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PRELIMINARY ENGINEERING REPORT

OF

THE TOWN OF CROTHERSVILLE, INDIANA

DRINKING WATER SYSTEM IMPROVEMENTS

FOR

THE TOWN BOARD
CROTHERSVILLE
JACKSON COUNTY, INDIANA

November 22, 2021 (FPBH, Inc)

Revised March 23, 2023 (FPBH, Inc.)

Revised March 31, 2026

File # 20-11640



Drinking Water System Improvements PER – Crothersville, IN

Chapter 1 – General (Introduction)

A. Executive Summary

The Town of Crothersville has commissioned FPBH, Inc., to develop this Preliminary Engineering Report (PER), to evaluate distribution infrastructure and to assess the adequacy of current water supplies. The goal of this PER is to provide insight into the feasibility and sustainability of available assets in order to maintain a high level of service for its citizens.

Municipally owned and operated raw water source wells, in combination with wholesale purchases by means of contractual agreement with the Stucker Fork Water Utility, comprises the source water supplies that serves the Town of Crothersville. The Town is also interconnected with the Jackson County Water Utility for emergency use; however, there are no current agreements to purchase water from the Utility.

At present, two of the three wells owned and operated by the Town are in working order and in production. However, both wells are required to be in serial operation in order to supply the volume necessary to meet the Town's needs. This leaves no emergency redundancy. Solutions to increase production of these wells and/or purchase of additional supply from wholesale agreements are vital to ensure proper system operation.

A majority of the Town's supply, treatment and distribution system is nearing the end of useful life. Broken mains are increasingly becoming a concern, as it is estimated that roughly 1/2 of the system is over 40-years of age; with the remaining components nearing or exceeding 25-years of age. Much of the older water mains are of 4-inch diameter and contain dead-ends. Dead-end systems diminish fire protection and may adversely impact water quality by increasing water age.

The distribution system also lacks adequate isolation valving that is necessary to properly perform maintenance and make repairs. Inadequate valving raises operation and maintenance costs by increasing the number of manhours required to make emergency repairs. Additionally, a greater number of customers are impacted when these activities are performed.

Concerns in the Industrial Park located in the southern portion of Town are twofold. Industries often experience low pressure and inadequate fire protection volume resulting in the added expense of owning, maintaining and operating individual fire suppression tanks and systems. Inadequate volume and flow to the Industrial Park may limit new development, as well as detour existing industries from expanding.



Drinking Water System Improvements PER – Crothersville, IN

In summary, the following itemizes areas in need of improvement:

1. Provide additional elevated storage for volume; install new altitude valve(s) and chlorine boosters.
2. Replace existing 4-inch diameter mains with 6-inch diameter mains.
3. Eliminate dead-ends with looped systems.
4. Replace inoperable valves.
5. Replace potential lead containing service lines within the proposed project area.
6. Install isolation valves at strategic locations to reduce service area impacted during maintenance and/or breaks.
7. Locate and develop new well to for additional supply.
8. Install new filtering system and renovate treatment facility.
9. Install new remote-read meters within the distribution system.
10. Replace Supervisory Control and Data Acquisition (SCADA) system.
11. Install security fencing and access for the existing 300,000-gallon elevated water storage tank.

The combination of these efforts will assist the Town in maintaining sustainable service for current needs, as well as provide flexibility to ensure that future opportunities for growth are possible.

B. Authorization

The authorization for this report is pursuant to an Agreement for Consulting Services executed with the Town of Crothersville on July 7, 2020.

CROTHERSVILLE WATER SYSTEM PER
ALTERNATE B

PHASE 2 PROPOSED COSTS
WATER TREATMENT PLANT

Item	Description	Unit	Unit Cost	Qty	Amount
<u>Treatment Plant</u>					
1	High Service Pump Removal & Misc Plant Piping Modifications / Electrical changes to plant	Lump Sum	\$ 150,000.00	1	\$ 150,000.00
2	SCADA Integration for Final changes	Lump Sum	\$ 10,000.00	1	\$ 10,000.00
3	Meter Upgrades as needed for SCADA integration	Lump Sum	\$ 18,000.00	1	\$ 18,000.00
				Subtotal	\$ 160,000.00
<u>Filtration System</u>					
1	New Filter System w/ related Appertenances	Lump Sum	\$ 1,800,000.00	1	\$ 1,800,000.00
2	Existing Tank Removal & Roofing Repairs	Lump Sum	\$ 180,000.00	1	\$ 180,000.00
				Subtotal	\$ 1,980,000.00
<u>Chlorine Injection System</u>					
1	Replace Door / Lower Vent	Lump Sum	\$ 4,000.00	1	\$ 4,000.00
2	Provide New Vent Fan/Lower/ Remove old Vent Fan	Lump Sum	\$ 10,000.00	1	\$ 10,000.00
3	Replace Corroded Injection Piping / Remove Old	Lump Sum	\$ 3,000.00	1	\$ 3,000.00
4	Replace Electric Outlets/Panels	Lump Sum	\$ 3,500.00	1	\$ 3,500.00
				Subtotal	\$ 20,500.00
<u>Misc. Building Rehabilitation</u>					
1	Replace Lab Sink & Restroom Fixtures / Toilet Tank Internals	Lump Sum	\$ 2,000.00	1	\$ 2,000.00
2	Replace Lighting in old portion of the Water Treatment Plant Building	Lump Sum	\$ 37,000.00	1	\$ 37,000.00
3	Repair soffit & Fascia and replace missing gutters	Lump Sum	\$ 18,000.00	1	\$ 18,000.00
4	Replace Eye Wash Station	Lump Sum	\$ 2,000.00	1	\$ 2,000.00
				Subtotal	\$ 59,000.00
<u>Filter Backwash Lift Station Rehabilitation</u>					
1	Pump Replacements / w new rails, anchor coupling, and floats	Lump Sum	\$ 52,500.00	1	\$ 52,500.00
2	Electrical Control Panel Replacement	Lump Sum	\$ 30,000.00	1	\$ 30,000.00
				Subtotal	\$ 82,500.00
Treatment Plant SUBTOTAL					\$ 2,302,000.00

CROTHERSVILLE WATER SYSTEM PER
ALTERNATE B

DRINKING WATER DISTRIBUTION SYSTEM REHABILITATION

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Qty</u>	<u>Amount</u>
1	Traffic Maintenance	Lump Sum	\$ 75,000.00	1	\$ 75,000.00
2	Utility Coordination	Lump Sum	\$ 60,000.00	1	\$ 60,000.00
3	6" Water Main	Lft	\$ 140.00	16,700	\$ 2,338,000.00
4	Service Lines (est)	Lft	\$ 19.00	0	\$ -
5	Excavation	Cys	\$ 29.00	7,698	\$ 223,241.37
6	Structure Backfill	Cys	\$ 73.00	7,698	\$ 561,952.42
7	HMA Patching	Tons	\$ 150.00	3,266	\$ 489,866.67
8	Tapping Sleeves and Valves	Lump Sum	\$ 552,000.00	1	\$ 552,000.00
9	Remove Fire Hydrants	Lump Sum	\$ 128,000.00	1	\$ 128,000.00
10	Fire Hydrants with tap of existing main	Lump Sum	\$ 350,000.00	1	\$ 350,000.00
11	Fire Hydrant Replacement in place	Lump Sum	\$ 259,200.00	1	\$ 259,200.00
12	Fire Hydrants, new on new mains	Lump Sum	\$ 213,200.00	1	\$ 213,200.00
13	Gate Valves	Lump Sum	\$ 184,800.00	1	\$ 184,800.00
14	4" Insertion Valves	Lump Sum	\$ 48,000.00	1	\$ 48,000.00
15	6" Insertion Valves	Lump Sum	\$ 313,500.00	1	\$ 313,500.00
16	8" Insertion Valves	Lump Sum	\$ 62,500.00	1	\$ 62,500.00
17	10" Insertion Valves	Lump Sum	\$ 129,500.00	1	\$ 129,500.00
18	Service Reconnects to 6" mains for new & Abandoned main switches (Est)/ Main to Meter	Each	\$ 3,500.00	349	\$ 1,221,500.00
19	Meter Replacement for Remote Read without Service Line Replacement (Est)	Each	\$ 950.00	350	\$ 332,500.00
20	Additional service Line Replacement from meter to home due to meter disturbance (Est)	Each	\$ 4,700.00	200	\$ 940,000.00
21	Remote Read Gateway & Software Setup / Antenna Equipment & Installation	Each	\$ 59,800.00	1	\$ 59,800.00
22	Abandon Existing 4" Lines, Cuts & Caps	Lump Sum	\$ 75,000.00	1	\$ 75,000.00
23	Exploratory Excavation / Potholing	Lump Sum	\$ 150,000.00	1	\$ 150,000.00
24	Restoration	Lump Sum	\$ 55,000.00	1	\$ 55,000.00
25	Curb / Storm Repair / Misc Concrte Repairs	Lump Sum	\$ 160,000.00	1	\$ 160,000.00
			<i>Distribution</i>	<i>SUBTOTAL</i>	\$ 8,982,560.46

CROTHERSVILLE WATER SYSTEM PER
ALTERNATE B

<u>WELL PRODUCTION REHABILITATION & TOWER ITEMS</u>					
<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Qty</u>	<u>Amount</u>
<u>Well #2</u>					
1	Abandon Well per IDEM Requirements	Lump Sum	\$ 20,000.00	1	\$ 20,000.00
2	Demolish Building	Lump Sum	\$ 12,500.00	1	\$ 12,500.00
				SubTotals	\$ 32,500.00
<u>Well #4</u>					
1	Well Rehabilitation	Lump Sum	\$ 25,000.00	1	\$ 25,000.00
2	Replace Pump	Lump Sum	\$ 55,000.00	1	\$ 55,000.00
3	Replace Electrical Components	Lump Sum	\$ 45,000.00	1	\$ 45,000.00
4	Rehab Well# 4 Building	Lump Sum	\$ 12,000.00	1	\$ 12,000.00
				SubTotals	\$ 137,000.00
<u>New Well #5</u>					
1	Adjustments, Integration and Testing upon completion of Filter Replacement	Lump Sum	\$ 7,500.00	1	\$ 7,500.00
				SubTotals	\$ 7,500.00
			WELL WORK	SUBTOTAL	\$ 177,000.00
<u>Water Tower</u>					
1	Panel Changes for System Integration as needed	Lump Sum	\$ 10,000.00	1	\$ 10,000.00
2	Site Security Fencing	Lump Sum	\$ 16,000.00	1	\$ 16,000.00
				SubTotals	\$ 26,000.00
<u>New Water Tower</u>					
1	Site Fencing	Lump Sum	22000	1	\$ 22,000.00
2	Sampling Point Station	Lump Sum	18000	1	\$ 18,000.00
				SubTotals	\$ 40,000.00
			TOWER WORK	SUBTOTAL	\$ 66,000.00
			TOWER & WELL	SUBTOTAL	\$ 243,000.00

<u>Construction Cost TOTAL</u>	\$ 11,527,560.46
Mobilization and Demobilization	\$ 461,102.42

<u>CONSTRUCTION SUBTOTAL</u>	\$ 11,988,662.88
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Legal Counsel

Bond Counsel	\$ 60,000.00
Local Counsel	\$ 30,000.00
Grant Administration	\$ 25,000.00

Engineering Costs

Geotechnical Investigation	\$ 36,000.00
Design Engineering /Survey	\$ 517,500.00
Inspection	\$ 361,000.00
Contract Administration	\$ 200,500.00

Engineering Contingency

(ROE/Inspection/Contingency Lead Service Lines)

	\$ 310,000.00
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<u>ENG/ADMIN SUBTOTAL</u>	\$ 1,540,000.00
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<u>TOTAL</u>	\$ 13,528,662.88
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CROTHERSVILLE WATER SYSTEM PER
ALTERNATE B
PHASE 1 CONSTRUCTION COSTS

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Qty</u>	<u>Amount</u>
<u>Treatment Plant</u>					
1	Building Expansion for New Filters	Lump Sum	\$ 336,000.00	1	\$ 336,000.00
2	CSO Outfall Modifications	Lump Sum	\$ 97,551.26	1	\$ 97,551.26
3	New Well, Site Piping, SCADA, Electrieal, Site Pip	Lump Sum	\$ 426,953.00	1	\$ 426,953.00
4	75,000 gallon Water Tower/Site Work/Foundation/V	Lump Sum	\$ 1,314,029.47	1	\$ 1,314,029.47
5	Well#5 Drilling and Development	Lump Sum	\$ 89,304.00	1	\$ 89,304.00
<u>Phase 1 Total</u>					\$ 2,263,837.73

TOTAL CONSTRUCTION COSTS (PHASE 1 & PHASE 2)	\$ 14,252,500.61
<u>ENGINEERING / ADMIN COSTS</u>	<u>\$ 1,540,000.00</u>
<u>TOTAL PROJECT COSTS</u>	<u>\$ 15,792,500.61</u>

BAN Amount approved for Funding Construction Shortfalls of Phase1 and Design Fees	\$ 1,290,000.00
READI FUNDS Alloted PHASE 1 for Construction	\$ 1,800,000.00

Note: the Construction Contract was not subject to Davis-Bacon

ESTIMATED FUNDS REQUIRED TO COMPLETE PHASE 2 OF THE PROPOSED PROJECT (TOTAL PROJECT COSTS - READI FUNDS -BAN FUNDS)	\$ 12,702,500.61
<u>BAN FUND REIMBURSEMENT REQUESTED</u>	<u>\$ 1,290,000.00</u>
<u>TOTAL FUNDING REQUESTED</u>	<u>\$ 13,992,500.61</u>





