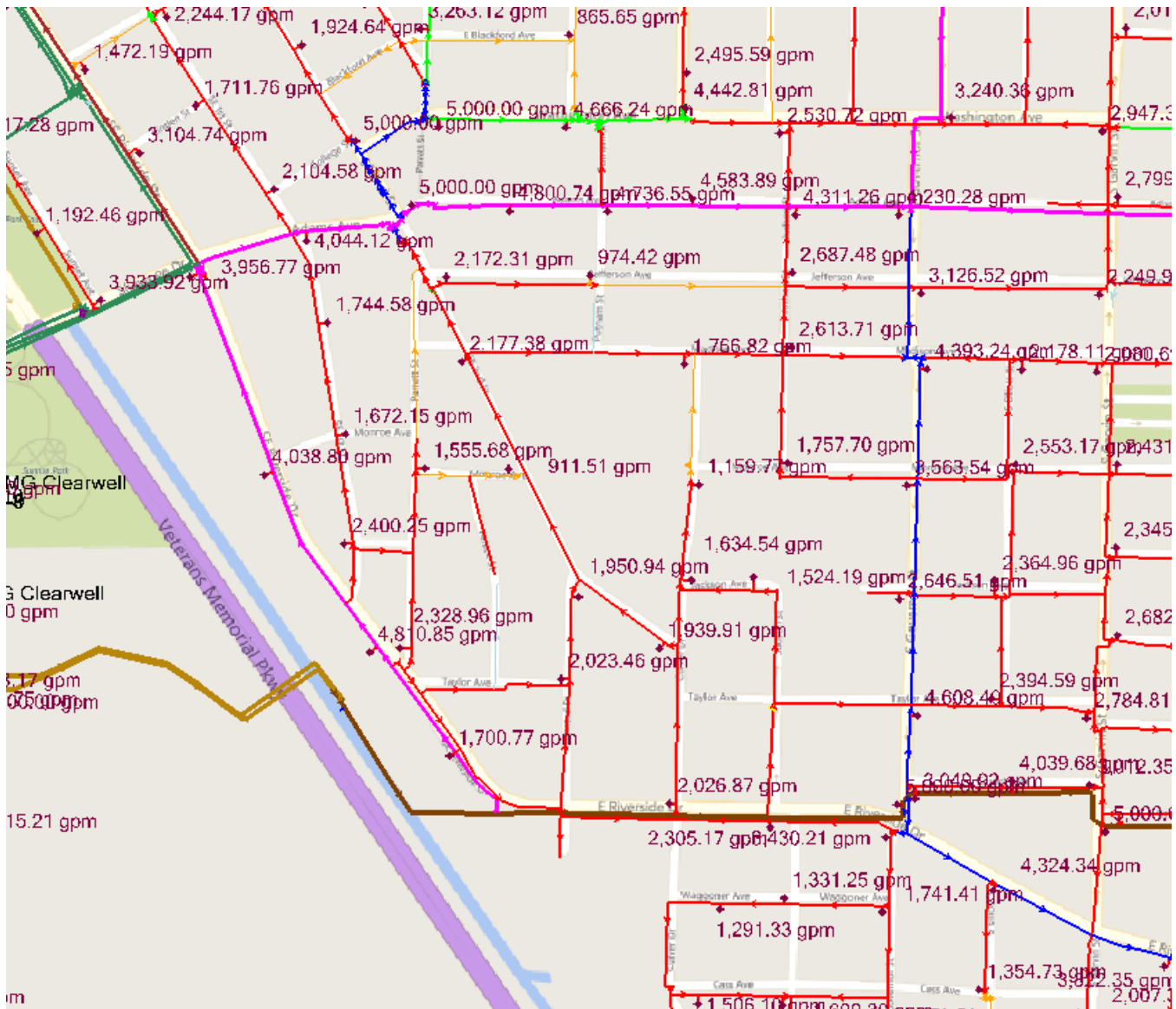


Figure 2. Existing Available Fire Flow

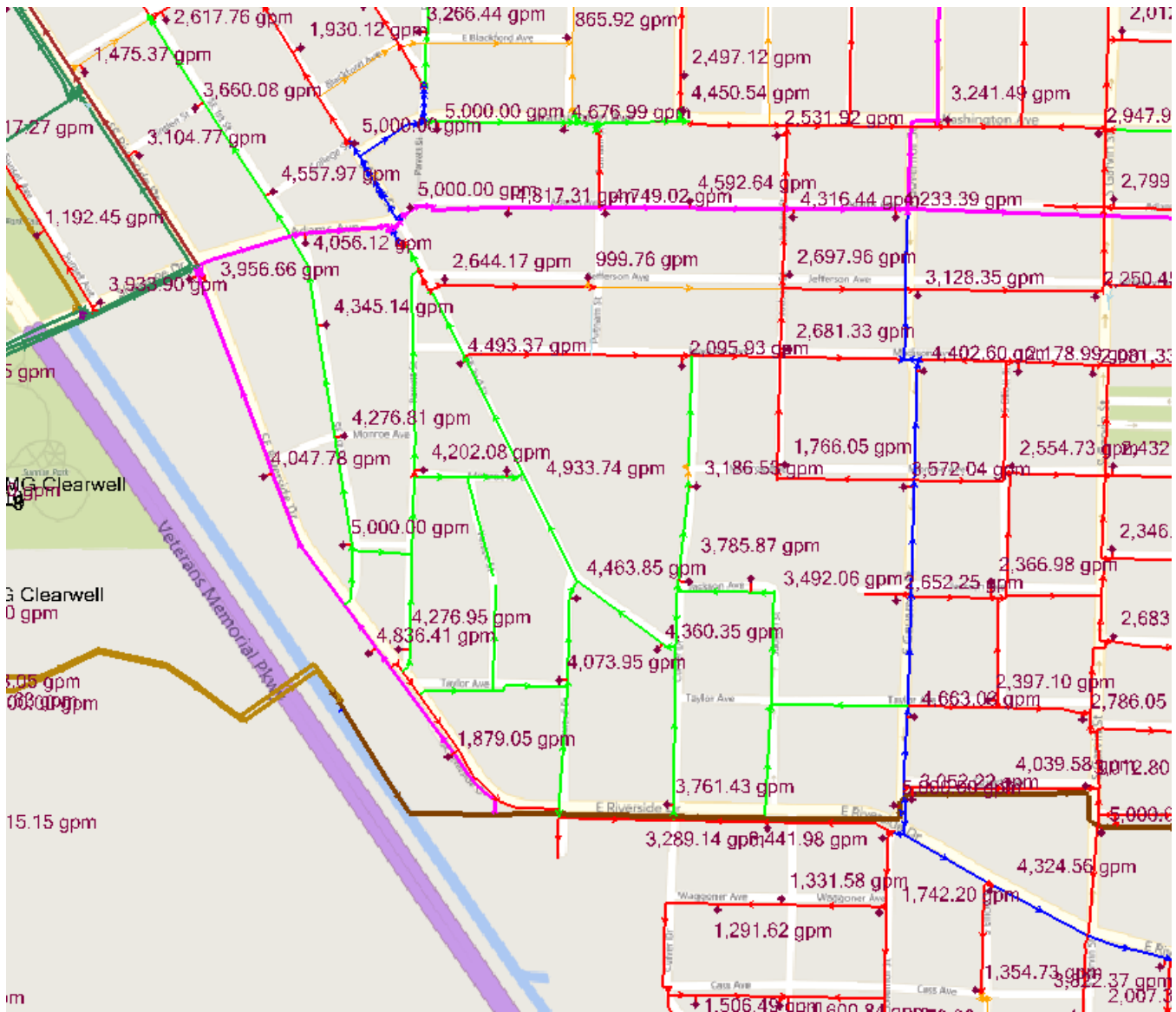


Figure 3. Alternative 1 Available Fire Flow

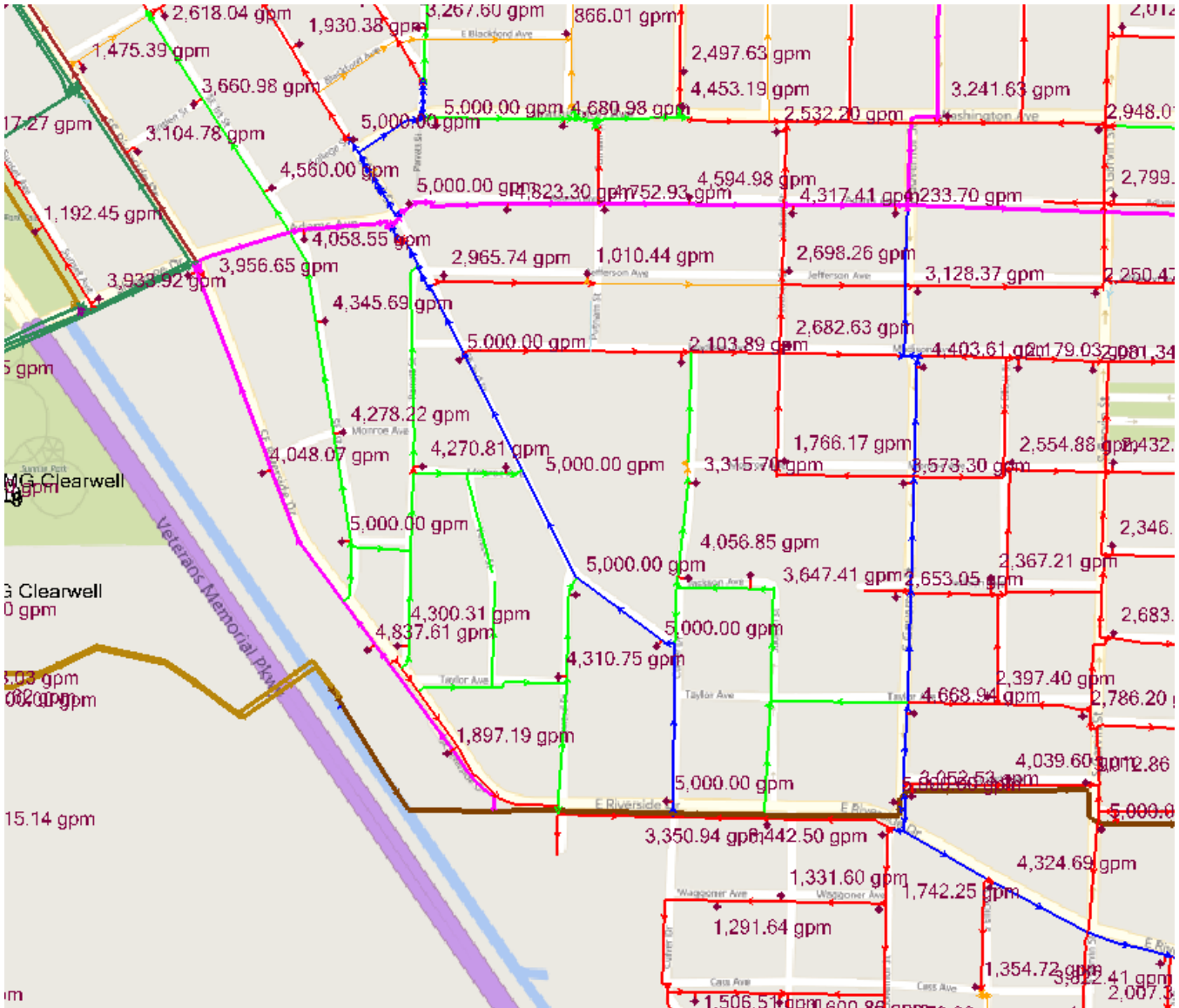


Figure 4. Alternative 2 Available Fire Flow

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 adequate pressure and available fire flow, however Alternative 2 was selected to connect to and continue 12-inch water main on SE 2nd Street from a recent water main replacement project.

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 seventeen (17) potential contaminated sites and fifteen (15) known contaminated sites as shown in Figure 5.

3.1. Site Specific Concerns

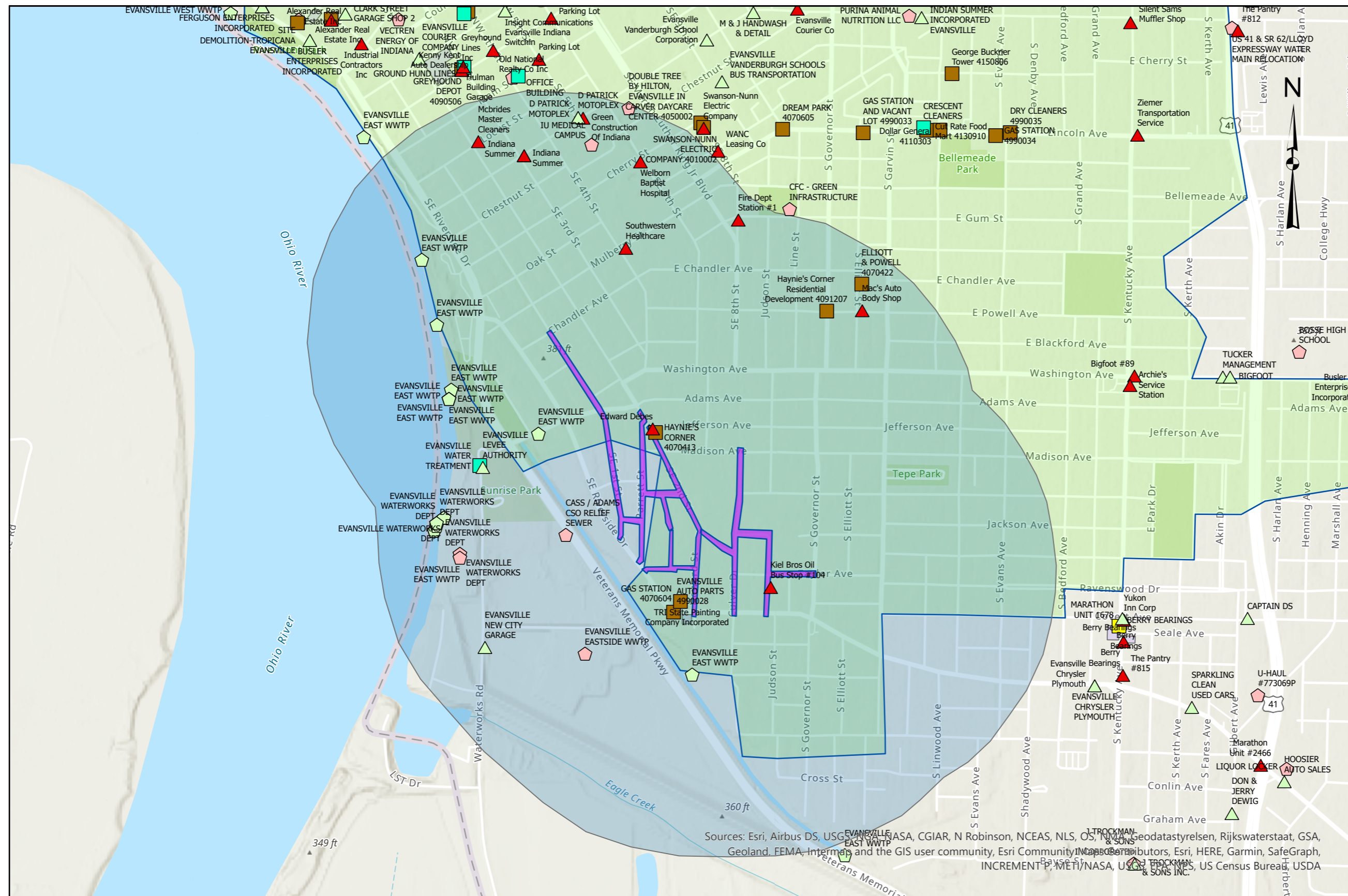
The preliminary environmental assessment identified three (3) known contaminated sites with close proximity to the project. These three (3) known contaminated sites include two (2) leaking underground storage tank sites and two (2) brownfield sites.

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



Sources: Esri, Airbus DS, USGS, NIMA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NIMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Contributors, Esri, HERE, Garmin, SafeGraph, INCREMENT P, MET/NASA, USGS, TROCKMAN & SONS INC., US Census Bureau, USDA

Figure 5



TITLE: Downtown Area Hazardous Materials Concerns

LOCATION: Downtown Area,
1st and 2nd Street,
Evansville, IN
X: 87.5653184
Y: 37.9592414

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.120-0108V

DATE: 11/6/2020



Scoping Report

Project Capital Cost Estimate

Downtown Area on 1st and 2nd Streets Water Main Replacement

Report #: 33

CONSTRUCTION COSTS

ITEM ID	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
STANDARD PAY ITEMS					
1083	8" PVC C900 PIPE	10,230	LF	\$86.00	\$879,780.00
1085	12" PVC C900 PIPE	2,560	LF	\$102.00	\$261,120.00
1026	8" MJ GATE VALVE	19	EA	\$1,645.00	\$31,255.00
1028	12" MJ GATE VALVE	4	EA	\$2,818.00	\$11,272.00
1013	8" MJ 45° BEND	54	EA	\$441.00	\$23,814.00
1015	12" MJ 45° BEND	12	EA	\$765.00	\$9,180.00
1036	8" MJ TEE	9	EA	\$679.00	\$6,111.00
1041	12"X8" MJ TEE	5	EA	\$866.00	\$4,330.00
1119	FIRE HYDRANT ASSEMBLY WITH GATE VALVE	18	EA	\$5,814.00	\$104,652.00
1132	3/4"-1" WATER SERVICE RELOCATION, OPEN CUT	221	EA	\$1,682.00	\$371,722.00
6003	Proposed 8" to Existing 6" Connection	2	LS	\$6,308.00	\$12,616.00
7002	16" Tapping Sleeve & 8" Tapping Valve	5	LS	\$6,645.00	\$33,225.00
6026	Proposed 12" to Existing 12" Connection	1	LS	\$10,368.00	\$10,368.00
6007	Proposed 12" to Existing 6" Connection	4	LS	\$6,723.00	\$26,892.00
6025	Proposed 8" to Existing 12" Connection	1	LS	\$10,115.00	\$10,115.00
5006	ABANDON AND GROUT FILL EXISTING MAIN	12,300	LF	\$10.00	\$123,000.00
5007	COMPACTED AGGREGATE, NO. 53S	12,790	LF	\$9.00	\$115,110.00
5021	HOT MIX ASPHALT BASE	12,790	LF	\$28.00	\$358,120.00
5023	HOT MIX ASPHALT SURFACE	12,790	LF	\$12.00	\$153,480.00
NON-STANDARD PAY ITEMS					
--	Brick Street Restoration	1,820	LF	\$150.00	\$273,000.00
--	Environmental Remediation Contingency	1	LS	5.0%	\$141,000.00
STANDARD LUMP SUM PAY ITEMS					
DESCRIPTION	QUANTITY	UNIT	%	TOTAL PRICE	
Mobilization & Demobilization (4% - 5%)	1	LS	5.0%	\$148,100.00	
Construction Engineering (2% - 3%)	1	LS	3.0%	\$88,900.00	
Clearing & Grubbing (0.5% - 1.5%)	1	LS	1.0%	\$29,700.00	
Erosion Control Devices (1% - 2%)	1	LS	2.0%	\$59,300.00	
Maintenance of Traffic (3% - 4%)	1	LS	4.0%	\$118,500.00	
Restoration, Grading, and Seeding (2% - 3%)	1	LS	3.0%	\$88,900.00	

CONSTRUCTION COST SUBTOTAL = \$3,493,562.00

CONTINGENCY (30%) = \$1,048,100.00

TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = **\$4,542,000.00**

NON-CONSTRUCTION COSTS

DESCRIPTION	QUANTITY	UNIT	%	TOTAL PRICE
Engineering Program Management Fees (estimated)	1	LS	3.0%	\$136,300.00
Engineering Design Fees (estimated)	1	LS	10.0%	\$454,200.00
Engineering Construction Engineering Fees (estimated)	1	LS	9.6%	\$436,100.00

NON-CONSTRUCTION COST SUBTOTAL = \$1,027,000.00

TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = **\$5,569,000.00**

**SOUTH CEDAR HALL
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.

SOUTH CEDAR HALL NEIGHBORHOOD WATER MAIN REPLACEMENT SCOPING REPORT

1. Project Summary

The proposed South Cedar Hall Neighborhood Water Main Replacement Project includes the replacement of approximately 6,190 feet of water main. The project is expected to include approximately eight (8) fire hydrants, twenty-one (21) gate valves, and thirty-seven (37) service connections. Approximately 6,260 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 6,190 feet of water main is proposed.

1.1. Project Limits

The project scope includes replacement of existing water mains along Delaware Street between 6th Avenue and Fulton Avenue, Iowa Street between 6th Avenue and Fulton Avenue, Virginia Street between 6th Avenue and 5th Avenue, Michigan Street between 6th Avenue and 5th Avenue, 6th Avenue between Columbia Street and Franklin Street, 5th Avenue between Columbia Street and Virginia Street, and 5th Avenue between Michigan Street and Franklin 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

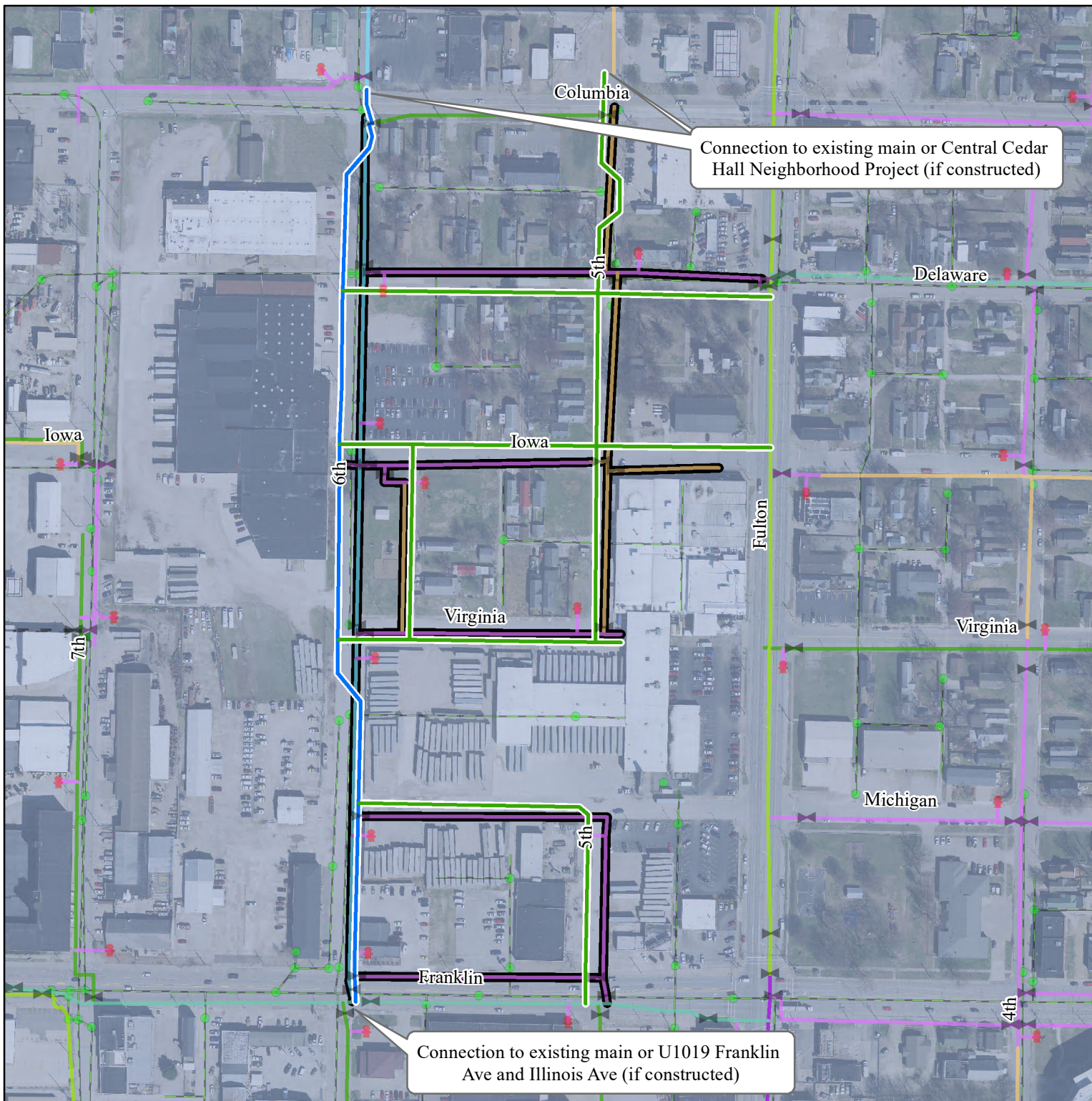
The existing water mains within the proposed project limits have replacement prioritization scores ranging from 170 to 305. The average score weighted by length for the existing water mains is 220.

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 \$2,324,000. This includes \$1,895,000 construction costs and \$429,000 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. 36
South Cedar Hall
Neighborhood



Legend

Proposed Project

 Trenchless Installation


 Main to be Abandoned


 Proposed Main

Water Infrastructure

 Hydrants

Valves

 System Isolation



 System Separation

Mains

 <6"  20"

 6"  24"

 8"  30"

 10"  36"

 12"  48"

 16"  Private

Pressure Zones

 Central  Lincoln

 Killian  Northern

Sanitary Infrastructure

 Manholes  Sewer

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) alternatives were evaluated for replacement. Alternative 1 included replacement with 12-inch diameter water main along 6th Avenue and 8-inch diameter water main in the remainder of the project limits. Alternative 2 includes replacement with all 8-inch diameter water main in the project limits. In both alternatives dead-ends were connected to existing main on 5th Avenue, 6th Avenue, and Iowa 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**.

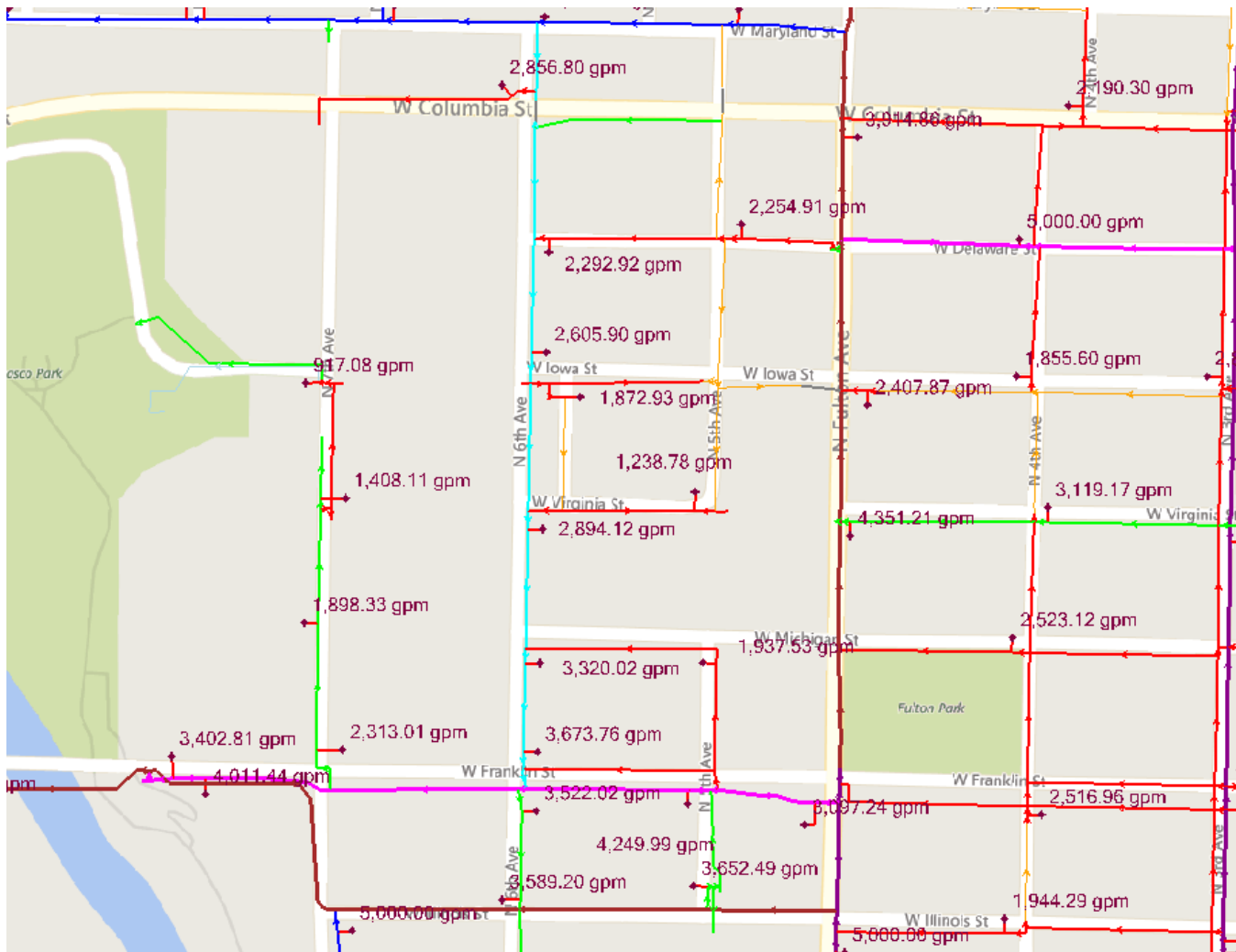


Figure 2. Existing Available Fire Flow

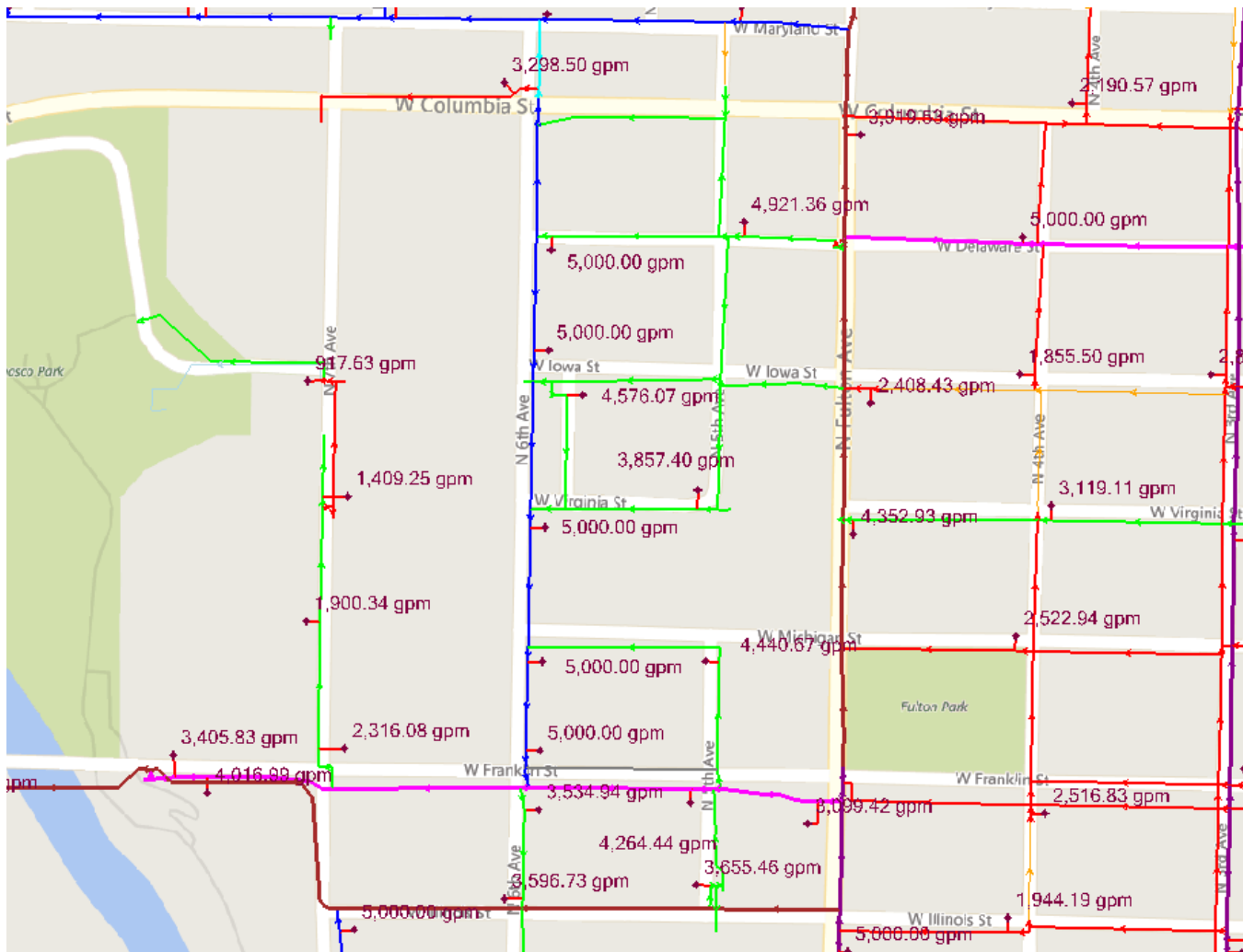


Figure 3. Alternative 1 Available Fire Flow

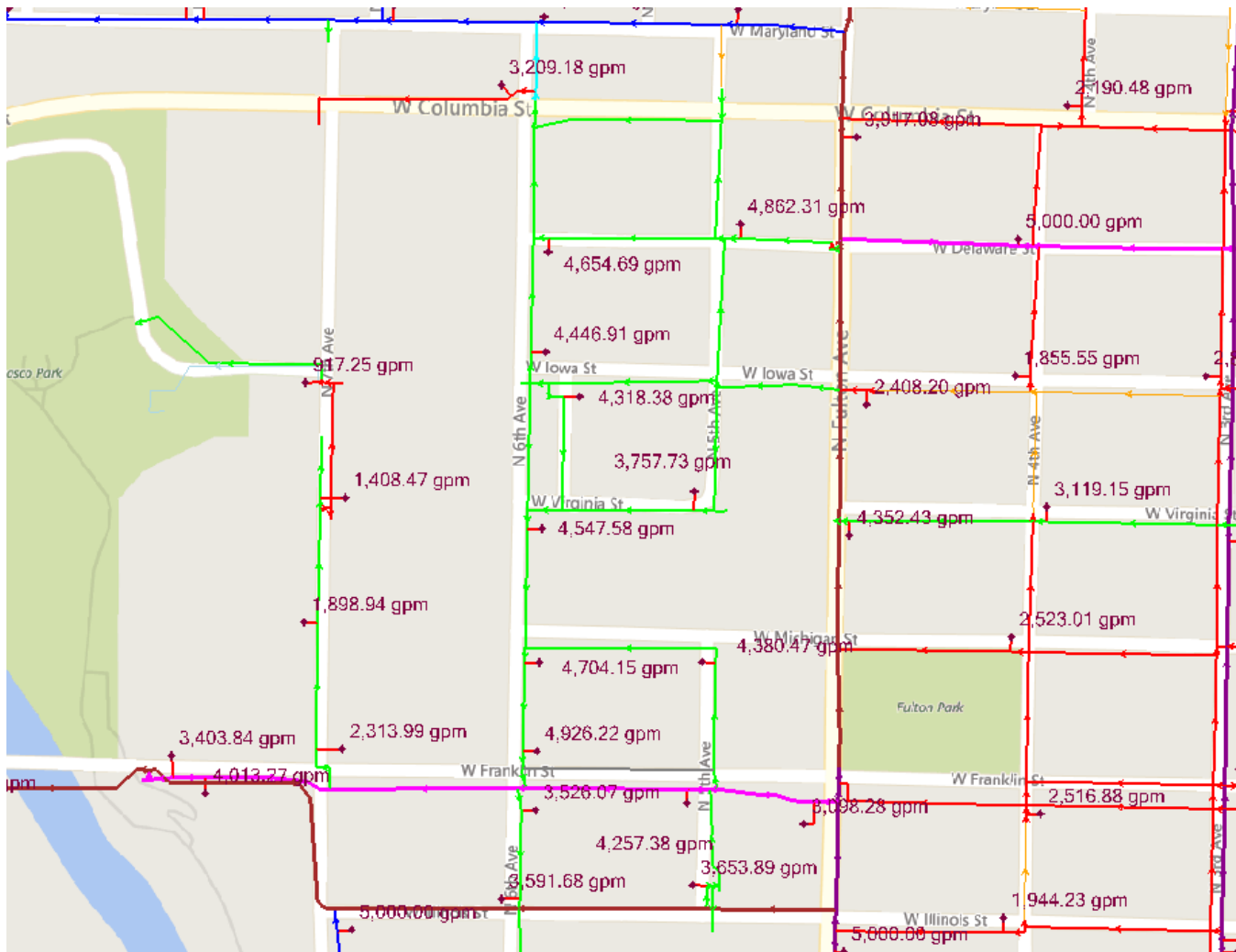


Figure 4. Alternative 2 Available Fire Flow

2.1. Conclusion

The project area is primarily commercial, so the required fire flow is expected to be approximately 2,000 gallons per minute. All alternatives provide adequate pressure and available fire flow, therefore Alternative 1 was selected due to potential future demands.

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-eight (38) potential contaminated sites and thirty-three (33) known contaminated sites as shown in Figure 5.

3.1. Site Specific Concerns











The preliminary environmental assessment identified one (1) known contaminated site with close proximity to the project. This one (1) known contaminated site includes one (1) leaking underground storage tank 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

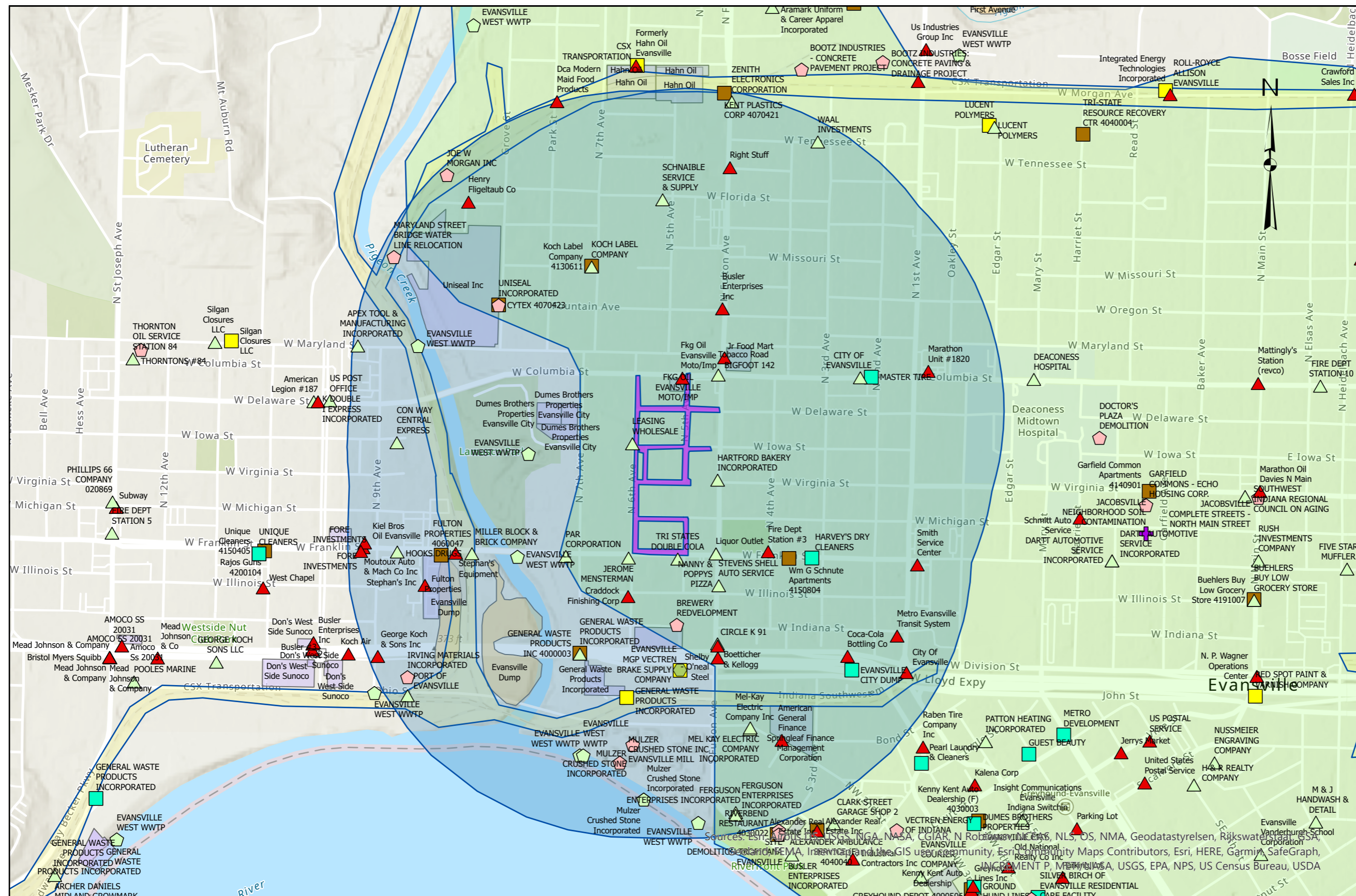
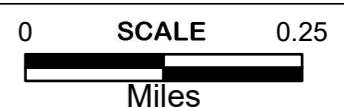


Figure 5



TITLE: South Cedar Hall Neighborhood Hazardous Materials Concerns

LOCATION: South Cedar Hall Neighborhood, Evansville, IN

X: 87.5833090
Y: 37.9730733

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.120-0108Q

DATE: 11/6/2020



Scoping Report

Project Capital Cost Estimate

South Cedar Hall Neighborhood Water Main Replacement

Report #: 36

CONSTRUCTION COSTS

ITEM ID	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
STANDARD PAY ITEMS					
1083	8" PVC C900 PIPE	4,430	LF	\$86.00	\$380,980.00
1085	12" PVC C900 PIPE	1,760	LF	\$102.00	\$179,520.00
1026	8" MJ GATE VALVE	17	EA	\$1,645.00	\$27,965.00
1028	12" MJ GATE VALVE	4	EA	\$2,818.00	\$11,272.00
1013	8" MJ 45° BEND	44	EA	\$441.00	\$19,404.00
1015	12" MJ 45° BEND	20	EA	\$765.00	\$15,300.00
1036	8" MJ TEE	7	EA	\$679.00	\$4,753.00
1041	12"X8" MJ TEE	4	EA	\$866.00	\$3,464.00
1119	FIRE HYDRANT ASSEMBLY WITH GATE VALVE	8	EA	\$5,814.00	\$46,512.00
1132	3/4"-1" WATER SERVICE RELOCATION, OPEN CUT	37	EA	\$1,682.00	\$62,234.00
7002	16" Tapping Sleeve & 8" Tapping Valve	1	LS	\$6,645.00	\$6,645.00
7006	20" Tapping Sleeve & 8" Tapping Valve	2	LS	\$9,145.00	\$18,290.00
6027	Proposed 12" to Existing 16" Connection	1	LS	\$16,024.00	\$16,024.00
6003	Proposed 8" to Existing 6" Connection	1	LS	\$6,308.00	\$6,308.00
6028	Proposed 16" to Existing 12" Connection	1	LS	\$11,434.00	\$11,434.00
5006	ABANDON AND GROUT FILL EXISTING MAIN	6,260	LF	\$10.00	\$62,600.00
5007	COMPACTED AGGREGATE, NO. 53S	6,190	LF	\$9.00	\$55,710.00
5021	HOT MIX ASPHALT BASE	6,190	LF	\$28.00	\$173,320.00
5023	HOT MIX ASPHALT SURFACE	6,190	LF	\$12.00	\$74,280.00
NON-STANDARD PAY ITEMS					
--	Environmental Remediation Contingency	1	LS	5.0%	\$58,900.00
--					
STANDARD LUMP SUM PAY ITEMS					
DESCRIPTION	QUANTITY	UNIT	%	TOTAL PRICE	
Mobilization & Demobilization (4% - 5%)	1	LS	5.0%	\$61,800.00	
Construction Engineering (2% - 3%)	1	LS	3.0%	\$37,100.00	
Clearing & Grubbing (0.5% - 1.5%)	1	LS	1.0%	\$12,400.00	
Erosion Control Devices (1% - 2%)	1	LS	2.0%	\$24,700.00	
Maintenance of Traffic (3% - 4%)	1	LS	4.0%	\$49,400.00	
Restoration, Grading, and Seeding (2% - 3%)	1	LS	3.0%	\$37,100.00	

CONSTRUCTION COST SUBTOTAL = \$1,457,415.00

CONTINGENCY (30%) = \$437,300.00

TOTAL ESTIMATED CONSTRUCTION COST, SCOPING REPORT = **\$1,895,000.00**

NON-CONSTRUCTION COSTS

DESCRIPTION	QUANTITY	UNIT	%	TOTAL PRICE
Engineering Program Management Fees (estimated)	1	LS	3.0%	\$56,900.00
Engineering Design Fees (estimated)	1	LS	10.0%	\$189,500.00
Engineering Construction Engineering Fees (estimated)	1	LS	9.6%	\$182,000.00

NON-CONSTRUCTION COST SUBTOTAL = \$429,000.00

TOTAL ESTIMATED CAPITAL COST, SCOPING REPORT = **\$2,324,000.00**

CENTRAL CEDAR HALL
NEIGHBORHOOD
WATER MAIN
REPLACEMENT
SCOPING REPORT

2022 WATER RATE CASE



December 2020
Last Revision January 2021

PREPARED FOR

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PREPARED BY

HNTB Corporation

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CENTRAL CEDAR HALL NEIGHBORHOOD WATER MAIN REPLACEMENT SCOPING REPORT

1. Project Summary

The proposed Central Cedar Hall Neighborhood Water Main Replacement Project includes the replacement of approximately 18,360 feet of water main. The project is expected to include approximately thirty (30) fire hydrants, forty (40) gate valves, and 170 service connections. Approximately 19,720 feet of existing water main will be abandoned and filled with grout. Three (3) existing parallel water mains will be replaced by one (1) water main so that only 18,360 feet of water main is proposed.

1.1. Project Limits

The project scope includes replacement of existing water mains along Grove Street from W Florida Street to Shanklin Street, Park Street and N 7th Avenue from W Maryland Street to Shanklin Street, N 5th Avenue from Fountain Avenue to just north of W Eichel Ave, W Maryland Street and Fountain Avenue from Grove Street to N Fulton Avenue, W Missouri Street from Grove Street to N Fulton Avenue, W Louisiana Street from Grove Street to N 7th Avenue, W Florida Street from Grove Street to N Fulton Avenue and W Eichel Avenue between N 7th Avenue and N 5th 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 130 to 310. The average score weighted by length for the existing water mains is 214.

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 \$7,219,000. This includes \$5,888,000 construction costs and \$1,331,000 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.