STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF JACKSON COUNTY WATER AUTHORITY FOR AUTHORITY TO ISSUE LONG-TERM DEBT AND ADJUST ITS RATES AND CHARGES	**CAUSE NO. 46156**

PREFILED DIRECT TESTIMONY AND EXHIBITS OF LORI A. YOUNG, P.E.

Direct Testimony of Lori A. Young, P.E.	Petitioner's Exhibit 4
Preliminary Engineering Report	Petitioner's Exhibit 5
DWSRF's Project Priority List	Petitioner's Exhibit 6

Respectfully submitted,

J. Christopher Janak, Atty. No. 18499-49
Jacob T. Antrim, Atty. No. 36762-49
BOSE MCKINNEY & EVANS LLP
111 Monument Circle, Suite 2700
Indianapolis, IN 46204
(317) 684-5000
(317) 684-5173 FAX
cjanak@boselaw.com
Counsel for Petitioner, Jackson County Water Utility, Inc.

Petitioner's Exhibit 4

PETITIONER'S EXHIBIT 4

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF JACKSON COUNTY WATER AUTHORITY FOR AUTHORITY TO ISSUE LONG-TERM DEBT AND ADJUST ITS RATES AND CHARGES	**CAUSE NO. _____**

PREFILED DIRECT TESTIMONY OF

LORI A. YOUNG, P.E.

ON BEHALF OF

JACKSON COUNTY WATER AUTHORITY

I.
Introduction

1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Lori A. Young and my business address is 110 Commerce Drive, Danville, Indiana 46122.

2. MS. YOUNG, HOW ARE YOU EMPLOYED?

A. I am a Registered Professional Engineer with the firm of Fleis & VandenBrink, a consulting engineering and architectural firm headquartered in Grand Rapids, Michigan. Fleis & VandenBrink offer a wide range of engineering and architectural services from ten (10) different office locations in Michigan and Indiana.

3. HOW LONG HAVE YOU BEEN EMPLOYED BY FLEIS & VANDENBRINK?

A. I have only been employed by Fleis & VandenBrink since October 1, 2024, when my prior firm Curry & Associates, Inc., merged with Fleis & VandenBrink. Prior to the merger, I was employed by Curry & Associates, Inc. for twenty-eight (28) years.

4. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND, EXPERIENCE, AND PROFESSIONAL STATUS.

A. I have earned a Bachelor and Master of Science Degrees in Civil Engineering from Purdue University, West Lafayette, Indiana. These degrees were awarded in 1995 and 1996, respectively. I also earned a Master of Business Administration Degree at Indiana Wesleyan University in 2004. I became a licensed professional engineer in the State of

Indiana in the year 2000, and my professional engineer registration number is PE IN10000117.

5. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE?

A. I have worked as a design engineer and project manager for Fleis & VandenBrink since 1996. Throughout this time, I have worked on a number of water and wastewater projects in Indiana. The projects have included such tasks as water and wastewater assessments and planning studies, utility relocations, infrastructure rehabilitation, water and wastewater treatment, water distribution systems, sanitary sewer collection systems, stormwater drainage, and advisory roles to governmental entities and private utilities. Although my role for a particular client may vary, I typically assist clients on all project phases from preliminary planning through budgeting, funding, design, obtaining regulatory approvals (including, but not limited to, approval from the Indiana Utility Regulatory Commission ("Commission")), bidding, and contract administration.

6. HAVE YOU OR YOUR FIRM TESTIFIED AS EXPERT WITNESSES BEFORE VARIOUS INDIANA GOVERNMENTAL AGENCIES, INCLUDING THE COMMISSION?

A. Yes. I have previously testified as an expert witness on behalf of the Waldron Conservancy District, Brown County Water Utility, Inc., Edwardsville Water Authority, and North Dearborn Water Authority. I also testified on behalf of Jackson County Water Utility, Inc. (now the Jackson County Water Authority ("Jackson County Water")) in its

prior rate case before the Commission, Cause No. 45640.

7. PLEASE DESCRIBE THE TYPES OF UTILITY ORGANIZATIONS WHICH YOUR FIRM REPRESENTS.

A. Our firm represents investor-owned utilities, nonprofit rural water and sewer companies, water authorities, conservancy districts, regional districts, and municipally owned utilities. I, along with other members of our firm, have also performed engineering services for a number of sewer and water projects for the Department of Natural Resources.

8. PLEASE DESCRIBE YOUR INVOLVEMENT IN THE VARIOUS WATER PROJECTS CARRIED OUT BY YOUR FIRM.

A. I typically meet with a representative of the utility to determine the utility's individual needs, and then provide design criteria and specifications, oversee the preparation of drawings, obtain the necessary permits and approvals, assist the utility in bidding, and, finally, act as an inspector for the construction of the contemplated improvements. The scope of our projects ranges from gathering basic preliminary data to preparation of engineering reports, supervision of construction, and ultimately, final project inspection.

9. WHAT IS THE EXTENT OF YOUR INVOLVEMENT IN THE WATER PROJECT THAT IS THE SUBJECT OF THIS PROCEEDING?

A. Curry & Associates, Inc. and now Fleis & VandenBrink has been the consulting engineer for Jackson County Water for approximately forty-two (42) years. During our time of involvement, Jackson County Water has maintained and extended water service into

various rural and municipal areas in Jackson, Lawrence, Brown, Bartholomew, and Jennings Counties, Indiana. Generally, its service area has included a large area in south central Indiana from Brownstown to areas adjacent to Interstate 65. In the last couple of years, Jackson County Water has tested for and discovered that it has perfluoroalkyl or polyfluoroalkyl substances ("PFAS") in its water supply. On April 10, 2024, Environmental Protection Agency ("EPA") announced the final National Primary Drinking Water Regulation ("NPDWR") for six PFAS. The regulation requires Jackson County Water to reduce the amount of two PFAS compounds, PFOA and PFOS, in its water supply below four (4) parts per trillion. In light of this EPA requirement, Jackson County Water has aggressively sought alternatives to ensure that its water supply is in compliance with the new regulatory requirements. Over the last couple of years, I have worked with Jackson County Water to identify capital improvements that could treat its water supply to the point of EPA compliance and, alternatively, the possibility for drilling new wells in a new area that would not contain PFAS. I developed cost estimates for each of these two (2) alternatives and presented both to the Board. Due to the rather high cost associated with new treatment facilities, the Board has opted to drill new wells in an effort to obtain a water supply without PFAS.

10. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is two-fold. First, I will briefly describe Jackson County Water's current system and the improvements it proposes to make to address and remediate

the PFAS that is currently in its water supply. Second, I will generally describe Jackson County Water's prospective capital and periodic maintenance needs and the estimated cost of the same.

II.
Current System and Proposed Improvements

11. MS. YOUNG, CAN YOU GENERALLY DESCRIBE THE CURRENT FACILITIES OWNED AND OPERATED BY JACKSON COUNTY WATER?

A. Jackson County Water currently owns and operates a water treatment plant in Brownstown, Indiana, rated at 2,000 gallons per minute. This water plant is a catalytic reactor-type water treatment plant. The treatment process is designed to:

a. Reduce hardness from 330 ppm to approximately 180 ppm;
b. Remove iron;
c. Remove manganese;
d. Disinfect the water using chorine;
e. Fluoridate the water; and
f. Measure both raw water and finished water flow.

Raw water for this water treatment plant originates from six (6) existing wells which are capable of producing an aggregate flow of approximately 2,800 gallons per minute. These wells are shallow wells which remove raw water from the layers of sand and gravel in the White River Valley which is near the Town of Brownstown and Jackson County Water's water treatment plant. The existing facilities are the result of various waterworks improvements which have been added over a number of years and include hundreds of miles of water transmission and distribution mains of various diameters and of different

materials. Jackson County Water's facilities also include above-ground storage facilities, booster pumps, office, and storage buildings. A description referencing these facilities is included in my Preliminary Engineering Report ("PER") which I have attached to this testimony as Petitioner's Exhibit 5.

12. DID YOU COMPLETE AND SUBMIT THE PER AS PART OF THE FINANCING PROCESS WITH THE DRINKING WATER STATE REVOLVING FUND LOAN PROGRAM ("DWSRF")?

A. Yes, I did. I, along with other members of my firm and Jackson County Water, completed the PER and submitted it to the DWSRF in March, 2024. The DWSRF, in turn, reviewed the PER along with all other preliminary engineering reports that were submitted by utilities across the state. Based on a variety of factors, the DWSRF rated the Jackson County Water project as the number three priority on the DWSRF's Project Priority List published on July 15, 2024. A copy of the DWSRF's Project Priority List is attached as Petitioner's Exhibit 6. Due to the timing associated with obtaining Commission approval, purchasing the property in question, installing test wells, obtaining bids, and beginning construction, the DWSRF has moved this project to its next fiscal quarter beginning July 1, 2025. In the meantime, however, the DWSRF has offered Jackson County Water a very beneficial interim funding package in the form of a $750,000 forgivable loan and a $250,000 zero percent (0%) interest loan. The proceeds from the forgivable loan and zero percent (0%) interest loan will fund Jackson County Water's preliminary engineering, land

acquisition, and soft costs. Jackson County Water's financial advisor, Mr. Earl Ridlen, will further explain the details of the financing in his prefiled testimony exhibits that were filed simultaneously herewith.

13. MS. YOUNG, CAN YOU PLEASE DESCRIBE THE PER TO THE EXTENT IT IS NOT OTHERWISE SELF-EXPLANATORY?

A. Yes, I can.

14. PLEASE DESCRIBE THE CONTENTS OF THE PER.

A. The PER is organized into an executive summary and six (6) chapters. The Executive Summary provides an overview of needs for the planning horizon. Chapter 1 generally describes Jackson County Water's current conditions and infrastructure with tables and referencing exhibits. Chapter 2 describes Jackson County Water's need for the proposed capital improvements including population trends in and around Jackson County Water's service territory, customer growth, and Jackson County Water's projected twenty (20) year water system needs.

Chapter 3 identifies the various alternatives for the proposed improvements. Chapter 4 includes the recommended improvements and estimated cost of the proposed project.

Chapter 5 evaluates the environmental impact of the proposed projects and includes a number of maps and diagrams. Chapter 6 outlines the public participation component, interlocal agreements, and other required SRF information. It also includes a financial information form required by the DWSRF.

15. PLEASE DESCRIBE THE PROPOSED IMPROVEMENTS THAT WOULD BE FUNDED BY THE DWSRF DEBT.

A. The Project will construct six (6) new wells, each with a planned design pumping capacity of 500 gpm. These wells will provide a supplemental water supply with the objective of better water quality and low or no PFAS contamination. Included with the project are all the non-construction costs required for the construction of new wells including engineering, land purchase for additional wells, hydrogeology, modeling and test wells.

16. WHY DID THE BOARD ULTIMATELY DECIDE TO INSTALL NEW WELLS?

A. While I am not a member of the Board, I was present during the conversations concerning the various alternatives to address Jackson County Water's PFAS issue. At some point in the future, Jackson County Water will be required to replace its water treatment plant that consists of components that are now up to 39 years old. One of the options to address the PFAS issue and comply with EPA mandates was to install a new water treatment plant that used granular activated carbon ("GAC") filters for treatment. This type of treatment process is effective for significantly reducing the amount of PFAS in Jackson County Water's water supply, but it is feared that it would be expensive to install and thereafter operate. This concern was exacerbated by the fact that IDEM has not yet adopted PFAS limits for discharge of filter backwash water and other possible treatment reject water streams to the river from the water treatment facility. The emerging treatment technologies and new EPA PFAS limits are contributing to uncertainty and volatility in costs for GAC

replacement and disposal. The Board had great concern that the cost of operating and maintaining this new plant would be extremely expensive which would, in turn, lead to a significant rate increase for Jackson County Water's customers. As an alternative, the Board decided to pursue a Phase I option to install new wells in an area that will hopefully not have water contaminated with PFAS. This would allow Jackson County Water to delay water treatment plant construction until PFAS treatment costs and discharge limits for discharge to the river are more clearly defined. A future Phase II Project shall be developed if necessary to remove PFAS to ensure Jackson County Water's drinking water meets regulatory standards. By that time, the regulatory limits will be more clearly defined for discharge streams, and the hydrogeological investigation will allow better understanding of the PFAS plume and how to most strategically and cost effectively perform PFAS removal treatment.

III.
Periodic Maintenance and Other Capital Improvements

17. HAVE YOU REVIEWED THE PERIODIC MAINTENANCE ITEMS AND AMOUNTS SET FORTH IN MR. RIDLEN'S PREFILED TESTIMONY AND EXHIBITS?

A. Yes, I have. I have reviewed the periodic maintenance expense items and estimated costs set forth in Mr. Ridlen's accounting report ("Accounting Report"). I believe the items and amounts are consistent with the periodic maintenance expenses that Jackson County Water will incur on a prospective basis.

18. CAN YOU EXPLAIN THE PROCESS BY WHICH JACKSON COUNTY WATER DETERMINED AN APPOPRIATE AMOUNT FOR PERIODIC MAINTENANCE EXPENSE?

A. Yes, I can. Jackson County Water's general manager, Larry McIntosh, and I worked together on developing an accurate list of the utility's periodic maintenance needs and estimated costs of such tasks. As a starting point, I reviewed the periodic maintenance expense for other similarly situated utilities for which I have worked and then provided this list to Mr. McIntosh. Mr. McIntosh used this list and compared recent invoices and his experience in preparing a final list. The final list of periodic maintenance expense was provided to Mr. Ridlen who included the estimated periodic maintenance expense for Jackson County Water in his Accounting Report.

19. DO YOU BELIEVE THE AMOUNTS FOR PERIODIC MAINTENANCE ARE APPROPRIATE AND REASONABLE?

A. Yes, I do. After significant review and research, I believe the items and amounts detailed in the Accounting Report are an accurate reflection of the type and amount of expenses that Jackson County Water will experience for periodic maintenance.

20. TO YOUR KNOWLEDGE, IS JACKSON COUNTY WATER SEEKING AN EXPENSE OR ALLOWANCE IN ITS RATES FOR DEPRECIATION THAT WILL BE USED TO PAY FOR CERTAIN CAPITAL IMPROVEMENTS?

A. Yes. Although I am not an attorney, I understand that by converting to a water authority, Jackson County Water is able to include in its revenue requirement the greater amount of extensions and replacements or depreciation. In this instance, Jackson County Water has decided to include an amount in its rates for depreciation. Jackson County Water intends to use these funds to pay for unexpected and unforeseen repairs and replacements and to complete certain capital improvements.

III.
Conclusion

21. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

VERIFICATION

I affirm under the penalties for perjury that the foregoing testimony is true to the best of my knowledge, information, and belief.

Lori A. Young

Lori A. Young, P.E.
Fleis & VandenBrink

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing "Verified Direct Testimony and Exhibits of Lori A. Young, P.E." was served upon the following by electronic mail this 1st day of November, 2024:

Indiana Office of Utility Consumer Counselor
infomgt@oucc.in.gov

J. Christopher Janak

Bose McKinney & Evans LLP
111 Monument Circle, Suite 2700
Indianapolis, IN 46204
(317) 684-5000

4816068.1

Petitioner's Exhibit 5

JACKSON COUNTY WATER UTILITY, INC.[1]

2024 PRELIMINARY ENGINEERING REPORT

CURRY & ASSOCIATES, INC.

CONSULTING ENGINEERS & ARCHITECTS

Prepared By
Curry & Associates, Inc.
110 Commerce Drive
Danville, Indiana 46122

March 27, 2024
Revised August 26, 2024

[1] As of August 16, 2024, Jackson County Water is considered an Authority under Indiana law.

JACKSON COUNTY
WATER UTILITY, INC.[2]

2024 PRELIMINARY ENGINEERING REPORT

BOARD OF DIRECTORS

Steve Ritter, President
Brian Fish, Vice President
Gloria Baughman, Secretary
Tim Steltenpohl, Treasurer
Richard D. Tormoehlen, Director
Glenn Henry, Director
Clayton Beard, Director
Gary Wente, Director
Robert Akin, Director
Larry McIntosh, Manager

FUNDING AGENCY:
INDIANA FINANCE AUTHORITY
STATE REVOLVING FUND LOAN PROGRAM

Lori A. Young

Prepared By:
Curry & Associates, Inc.
Engineers & Architects
110 Commerce Drive
Danville, Indiana 46122

March 27, 2024
Revised August 26, 2024

[2] As of August 16, 2024. Jackson County Water is considered an Authority under Indiana law.

JACKSON COUNTY WATER UTILITY, INC.
2024 PRELIMINARY ENGINEERING REPORT

TABLE OF CONTENTS

[1] Chapters 3 and 4 revised July 2024.

Tables in Text

Figures in Text

Appendices

[2] Alternative 3 cost estimate revised July 2024 to account for 6, rather than 3, wells. Additional Alt. 3 documents added.

EXECUTIVE SUMMARY

The Jackson County Water Utility, Inc. (JCWU) water system maintains its own water treatment plant (WTP), supplied by groundwater from its own well field. In addition to supplying water to JCWU customers, the Utility also sells water. The well field, located adjacent to the WTP building, includes six active wells. Several of these wells no longer function at design capacity. All of the wells, particularly those closest to the nearby East Fork of White River, have high iron concentrations. Three of the wells exceed EPA HAL and/or IDEM AL levels for regulated PFAS contaminants. The Utility anticipates that all wells located in this well field will likely exceed regulatory limits for PFAS in the future. This PFAS exceedance of proposed regulatory limits is the driving factor for the proposed improvements.

The existing WTP, constructed in 1985 and later expanded, was originally designed to reduce iron and manganese concentrations and to remove some calcium hardness. The nearly 40-year-old WTP is not equipped for PFAS filtration. Further, the existing WTP is already operationally complex due to aging equipment, high raw water iron concentrations that impact equipment, and the retrofitted nature of the building. The existing distribution system includes various sections that experience frequent severe leaks. Other sections of the distribution system require improvements such as looping to eliminate dead ends or larger diameter water mains to serve anticipated residential populations such as the proposed 150-lot subdivision to be in the eastern part of the county, bordered to the west by I-65 and to the east by US 31.

This report proposes a set of projects designed to improve and expand water supply capacity and quality, increase water treatment capacity, and incorporate PFAS filtration into the treatment train, and upgrade the distribution system to meet projected overall and regional demand throughout the service area. To increase supply and raw water quality, up to three additional wells are proposed. While the unused portion of the existing well field property will indeed be evaluated, the Utility is also investigating other locations for a potential second well field. Ideally, the proposed additional wells will ensure ample capacity for the next 20-40 years, while also reducing raw water concentrations of iron, manganese, and PFAS.

While further expansion of the existing WTP building to accommodate equipment for PFAS removal is potentially feasible in the short term, this approach would have limited longevity and would not address many of the existing issues. This report evaluates and compares two alternatives—expansion and retrofit of the existing WTP, and building a new WTP designed for increased capacity with a treatment train that addresses PFAS.

The proposed alternatives for JCWU for the planning horizon include the following projects also identified on Figure 5.1 in Appendix B:

- Proposed Water Treatment Plant to Provide PFAS Removal
- Clearwell Tank Expansion

- New Water Supply Wells
- Lubker Booster Station Replacement
- Gorbetts Chapel Booster Station Replacement
- Generators for Booster Stations (Kentucky Avenue & Persimmon Lake)
- Installation of Tank Mixers at Existing Storage Tanks
- Water Main Loop & Replacement: CR 100 East and CR 875 N
- Water Main Loop at CR 400 North
- Water Main Extension and Loop at CR 400 N, I-65 & US 231
- Water Main Loop at Base Road & SR 258
- Water Main Replacement at CR 225 W & CR 400 N.

CHAPTER 1: CURRENT CONDITIONS

1.1 EXISTING SYSTEM

The existing JCWU water utility infrastructure includes one well field, a water treatment plant (WTP) located adjacent to the well field, and a distribution system with booster stations and storage tanks. The existing WTP removes iron and manganese, as well as some hardness, from groundwater. JCWU's highest priority needs pertain to supply and treatment, due to PFAS contamination of the well field. Additional distribution system needs include tank mixing and looping of water mains along with replacing aged infrastructure.

1.1.1 SUPPLY

JCWU currently produces all of its water supply from a single well field, located adjacent to the WTP and south and east of the East Fork of White River, in Brownstown, Indiana. JCWU purchased its original wells and well field from General Water Company in 1984. Since 1984, a total of five new water supply wells have been drilled and one well (Well 5) was acquired from Morgan Packing Company. Table 1.1.1 below summarizes the age, capacity, and water quality of each respective well. The six active wells were constructed between the 1970s and 2023.

WATER QUALITY

The groundwater in this well field has historically been high in iron, manganese and hardness. Raw water iron concentrations range from 0.5 ppm at Wells 3R and 5, both located closer to the WTP and farther than most of the other wells from the river, to 3.5 ppm at Well 8, located closest to the river. Table 1.1.2 summarizes 2023 water quality data including raw and finished concentrations of alkalinity, hardness, iron, and manganese.

Treatment is required to meet the secondary MCLs of 0.3 ppm for iron and 0.05 ppm for manganese. These constituents do not present a public health risk, but EPA does have Secondary MCLs for Iron and Manganese. Hardness is not a secondary standard, but softening provides a nicer quality of water for customers. JCWU provides treatments for removal of iron and manganese to below the EPA Secondary Standards. JCWU has also provided softening treatment to reduce hardness in the finished water.

JCWU participated in voluntary PFAS testing of its raw and treated water in 2023. The first round of sampling was conducted on June 20, 2023, and the second round of sampling was conducted on September 25, 2023. See IDEM Results in Appendix A. **Three of JCWU's wells exceeded newly established EPA Health Advisory Levels (HALs) for PFAS contaminants, specifically PFOA and PFOS.** Several other PFAS contaminants, including newer short-chain forms, were identified in the well field but did not exceed proposed regulatory limits. See Appendix A for a complete table of detected PFAS contaminants in the well field as of December 2023.

WELLS

All existing wells, except #4, are equipped with vertical turbine pumps and are located on well towers to place the top of the well casing 3'-0" above the 100-year flood elevation. Each well has a valve vault with a check valve and gate valve. The wells pump raw water from the pumping level in the well to the top of the catalytic reactor in the water treatment plant. The pumping level in the water supply well is estimated to be approximately 491 msl and the top of the catalytic reactor at the water plant is approximately an elevation of 572 msl. Therefore, the elevation lift provided by the well pumps is 81 feet or 35 psi prior to considering pressure required to overcome pipeline friction.

The present well field is ideally located in terms of access to the maximum water supply. The wells are located on the south side of White River and on the north side of Slab Road. The wells are approximately 100 feet deep and terminate in sand and gravel formation approximately 30 feet in thickness. The static level in the most recently constructed water supply well is approximately 16 feet below existing grade level. Static water level in the entire well field is influenced by the water level in the East Fork of White River.

The well field has a Well Field Control Building that contains the motor starters for Wells #6, #7R, and #8. Electric power flows from the main breaker in the water treatment plant via buried cable to the well field control building. Electric power continues from the main distribution panel at the main breaker to the motor starters in the building, then to the disconnect at each well. A radio operated SCADA system sends a signal from the main control panel located at the water treatment plant to the well field control building to start and stop each well pump. A standby power generator set is located in the water treatment plant. The standby power generator can operate the entire water treatment plant and wells #6, #7R, and #8. With these three wells operating, JCWU can produce approximately 2,160,000 gpd until electric power is restored. The well field control building is positioned on elevated earthen fill to raise the electrical equipment a minimum of 3'-0" above the 100-year flood level. Electric supply to the well field is very reliable in the event of an electric power interruption.

The raw water main from the wells to the treatment plant is primarily 12" SDR 21 PVC pipe. The majority of this pipe was replaced in approximately 1995. The 12" PVC raw water main is installed in a sandy loam soil and operates at low pressure. In 2015, JCWU constructed access for the regular swabbing of the raw water transmission main. This project ensures the Utility's ability to flush the main to prevent accumulation in the line due to precipitated iron, manganese, and hardness from the raw water.

Table 1.1.1 provides a listing of active wells and their characteristics. Well #7 was replaced in 2023. Wells #4 and #5 are the oldest wells at 38 – 50+ years old. Approximately 40 years is the normal expected useful life for a well. Replacement of these wells will be needed in the next 10 years. The functional capacity of the well field is adequate to meet current demand with Safe Capacity of 3.38 MGD.

Table 1.1.1: Existing Active Wells

Well No.	Design Capacity	Notes
1 & 2	N/A	Wells 1 and 2 have been abandoned.
3R	500 gpm (averages 320 gpm)	-Constructed in 2011 to replace Well 3 -Cleaning is needed soon. -3R and 5 have the lowest iron (Fe) concentrations at 0.5 ppm.
4	350 gpm	-Constructed in 1986. -32.7-50.5 ppt PFOA exceeds EPA Interim HAL of 0.004 ppt. -32.1-61.1 ppt PFOS exceeds EPA Interim HAL of 0.02 ppt.
5	500 gpm	- Constructed in the 1970s or earlier by Morgan Packing Company. -Rescreened before 2014. -11-13 ppt PFOA exceeds EPA Interim HAL of 0.004 ppt. -6-9.6 ppt PFOS exceeds EPA Interim HAL of 0.02 ppt. -3R and 5 have the lowest iron (Fe)concentrations.
6	500 gpm	-Constructed in 1995. -2.5-4.6 ppt PFOA exceeds EPA Interim HAL of 0.004 ppt.
7R	500 gpm	-Constructed in 2023 to replace adjacent Well 7, now abandoned. --Based on location, this new well will likely exceed PFAS limits.
8	500 gpm	-Constructed in 2009. -Higher in iron (Fe) at up to 3.5 ppm than any of the other wells.
Peak Production Capacity = 2,850 gpm with all wells online = 4.1 MGD Safe Capacity = 2,350 gpm with highest well out of service = 3.38 MGD		

CURRENT NEED: The most urgent water supply concern is the PFAS contamination, particularly of Wells 4, 5, and 6. New wells without PFAS contamination, or with lower PFAS contamination are needed. Due to the location of these wells and the likely source of contamination from the closed Keifer Facility, PFAS contamination will likely be found in Well 7R. There may be an opportunity for better water quality on JCWU owned land to the north and east. Three test wells have been drilled on this property previously and the aquifer formation is good for additional wells in this area. Wells 4 and 5 are recommended for replacement due to age, and the PFAS contamination further emphasizes the need to replace these wells.

The best alternative is to develop new wells without PFAS contamination, but that may not be possible in this well field. A recent Groundwater Analysis was conducted on the former Kieffer Paper Mill site immediately across the street from the JCWU Water Treatment Plant and near the Well Field. The sample results from this analysis are included in Appendix A which identifies high levels of PFAS in groundwater. The Utility anticipates that all wells located in this well field will likely have levels of detection of PFAS in the future. Given the complex aquifer characteristics in this area and nearby areas, new wells adjacent to the existing well field are the most immediate opportunity for additional groundwater supply to meet system needs. Treatment will be required to remove the PFAS contaminants.

1.1.2 TREATMENT

JCWU owns and operates its own WTP, located at 1119 W. Spring St. in Brownstown. The existing WTP building was constructed in 1985. A photo of the existing plant is included in Appendix A. The plant was designed to remove iron and manganese, as well as calcium hardness. Table 1.1.2 below summarizes both raw and finished water quality. Raw water enters the plant directly from the adjacent well field. The well pumps convey water to one or more of four existing 500-gpm catalytic reactors that are each capable of operating at up to a peak flow rate of 600 gpm. These reactors are currently limited to 350 gpm each because of hydraulic challenges caused by scale build-up and a series of 90-degree bends that were required for the available space. 35% sodium hydroxide (NaOH) or "caustic" is injected in the catalytic reactors for the purpose of raising pH to approximately 8.4 in order to supersaturate and precipitate out calcium carbonate and to oxidize and precipitate out iron and manganese onto the sand catalyst.

Next, water flows by gravity from the catalytic reactors to the re-carbonation tank. Carbon dioxide (CO_2) is injected in the re-carbonation tank for the purpose of lowering pH to 7.2 in order to prevent further precipitation of calcium carbonate ($CaCO_3$) in the filters. The present water treatment plant contains three cylindrical horizontal end piped gravity flow filters. The filters extend through the water treatment plant wall and are end piped to provide the filter face piping and valves. Each filter has a surface area of 259 sf and is rated at 777 gpm. This is based on the filter operating at a filter rate of 3.0 gpm/sf. The capacity of all three filters is 2,331 gpm. Filter face piping has all pneumatically operated valves. Upon manual initiation, the filter control panel operates the entire sequence of valve operation for each filter cell until all filter cells are backwashed.

Table 1.1.2: 2023 JCWU WTP Water Quality Data

Month	Alkalinity		Hardness		Iron (Fe)		Manganese (Mn)	
	Raw (mg/L)	Finished (mg/L)	Raw (mg/L)	Finished (mg/L)	Raw (mg/L)	Finished (mg/L)	Raw (mg/L)	Finished (mg/L)
January	288-330	289-340	310-348	180-242	0.4-3.0	0.001-0.15	0.06-0.637	0.001-0.027
February	270-334	288 - 350	330 - 356	190 - 236	0.6-2.8	0.003-0.37	0.16-0.48	0.002-0.043
March	280-340	248-340	320-360	180-240	.7-3.068	0.07-0.188	0.158-0.661	0.006-0.184
April	286-314	200-310	280-344	170-220	0.455-1.886	0.024-0.264	0.142-0.400	0.010-0.048
May	290-328	210-320	302-352	178-224	0.601-3.316	0.022-0.325	0.325-0.490	0.000-0.027
June	308-350	262-320	330-360	182-240	1.014-3.288	0.010-1.27	0.346-0.606	0.000-0.021
July	298-342	250-320	250-356	180-220	0.61-3.3	0.11-0.44	0.38-0.5	0.006-0.069
August	308-320	260-325	330-364	182-240	0.947-2.176	0.101-0.602	0.315-0.419	0.005-0.036
September	306-343	180-336	336-360	110-238	0.777-1.678	0.043-0.391	0.315-0.600	0.011-0.040
October	242-340	272-336	330-354	202-252	1.016-3.230	0.051-0.574	0.102-0.582	0.002-0.034
November	302-356	270-352	314-450	188-271	0.95-3.2	0.076-0.46	0.09-0.91	0.01-0.121
December	290-346	260-350	320-370	192-250	0.926-2.897	0.210-0.534	0.320-0.573	0.001-0.033
Overall:	270-356	180-352	250-450	110-271	0.4-3.3	0.001-0.46	0.06-0.91	0.001-0.184

Finally, three transfer pumps move water through the plant's three existing 777-gpm mixed media multicell filters and on to the 750,000-gallon above grade clearwell tank. Filtered water then flows to an 85,000-gallon below-grade concrete clearwell. Flow from the 750,000-gallon clearwell is controlled by an electrically actuated valve that releases flow to the smaller clearwell. **There is concern about this valve failing and possible draining of the large clearwell tank.**

The water treatment plant has three high service pumps: one (1) rated at 500 gpm, and two (2) rated at 1,000 gpm each. The three pumps alternate and start and stop based on the SCADA system. The signal from the water level transmitter in either the 800,000-gallon standpipe or the 300,000-gallon elevated tank in Brownstown is used to automatically start and stop these high service pumps. The high service pumps are designed to operate with a maximum of two pumps operating at a pressure of 85 psi and a discharge of 2,000 gpm.

The high service pumps in the water treatment plant are connected to a turbine water meter, which serves as a master meter for all water entering the JCWU water distribution system from the water treatment plant. This turbine meter is the means of measuring total water pumpage. The turbine water meter includes a transmitter to facilitate the sending of flow readings to the SCADA system.

CHEMICALS

Several chemicals are utilized in the water treatment process. Chlorine gas is utilized for both pretreatment and post treatment. Chlorination is accomplished on a flow-proportional basis. Sodium hydroxide (caustic) is utilized for pH adjustment to precipitate the calcium carbonate hardness. Carbon dioxide is added to the partially treated water to reduce the pH and stabilize the remaining hardness prior to filtration. Fluoride in the form of hydrofluorisilicic acid (H_2SiF_6) is added to promote dental health and is injected based on flow-proportional control. In 2015, JCWU rehabilitated the original sodium hydroxide room constructed in 1986 due to corrosion and aged equipment. The sodium hydroxide tank and piping were replaced in 2015. JCWU has also replaced the carbon dioxide bulk storage tank in approximately 2015.

BACKWASH

A filter control panel controls the entire backwash process. Water for backwashing the filters is taken from the 750,000-gallon clearwell tank. This water is transferred via a pair of vertical in-line centrifugal pumps that backwash the filters, taking suction from the clearwell tank. Dirty backwash water is transferred to a backwash water-settling pond. The pond is an unlined earthen pond constructed in the natural sand and gravel formation. All water discharged into this pond percolates into the ground, leaving behind all iron and manganese oxide precipitate.

OFFICE AND OPERATIONS SPACE

The Utility Office is located at 119 West Spring Street, Brownstown, Indiana. The water treatment facility building includes office space for management, billing, payment processing, record storage and meeting. In 2015, a secure operations space for data processing equipment was constructed at the office building. The space allows for the proper security and environmental controls for JCWU data and billing systems.

SCADA

JCWU SCADA systems were last updated approximately seven (7) years ago. All tank SCADA was completed approximately nine (9) years ago and then other system components were updated seven (7) years ago following a lightning strike.

MAINTENANCE AND STORAGE

JCWU constructed a new maintenance building in 2009. This building has provided valuable secure space for equipment storage and field operations staff. JCWU utilizes an old masonry building for pipe storage. The pipe storage building was one of the Morgan Packing Company facilities prior to purchase by JCWU. This old building is very large, has a good concrete floor, and provides a safe, clean surface for storage of piping and distribution system materials. There has been some significant deterioration of sections of the roof and walls of this building. JCWU is continuing to maintain the current structure for storage of pipe and other system materials.

CAPACITY

The plant has a rated peak capacity of 2,331 gpm (3.36 MGD) with all three (3) 777-gpm mixed media filters online. The plant has a firm capacity of 1,554 gpm (2.24 MGD) with two (2) mixed media filters online and one out of service.

CURRENT NEED: Removal of the Emerging PFAS Contaminants is the most urgent need for JCWU. The existing water treatment plant does not have any processes capable of removing PFAS. Attached in Appendix A are PFAS testing results notifications from the Indiana Department of Environmental Management showing the treated water from the existing plant exceeding anticipated EPA limits twice in 2023. Design options must be closely evaluated in consideration of the existing plant, which was first constructed in 1985-1986 with periodic upgrades. The original plant buildings and many major treatment components are nearly 40 years old, and this must be considered for any treatment modifications or options. The catalytic reactor softening process is somewhat unique, and with the configuration of pumps and piping in the current facilities, it would be very difficult to insert PFAS removal into the current treatment trains.

1.1.3 STORAGE

There are two clearwell tanks at the water treatment plant. Five of the water storage tanks are standpipe type tanks. Standpipe water storage tanks typically have an effective water storage volume of one-third of their total volume. The top 1/3 of a standpipe tank volume serves to provide pressure to the distribution system. When the water level drops below 2/3 full the pressure benefit is typically reduced to below the system need.

The five (5) existing standpipe water storage tanks have a nominal volume of 2,845,000 gallons. The net effective storage of the five (5) standpipes is 950,700 gallons. The total effective storage available in the distribution system plus the plant clearwell storage, is 2,596,700 gallons. JCWU has generator backup power at the Water Treatment Plant and could additionally pump water from the clearwell tanks to the system. The effective storage including clearwell storage exceeds the system average demand and the highest recent peak demand day of 2.01 MGD on July 6, 2022. Several of the original 1970s storage tanks remain in operation. While JCWU is evaluating storage improvements, there is no immediate need to either decommission existing tanks or add new ones.

CURRENT NEED: Tank mixing for all distribution system tanks is needed. This will help ensure water quality and prevent freezing during the winter.

Table 1.1.3 below summarizes the existing storage tanks.

Table 1.1.3: Existing Storage Tanks

Tank Name	Capacity (gallons)	Function	Type	Year Constructed
Plant Clearwell	85,000	High Service Pump Suction	Below Grade	1986
Plant Clearwell	750,000	High Service Pump Suction	Flat bottom	2009
U.S. 50 & S.R. 135	300,000	Distribution System Supply	Multi-column	1986
Brownstown Standpipe	800,000	Distribution System Supply	Standpipe	2004
Clearspring	300,000	Distribution System Supply	Multi-column	1971
Vallonia	211,000	Distribution System Supply	Flat Bottom	1971
Crane Hill	65,000	Distribution System Supply	Standpipe	1971
Chestnut Ridge	750,000	Distribution System Supply	Standpipe	2004
Acme	640,000	Distribution System Supply	Standpipe	2015
Freetown	590,000	Distribution System Supply	Standpipe	2022

Crane Hill Tank

The 65,000-gallon Crane Hill standpipe, located in the Chestnut Ridge Network, was constructed when JCWU was originally constructed in 1971. This tank has a limited water storage volume relative to a newer and larger tank which is being considered for the future pending land availability. The 750,000-gallon Chestnut Ridge water storage tank, constructed in 2004, floats on the same portion of the water distribution system as the Crane Hill water storage tank.

Brownstown Network

There are two finished water storage tanks located within the Town of Brownstown that float on the "Brownstown Network." These two tanks are as follows:

- US 50 & S.R. 135 Tank: 300,000-gallon double ellipsoidal elevated water storage tank
- Brownstown Standpipe (Spring Street): 800,000-gallon standpipe

The effective water storage in the 800,000-gallon standpipe is approximately 267,000 gallons. Therefore, the effective elevated water storage in the Brownstown network is approximately 567,000 gallons. Both tanks are in good condition.

Water from the Brownstown Network flows to three (3) booster stations and to the Vallonia network. The Brownstown network provides suction to the following water booster stations:

- Rural Booster Station → Serves Clearspring Tank, Freetown Tank & Acme Tank
- Chestnut Ridge Booster Station → Serves Crane Hill Tank & Chestnut Ridge Tank
- Lubker Booster Station → Serves Crane Hill Tank & Chestnut Ridge Tank
- Vallonia Tank (Served by gravity)

Both elevated water storage tanks in the Brownstown Network have a high-water overflow elevation of 750 msl. With two elevated water storage tanks, it is possible to perform maintenance on one water storage tank while maintaining service to customers.

Chestnut Ridge Network

There are two finished water storage tanks located within the Chestnut Ridge Network, located north and east of the town of Brownstown. These two tanks are as follows:

- Crane Hill Tank: 65,000-gallon standpipe water storage tank located on U.S. 50 between Brownstown and Seymour.
- Chestnut Ridge Tank: 750,000-gallon standpipe located on S.R. 11 south of Seymour.

The effective water storage in the 750,000-gallon standpipe is approximately 250,000 gallons. The combined effective elevated water storage in Crane Hill and Chestnut Ridge Tanks is approximately 272,000 gallons.

The Chestnut Ridge Network is essentially a looped network that extends north from Brownstown on U.S. 50 and east from Brownstown on S.R. 250. This water main ultimately forms a loop on which both the Chestnut Ridge Tank and Crane Hill Tank float. Two booster stations, Lubker and Chestnut Ridge, fill these two tanks.

The Lubker Booster Station, located on U.S. 50, pumps to the Crane Hill Water Tank, from which water can then flow to the Chestnut Ridge Tank. The Chestnut Ridge Booster Station, located on S.R. 250 across from the Jackson County Jail, takes suction from the Brownstown Network and pumps directly to the Chestnut Ridge Tank via a 10" SDR 21 PVC water main constructed before 2020. A system of 4", 6", 8" and 10" water mains connect these two elevated water storage tanks. The Chestnut Ridge Standpipe and the Crane Hill Standpipe have the same high-water overflow elevation of 800 msl. This high-water elevation is approximately 50 feet higher than the high-water elevation of the two water storage tanks in Brownstown, thus necessitating the Lubker Booster Station and the Chestnut Ridge Booster Station.

With two elevated water storage tanks, it is possible to perform maintenance on one water storage tank without providing marginal flow and marginal pressure to the rural water customers east and north of Brownstown.

Clearspring Network

One water storage tank serves the Clearspring Network. The Clearspring Elevated Water Storage Tank is a 300,000-gallon double ellipsoidal elevated water storage tank with a high-water level of 1010' amsl. The 300,000-gallon elevated tank was constructed in approximately 1971 as one of the first components of the original water distribution system. The tank appears to be in good condition and has been repainted as needed.

The Rural Booster Station pumps from the Brownstown Network to the Clearspring Network. The Clearspring Tank high-water level is 260' higher than the Brownstown Tanks. Two VFD-operated pumps at the Rural Booster Station are dedicated to this system, providing approximately 250 gpm at constant discharge pressure even as suction pressure fluctuates. The VFDs, added as an improvement from the 2015 project, allow JCWU to provide constant pressure with the high service pumps when the tank needs to be taken out of service for maintenance.

Freetown Network

A single water storage tank serves the Freetown Network. The Freetown Tank is a 590,000-gallon standpipe water storage tank with approximately 197,000 gallons of effective storage. The Freetown Tank was constructed in approximately 2022. JCWU provides an average of nearly 109,000 gpd to wholesale customer BCWU through the Freetown Network.

The Rural Booster Station pumps from the Brownstown Network to the Freetown Network. The Freetown Tank high-water level is 900' amsl, which is approximately 150' higher than the Brownstown tanks. Two pumps at the Rural Booster Station are designated to the Freetown Network, with a pumping rate of approximately 400 gpm. The pumps are equipped with VFDs to allow operation based on constant discharge pressure. This improvement from the 2015 project allows JCWU to provide constant pressure with the high service pumps when the tank needs to be taken out of service for maintenance.

Acme Network

One water storage tank serves the Acme Network. The Acme Tank is a 640,000-gallon standpipe water storage tank installed in 2015 to provide additional storage volume and water pressure. It replaced a 300,000-gallon ground-level water storage tank which was original to the system and was demolished.

The Rural Booster Station, which was completely rehabilitated in 2015, pumps from the Brownstown Network to the Acme Network at 500 gpm. A secondary pump was added in 2015 to the booster station to ensure more constant pressure and pump control, especially during times of tank maintenance. The Acme Tank high-water level is 800' amsl, which is approximately 50' higher than the Brownstown tanks.

This network serves Rose Acre Farms, which is Jackson County Water's single largest commercial water customer in terms of annual water consumption.

Vallonia Network

A single storage tank serves the Vallonia Network. The Vallonia ground-level water storage tank is a 211,000-gallon water storage tank. The Vallonia Tank was constructed in approximately 1971 as one of the original water distribution system components. The effective water storage in the Vallonia Network tank is 211,000 gallons.

The Brownstown Network feeds the Vallonia Tank by gravity. The Vallonia Tank serves a vast area of Jackson County including Driftwood and Grassy Fork townships. The IDNR Starve Hollow Lake Campground and Recreation Facilities are included in this service area. The Vallonia Tank has a high-water overflow elevation of 750 msl, nearly identical to the Brownstown Network tanks. A 10" diameter water main feeds the Vallonia Tank from the Brownstown Tank at the intersection of U.S. 50 and S.R. 135. This large diameter water main allows the Vallonia Tank to fill at a low flow rate with minimal head loss when flowing from the Brownstown tanks.

With a single ground-level water storage tank, it is difficult to perform maintenance on the water storage tank without negative impacts on service to water customers in the Vallonia Network.

1.1.4 DISTRIBUTION SYSTEM

Jackson County Water Utility, Inc. serves water throughout a very large area, as identified on Figure 1.2.1. The service area commences west of the Lawrence county line and extends east to Interstate 65. The service area commences north of the Bartholomew county line and north of the Brown county line and extends south, near the town of Crothersville. The service area covers a vast area of drastically differing terrain and geological conditions. The area is characterized by both extremely flat river bottom areas and extremely hilly, rolling knob areas in the north and west portions of the service area. Soils range from deep sandy soil to shallow depths of dense hard rock. Geographic features of the White River and Muscatatuck River greatly impact the development patterns of Jackson County. The second major influence in the location of development in Jackson County has been transportation networks consisting of highways and railroads.

Design criteria and materials of construction were less well defined when JCWU was originally organized. The original water distribution system contained many small water main diameters. Many of the original water lines were 2" or 3" in diameter. As the water system has grown, many of the original, smaller diameter lines have been replaced with larger pipe. In addition, lines that experienced corrosion and numerous leaks due to age have been replaced.

JCWU expanded its service area in 2018-2019 to serve an additional area of over 500 homes east and southeast of Seymour and northeast of Crothersville. Homes in this area were previously served only by private wells.

The JCWU distribution system includes cast iron, galvanized steel, ductile iron, and PVC among the various water mains. Much of the original water main pipping in Brownstown has been replaced with PVC and DI. However, significant portions of the original system remain and will need to be replaced over time. Three major issues impact the distribution system: significant and/or frequent leak events in some sections due in part to age; dead ends that complicate maintenance efforts and may contribute to stagnant water zones; and projected growth in areas with smaller water mains.

In recent years, JCWU added emergency water connections with Jennings Water, Inc., to serve the Reddington area. Reddington (IN5236008) purchases regular water supply from Indiana American Water – Seymour (IN5236005) but can purchase emergency water supply from Jennings Water, Inc. (IN5236008). An emergency connection to serve the town of Medora was also constructed in recent years.

CURRENT NEED: Given the extensive network of JCWU water mains, there are critical water mains that are either dead ends or the source of frequent breaks and leaks that need to be addressed. A photo of one water main which is exposed at a creek crossing and needing replacement is included in Appendix A. **JCWU has identified water main needs which are included in Chapter 3 alternatives.**

CURRENT NEED: JCWU has existing booster stations which need improvements. Both Lubker and Gorbetts Chapel Booster Stations need replaced. In addition, Kentucky Avenue and Persimmon Lake Booster Stations need emergency generators.

Table 1.1.4 summarizes existing booster station needs.

Table 1.1.4: Existing Booster Station Needs

Booster Station	Details
Chestnut Ridge	No work needed.
Lubker	**Existing below grade booster pumps in a pit need to be replaced with an above-grade booster station** (generator not needed)
Gorbetts Chapel	**Existing below grade booster pumps in a pit need to be replaced with an above-grade booster station with an emergency generator.**
Persimmons Lake	**Existing booster station needs a generator.**
Kentucky Avenue	**Existing booster station needs a generator and a camera.**
Rural	No work needed.

1.2 CURRENT POPULATION AND EXISTING SERVICE AREA

JCWU was organized in 1970 and commenced serving water in 1975. The service area is roughly defined by the boundaries of Jackson County with additional customers to the north, northeast, and southeast. JCWU serves a population of approximately 14,000 via approximately 5,931 active customers of 6,695 total active and inactive connections. JCWU serves its local customers with groundwater pumped from its own well field and treated at its own WTP. JCWU also serves additional customers located outside its regular service area that it serves with purchased water. JCWU serves approximately 400 Reddington (IN5236008) customers who are not connected to the main JCWU distribution system with water purchased from Indiana American Water-Seymour (IN5236005). JCWU serves approximately 13 customers in Crothersville (IN5236001) with water purchased from Crothersville. JCWU has an agreement with Jennings Water, Inc. to supply emergency water via a master meter located at U.S. 31 and CR 300 N to Reddington customers.

JCWU sells water wholesale to four other utilities on an emergency or regular purchase basis that then supply that water to their own customers. JCWU only has one formal written agreement in place with Indiana American Water which is included in Appendix C.

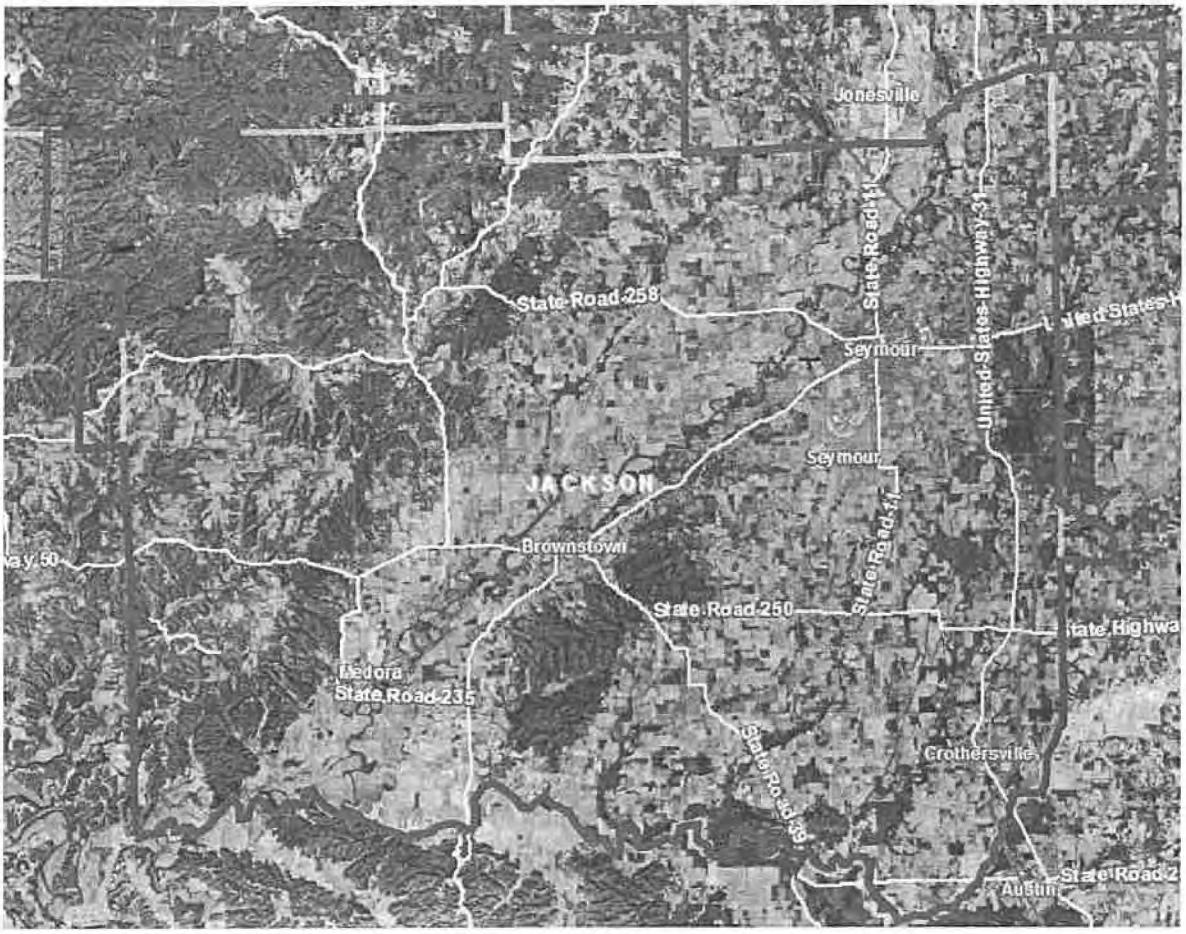


Figure 1.2.1: JCWU Service Area

1.3 CURRENT SIGNIFICANT WATER USERS

2023 billing summaries show that approximately 95% of customers are domestic, accounting for approximately 56.8% of total consumption. Approximately 2.4% of customers are commercial. Commercial customers use approximately 29.2% of water sold to billed customers. Institutional users represent approximately 1.9% of the customer base and consume approximately 4.1% of the water sold. Other water customers include wholesale contract, industrial, and fire protection.

Table 1.3.1: Billed Water Consumption for 2023

Customer Type	No. Customers	% of Customer Base	% of Total Consumption	Total Consumption (Gallons/Year)	Total Consumption (Gallons/Day)
Wholesale (BCWU IN5207001)	1	0.0%	9.6%	39,681,100	108,715
Domestic	5,656	95.3%	56.8%	235,170,000	644,301
Commercial	145	2.4%	29.2%	121,059,000	331,668
Industrial	6	0.1%	0.2%	944,500	2,588
Institutional (Schools, Jails, Hospitals)	111	1.9%	4.1%	16,860,000	46,192
Fire Protection	12	0.2%	0.1%	343,200	940
TOTAL	5,931	100%	100%	**414,057,800**	**1,134,405**

1.4 EXISTING CONSUMPTION

JCWU pumped and purchased versus sold water was reviewed for 2023 and is summarized in Table 1.4.1. The 2023 ratio of water pumped to water pumped and purchased is comparable to that from the 2021 AWWA Validated Water Loss Audit in Table 1.4.2. The Validated Water Loss Audit from 2021 is attached in Appendix A.

Non-revenue water totals were approximately 20-21%, with approximately 7% public use and apparent losses per the AWWA standards. Approximately 13% of water was real loss/unaccounted for water loss.

Table 1.4.1: Total Pumped and Purchased versus Sold in 2023

	2023
Total Pumped (Gallons)	498,922,000
Total Purchased (Gallons)	20,170,680
Total Pumped and Purchased (Gallons)	519,092,680
Total Sold (Gallons)	414,057,800
Total estimated public use or apparent losses (Gallons, estimated flushing/fire protection/metering inaccuracies, etc.)	37,000,000 / 7.1% (estimated to be the same as 2021, 2023 AWWA validated audit not yet complete)
Total Water Lost/Real Loss (Gallons) / %	68,034,880 / 13.1%

Table 1.4.2: Total Pumped and Purchased versus Sold in 2021

	2021
Total Pumped (Gallons)	475,686,000
Total Purchased (Gallons)	16,166,990
Total Pumped and Purchased (Gallons)	491,852,990
Total Sold (Gallons)	391,057,200
Total estimated public use or apparent losses (Gallons, estimated flushing/fire protection/metering inaccuracies, etc.)	37,000,000 / 7.5% approximately
Total Water Lost/Real Loss (Gallons) / %	63,795,790 / 13.0%

Tables 1.4.3 and 1.4.4 below summarize existing demand, based on 2023, and existing design capacity. While the Peak Day Demand can be handled by the existing treatment plant with one of three filters out of service, the estimated peak hourly demand does exceed the rated peak capacity of the plant with all three filters operating simultaneously. Accordingly, the current level of peak hourly demand is high enough to lower net water storage as demand briefly exceeds the WTP's capacity to fill the clearwell and/or other storage towers in the system.

Table 1.4.3: Existing Demand (Last 12 Months) versus Existing Design Capacity

Average Day Demand	1,368,054 GPD 950 GPM
Peak Day Demand	1,816,000 GPD 1,260 GPM
Estimated Peak Hourly Demand, (PF=4)	228,009 GPH 3,800 GPM

Table 1.4.4: Existing Design Capacity

Design Flow	GPM	MGD	Notes
Average Design Flow (ADF)	1,554	2.24	Firm capacity with (2) of (3) 777-gpm mixed media filters in service.
Maximum Design Flow (MDF)	2,331	3.36	Rated peak capacity with all (3) 777-gpm mixed media filters online.
Maximum Design Hourly Flow*	139,860 GPH	0.14 MGD	Rated capacity with all (3) 777-gpm mixed media filters online.

*JCWU's Effective Storage provides capacity to meet peak hourly flow demand.

Table 1.4.5 below summarizes 2023 consumption by user type. While commercial customers accounted for approximately 2.4% of billed customers in 2023, commercial consumption accounted for over 29% of billed consumption. Historically, Rose Acres Farms has been the largest

customer making up approximately 20-22% of water consumption totals in prior years. However, in 2023, water consumption by Rose Acres Farms was 59,742,200 gallons which represents 14.4% of consumption. Brown County Water Utility has represented 9-10% of water consumption totals each year.

Table 1.4.5: Breakdown of Consumption (Last 12 Months)

Source	Gallons/Year	% Total Consumption
Commercial	121,059,000	29.2%
Industrial	944,500	0.2%
Domestic	235,170,000	56.8%
Institutional	16,860,000	4.1%
Fire Protection	343,200	0.1%
Wholesale Contract	39,681,100	9.6%

CHAPTER 2: CURRENT NEEDS

2.1 20-YEAR SERVICE AREA AND POPULATION

JCWU's 20-year service area population is expected to be driven more by localized residential construction, particularly in the eastern portion of the service area, than by overall population growth. Population projections for Jackson County, per STATS Indiana, show an effective growth rate of less than 1% between 2022 and 2030, with a moderate overall population decline between 2022 and 2045. These estimates support recent population data for the county as well as for the JCWU service area. See Figure 1.2.1 JCWU Service Area in Chapter 1.

Table 2.1.1: Historic and Projected* Population Growth for Jackson County

Data Set	Year	Population
Jackson County, 2045 Projection*	2045	45,751
Jackson County, 2040 Projection*	2040	45,816
Jackson County, 2035 Projection*	2035	45,798
Jackson County, 2030 Projection*	2030	45,822
Jackson County, 2025 Projection*	2025	45,564
Jackson County, Estimated*	2022	46,300
Jackson County, Estimated*	2021	46,285
Jackson County, Census	2020	46,461
Jackson County, Census	2010	42,376
Jackson County, Census	2000	41,335
Jackson County, Census	1990	37,730
Jackson County, Census	1980	36,523
Jackson County, Census	1970	33,187
Jackson County, Census	1960	30,556
Jackson County, Census	1950	28,237
Jackson County, Census	1940	26,612
Jackson County, Census	1930	23,731
Jackson County, Census	1920	24,228
Jackson County, Census	1910	24,727
Jackson County, Census	1900	26,633

**Source: Stats.indiana.edu*

2.2 20-YEAR CAPACITY NEEDS

While the service area population is not expected to rise significantly, overall water consumption is expected to rise, particularly in the eastern portion of Jackson County. Several factors lead JCWU to expect growth throughout the eastern portion of the service area in the area referred to as the I-65 Corridor. For example, a proposed 150-lot subdivision is planned south of Seymour near the eastern boundary of the service area in an area bordered by Interstate 65 and US Highway 31. County economic development initiatives have recently focused on Uniontown, potentially exerting significant growth potential. Existing wholesale and emergency supply agreements with neighboring utilities also have the potential to contribute to increased demand over the next 20

years. Demand for regional service to Medora is likely to rise over the next 20 years. While water treatment upgrades and increased water supply should be prioritized, water main replacements and additional water main looping are also critical to any long-term plan for JCWU.

JCWU's 20-year water system capacity needs have been evaluated based on the increase in billed customers from 2013 to 2023, the increase in consumption over the same time frame, and JCWU's expectations for development and increased demand as described in the previous paragraph. Between 2013 and 2023, all available customer counts show a steady growth rate of approximately 1.2% per year, from 5,300 customers (2013) to 5,931 active customers (2023 billing records). This recent rate of relatively steady growth would result in a 2043 customer count of approximately 7,560 customers. This estimate does not account for planned residential development or other likely sources of customer and demand growth. Anticipated development in the I-65 Corridor, including the proposed 150-lot subdivision, as well as potential wholesale growth, could easily double the projected 20-year growth, resulting in a 2043 customer count of approximately 9,570 customers.

Between 2013 and 2023, the volume of water pumped and purchased by JCWU in one calendar year increased by approximately 31% (or an average of 3.1% per year) from 396,199,400 gallons (1,085,478 GPD average) to 519,092,680 gallons (1,422,172 GPD average). While the annual rate of change in the volume of water pumped and purchased has fluctuated from year to year, 3.1% annual growth in the volume of water pumped and purchased is the best estimate for the 20-year planning period. In order to meet a 3.1% annual growth rate, JCWU should plan to design an average design capacity of approximately 2.6 MGD by 2043. Table 2.2.2 below summarizes 20-year growth and demand projections.

There has also been an increase in peak day demand from 1,994,700 gallons on March 10, 2012, to 2022. Two days in 2022 exceeded 2,000,000 gallons - 2,011,000 gallons in July 2022 and 2,006,000 gallons in September 2022. Peak days in 2021 and 2023 were under 2,000,000 gallons.

Table 2.2.1: 20-Year Projected Population Growth

Year	2023	2043 (With 2013-23 Growth Rate)	2043 (With Higher Growth Than in 2013-23) Growth Rate)
No. Customers	5,931	7,560 (1.2% Annual Growth)	9,570 (2.4% Annual Growth)
Avg. Water Pumped & Purchased (GPD)	1,422,172	2,618,939 (3.1% Annual Increase)	2,829,822 (3.5% Annual Increase)
Avg. Water Consumed (GPD)	1,134,405	2,089,014 (3.1% Annual Increase)	2,257,226 (3.5% Annual Increase)

Table 2.2.2 below summarizes existing 2023 and projected 2043 capacity needs based on 2023 billed consumption and 2024 projected levels. The distribution of demand for 2043 is based on the assumption that demand will increase equally among all customer categories. Projected demand will require approximately 4 MGD of treatment capacity in order to meet peak demand days.

Table 2.2.2: 20-Year Capacity Needs (GPD)

Demand Type	2023 Gallons Per Day (GPD)	2043 (With 2013-23 Growth Rate)	2043 (With Higher Growth Than in 2013-23) Growth Rate)
Domestic (D)	644,301	1,187,000	1,283,000
Commercial (C)	331,668	610,000	659,000
Industrial (I)	2,588	4,180	4,500
Other	155,847	288,000	312,000
Total Average Daily Demand	1,134,405	2,090,000	2,258,500
Public Use/ Real Water Loss/Apparent Water Loss	287,767	439,000 (21%)	474,000 (21%)
Peaking Factor	1.8	1.8	1.8
Peak Day Demand (D+C+I)	2,041,929	3,762,000	4,065,000
Peak Hour Demand	85,080	156,750	170,000 Gallons/Hour

2.3 20-YEAR SYSTEM NEEDS

Based on the current system conditions and capacities, as described in Chapter 1, and the projected 20-year capacity needs summarized above, the primary needs for JCWU fall into the categories of Water Supply and Treatment, Distribution System – Booster Stations, Distribution System – Water Storage, and Distribution System – Water Mains. The sections below summarize each of these needs, while *Chapter 3 Evaluation of Alternatives* presents feasible alternatives for addressing each of these categories of need.

2.3.1 WATER SUPPLY AND TREATMENT

Table 1.1.1 Existing Wells summarized the capacity and condition of the six active wells located in the JCWU well field. The existing well field has a rated capacity of 2,350 gpm with one of the 500-gpm wells out of service and a total production capacity of 2,850 gpm with all wells in operation. Additional supply will be needed to meet current demand as existing wells decline in capacity over time, including one constructed by Morgan Packing Company in the 1970s, and eventually reach the end of their useful lives. Further, increased supply capacity will be needed to meet future demand levels as anticipated development occurs in the area known as the I-65 Corridor and in currently undeveloped areas such as the proposed 150-lot subdivision located northeast of JCWU in an area bordered by I-65 to the west, US 31 to the east, and E CR 400 N to the north. *Table 2.2.1 20-year Capacity Needs* summarizes projected 20-year demand.

Water quality issues also contribute to the need for additional supply. As summarized in *Section 1.1.1 Supply* of Chapter 1, PFAS contaminants have already been identified in three of six active wells and are expected to be discovered at some level in newly constructed Well 7R during the next round of well field testing.

The existing WTP building was constructed in 1985 and later expanded in 2009. Aging equipment and operational complexity have contributed to frequent maintenance challenges. While PFAS removal technology could theoretically be incorporated into the existing treatment train with the addition of a building dedicated to PFAS removal, this approach would not address any of the existing maintenance issues, would not be easily amenable to increasing design capacity, and would only further increase operational complexity.

The existing treatment train was designed primarily to remove iron, manganese, and hardness. Fluoride injection and chlorine disinfection are also performed. There is currently no capacity for PFAS removal. JCWU has already received two notifications from IDEM that two long-chain PFAS contaminants, PFOA and PFOS, have been detected at levels that exceed the EPA's respective interim HALs for those two PFAS. In order to both protect public health and avoid violations for exceeding regulatory limits, the existing treatment train must be modified to incorporate PFAS removal.

Section 1.1.2 Treatment in Chapter 1 summarized the existing treatment train and design capacity of the JCWU Water Treatment Plant (WTP). The existing WTP includes three (3) 777-gpm (1.12 MGD) mixed media multicell pressure filters. The WTP can treat approximately 2.24 MGD with one filter out of service or 3.4 MGD with all three filters in operation. The proposed treatment train must be designed to accommodate projected 20-year demand, while also incorporating PFAS removal. The proposed treatment plant must be designed for projected demand, existing treatment objectives, and PFAS removal, while simultaneously minimizing operational complexity.

2.3.2 DISTRIBUTION SYSTEM – BOOSTER STATIONS

The existing booster stations, summarized by *Table 1.1.4 Existing Booster Stations* in Chapter 1, have been well maintained and provide sufficient additional pressure when and where needed. JCWU has identified needs among the booster stations in the system. *Section 3.2 Distribution System – Booster Station Alternatives* in Chapter 3 further describes those booster stations with pressing needs and how JCWU proposes to solve those needs.

The two existing below-grade booster stations, Lubker and Gorbetts Chapel, need to be replaced with above-ground versions. Additionally, JCWU needs to add a generator for the Gorbetts Chapel booster station. The Gorbetts Chapel replacement will need to be relocated to accommodate the required above-ground footprint.

Two additional booster stations – Kentucky Avenue and Persimmon Lake- require upgrades, but not replacement. Both booster stations have pumps and ancillary equipment that are in good condition. Each of these booster stations require a dedicated generator with automatic transfer switch (ATS) for operational reliability during storm events and other conditions that may result in

power outages. Additionally, the Kentucky Avenue booster station requires a security upgrade in the form of a camera and SCADA system upgrade to allow real-time monitoring of the camera feed.

2.3.3 DISTRIBUTION SYSTEM – WATER STORAGE

The existing water storage tanks are well maintained and provide sufficient effective storage, distributed throughout the system. Projected 20-year average daily demand, presented in *Table 2.2.1 20-year Capacity Needs*, will exceed this volume. 2023 volumes of pumped and purchased water – 1,422,171 GPD average- and average daily consumption – 1,134,405 GPD average- are well below available storage volume. JCWU is beginning to plan for a future increase in storage volume.

One significant immediate water storage infrastructure need has been identified by JCWU: tank mixers. None of the eight existing tanks currently include tank mixers. *Table 1.1.3 Existing Storage Tanks* in Chapter 1 summarizes the existing storage tanks. Tank mixers could be particularly valuable for the five standpipes and the flat-bottom Vallonia Tank. Tank mixing is relatively new as a standard technology but has become standard for new standpipes and preferred for elevated storage tanks. Tank mixing inhibits thermal stratification and promotes uniform water age throughout the storage volume. Tank mixing thereby ensures a uniform chlorine residual, minimizes the potential for high trihalomethane (TTHM) levels, and prevents the development of ice shards that could potentially scratch interior paint.

2.3.4 DISTRIBUTION SYSTEM – WATER MAINS AND SERVICE LINES

Section 1.1.4 Distribution System in Chapter 1 summarized the condition of the existing distribution system. The distribution system has been well maintained by JCWU, and many water mains and service lines have already been replaced. JCWU's distribution system included many lead service lines (LSLs) prior to the 2020 PER, which focused on the distribution system. JCWU completed the resulting Brownstown Water Main and Lead Service Line Replacement Project in January 2024, replacing all active LSLs. *Table 2.4.1 Service Line Information* below summarizes the absence of LSLs among remaining active service lines. Service lines in the system do not represent a source of significant need. However, there remain critical water mains that are either dead ends or the source of frequent leaks that require emergency maintenance by JCWU personnel. Problematic sections of water mains will only worsen if no action is taken. Dead ends create stagnant water zones with the potential for water quality issues. Dead ends also pose a supply challenge for scheduled or emergency maintenance. Looping is necessary to ensure reliable water supply and quality to all customers. Replacement of high-leak water main sections is similarly necessary to maintain water supply and quality. *Section 3.4 Distribution System – Water Main Alternatives* summarizes Feasible Alternatives 8-12, which JCWU has identified as critical to eliminating dead ends and frequent water main leaks.

Table 2.3.1: Service Line Information

Service Line Material Category	Quantity
Known Lead	0
Known Lead Connector	0
Galvanized Requiring Replacement (GRR)	0
Known non-lead	6,695 connections (5,931 active)
Unknown	0
Total Service Lines in Distribution System	6,695

CHAPTER 3: EVALUATION OF ALTERNATIVES

3.0 NO ACTION ALTERNATIVE

For each identified project alternative, the choice to take "No Action" remains an alternative. The "No Action" alternative would allow the water system component that has been identified as a "current need" to continue operation without improvement or replacement.

The "No Action" alternative selection does not have immediate environmental impacts caused by new construction, nor does it have an initial capital cost. Long-term operation, maintenance, and repair costs are typically significant as infrastructure in poor condition requires much more costly maintenance and repair work to try and keep the component in service, particularly under emergency conditions.

A water utility is obligated to maintain its waterworks in a manner that protects public health and provides reliable service to customers. Taking no action on known problems puts customers at risk for interruption of service, boil water orders, and negative impacts on water quality. Failure to address known problems allows those problems to worsen and when failure occurs in the water system, it becomes an emergency. The expense of emergency repair projects is much greater than planned repair or replacement.

"No Action" is not a viable alternative for JCWU. Action must be taken in order to maintain the integrity of the water utility and provide improved reliability, service, and water quality to customers.

3.1 WATER SUPPLY AND TREATMENT ALTERNATIVES

This section evaluates feasible options for addressing the water system needs, primarily supply and treatment, as well as distribution, identified in *Chapter 2: Utility Needs*. PFAS removal technologies are developing, and there are pros and cons to the alternatives available. The following general information was considered in the development of treatment alternatives. Table 3.1.1 provides an overall comparison of three treatment technologies for PFAS removal in drinking water.

Table 3.1.1: Comparison of Treatment Technologies

DESCRIPTION	Granular activated carbon (GAC) filtration	Anion Exchange (IX)	Closed Circuit Reverse Osmosis (CCRO)
Capital Cost	Lower than IX	Higher than GAC	Highest
Operating Costs	Lower than IX	Higher than GAC	CCRO<RO due to retaining much less feed water
Pretreatment	Fe & Mn removal required upstream of GAC/IX/CCRO.	Fe & Mn removal required upstream of GAC/IX/CCRO.	Fe & Mn removal required upstream of GAC/IX/CCRO.
EBCT/ Other Design Basis	10-20 minutes	2-5 minutes	N/A RO membranes are sized based on design hourly or daily rate of water volume production.
Footprint	Larger than IX due to higher EBCT	Smaller than GAC due to shorter EBCT	Low
Redundancy Requirements for Peak Design Flow of 4.0 MGD	4 (3+1) GAC Vessels. GAC, IX, and ERI each require 2+ treatment vessels in series with lead/lag for maintenance (Ten State Standards)	4 (3+1) IX Vessels. GAC, IX, and ERI each require 2+ treatment vessels in series with lead/lag for maintenance (Ten State Standards)	4 (3+1) CCRO Skids
Removal of Long Chain or Short Chain PFAS?	Carbon-based adsorption favors long-chain, hydrophobic PFAS over short-chain, hydrophilic PFAS.	-Long Chain (Highly effective at removing PFOS and moderately effective at removing PFOA) -Short Chain (Water quality analysis required. IX may preferentially remove common ions rather than intended short-chain PFAS.)	-Long Chain and Short Chain -Also removes hardness
Waste	Once the adsorptive capacity of the GAC has been exhausted, the carbon needs to be replaced.	IX requires disposal and replacement of resins, which may require additional permits.	CCRO generates concentrated waste at a flow equal to 4-10% of feed water flow. GAC treatment proposed for CCRO concentrate only.

JCWU's current water treatment plant operations include significant chemical costs. In 2022 and 2023 the chemical costs ranged from $351,000 - $360,000. Power costs for the utility were approximately $230,000 in 2023. Proposed PFAS removal technologies have significant chemical and electrical costs that must be considered.

Closed Circuit Reverse Osmosis (CCRO)

Closed Circuit Reverse Osmosis (CCRO) has been identified as a very effective solution for removing PFAS, while also removing hardness (softening). Unlike standard reverse osmosis (RO) processes, which retain up to 20-25% of feed water as waste, CCRO generates a reject waste volume equal to approximately 4-10% of the feed water. A CCRO system would be quickly fouled by high concentrations of iron and manganese and, thus, iron and manganese must be removed prior to CCRO treatment. The CCRO requires a relatively consistent flow rate and quality. Accordingly, pretreatment is required. For this alternative, Ultrafiltration (UF) or conventional aeration, detention and filtration could be installed as an upstream treatment process to remove oxidized iron and manganese.

While a CCRO system will generate much less reject water than a traditional RO system, it is important to note that the CCRO waste stream will be a highly concentrated source of PFAS that must be managed. With emerging regulations for PFAS, future regulations are expected on PFAS for NPDES permitting. The reject water would likely require treatment prior to discharge to a receiving stream. The local wastewater utility would not allow the flow to be discharged into the sanitary sewer system.

A Granular Activated Carbon (GAC) system could be installed downstream of the CCRO system, for the purpose of adsorbing PFAS from the waste stream onto carbon granules sourced from coal. Coal-based GAC is ideal for PFAS adsorption due to having more cracks and crevices than other forms of GAC. The GAC system will be designed to accommodate approximately 10% of the estimated feed flow to the CCRO system, based on the CCRO manufacturer's estimate of RO reject water volume.

CCRO has many attributes that make this technology ideal for JCWU, with both long and short chain PFAS removal effectiveness, and hardness removal. CCRO would remove close to 100% of long and short chain PFAS, while both GAC and IX would allow a small percentage of PFAS to pass through. CCRO will also remove all hardness, which is a process that JCWU currently performs with catalytic reactors. Post-treatment mineral addition in the form of calcium carbonate is required after the CCRO system.

All three referenced PFAS removal technologies -GAC, IX, and RO or CCRO- do require upstream removal of iron and manganese, which can foul GAC or IX filters or RO membranes. JCWU could accomplish this pre-treatment step with conventional aeration, detention, and filtration OR install ultrafiltration (UF) upstream of the selected PFAS removal system. Both of these options are examined in Alternatives 1A and 1B. The existing catalytic reactors remove hardness as well as iron and manganese, while a UF and conventional filtration system would only remove iron and manganese. Implementation of CCRO would eliminate the need for softening currently performed by the catalytic reactors.

Relative to IX, GAC filtration generally has a lower capital cost, but requires a larger footprint for equipment due to a higher required empty bed contact time (EBCT). IX is often considered ideal for well water with few contaminants and low TDS and TOC, as its faster kinetics (relative to GAC) results in smaller equipment, less piping, and lower costs for media disposal.

ALTERNATIVE 1A: WATER TREATMENT PLANT TO PROVIDE PFAS REMOVAL – CONVENTIONAL FILTRATION + CCRO

A. Description

This alternative includes CCRO for PFAS removal. Pre-treatment removal of Iron and Manganese would be accomplished with conventional aeration, detention, and filtration. The proposed project would be constructed on the same site as the existing water treatment facility. This would be a new treatment plant and would not utilize the existing water treatment plant facility.

B. Design Criteria

Design criteria is to remove iron, manganese, hardness, and PFAS. See preliminary design criteria for Alternative 1A and Preliminary Schematic for Conventional Filtration with Reverse Osmosis in Appendix B.

The proposed design flow for the new plant is recommended to be 3.0 MGD average design 4.0 MGD peak design. The design is recommended to be planned for expandability to facilitate future upgrades.

Table 3.1.2: Alternate 1A Water Treatment Design Requirements

Constituent	Raw Water	Finished Water
Iron (ppm)	4	<0.1
Manganese (ppm)	1	<0.05
Hardness (ppm)	450	<100
PFAS (ppt)	**	~~Pending final Regulatory Determination~~ 4.0 ppt PFOA, 4.0 ppt PFOS, 10 ppt GenX/PFNA/PFBS[1]

The minimum PFAS removal requirements are based on those PFAS contaminants – PFOA and PFOS – that have exceeded the latest EPA HALs and IDEM ALs. Based on samples collected in June 2023 and September 2023, respectively, PFOA concentrations will need to be reduced from 2.5-50.5 ppt down to the interim EPA MCL of 4.0 ppt[2] ~~HAL of 0.004 ppt~~. PFOS concentrations will need to be reduced from 3.3-61.1 ppt down to the interim EPA MCL of 4.0 ppt ~~HAL of 0.02 ppt~~. Several other PFAS contaminants detected in June 2023 and September 2023, including short chain PFAS, did not exceed applicable proposed EPA HALs or IDEM ALs.

The short-chain PFAS contaminants, most of which were developed in the early 2000s as substitutes for older long-chain forms of PFAS, respond less effectively to common PFAS removal technologies. Short-chain PFAS contaminants are hydrophilic, highly soluble, and have much lower sorption efficiency than do long chain PFAS, making granular activated carbon (GAC) less effective even when the treatment train has not been designed to remove

[1] Revised July 2024; EPA MCLs established April 10, 2024.
[2] Revised July 2024; MCLs revised.

short chain PFAS. Since short chain PFAS do not adsorb well, their presence increases the cost of maintaining a GAC system.

C. Map
The existing water treatment plant (WTP) is shown in figures and photos in Appendix B. The new water treatment plant will be constructed on the existing JCWU property/WTP site.

D. Environmental Impacts
The proposed improvements will be completed at property previously disturbed for existing utilities and facilities construction. No wetlands or historic resources will be impacted. No negative impacts are expected. The existing water treatment facility is located within the 1% Flood Hazard Area. All recent buildings are constructed with a finished floor elevation at least three (3) feet above the 100-year flood elevation. The proposed new facilities will be constructed above the flood hazard elevation.

E. Land Requirements
The Utility owns the property. All improvements shall be located on the existing JCWU property.

F. Potential Construction Problems
There will be critical coordination efforts required during construction to maintain the ongoing water treatment operations while constructing the new plant.

G. Sustainability Consideration
   a. Water and Energy Efficiency
   A major drawback of the CCRO treatment process is the significant reject waste stream generated. There is approximately 10% reject from the CCRO process. Based on the 3.0 MGD design flow. The CCRO reject water to waste would be approximately 330,000 gpd, with highly concentrated PFAS levels. While there are no limits currently for PFAS in NPDES permitting, it is likely to be implemented in the future. To discharge CCRO reject water to a receiving stream, removal of PFAS will likely be required. Granular Activated Carbon is proposed to treat CCRO reject water so it can be discharged to the White River. A NPDES permit would be required.

   CCRO is an energy intensive technology as continuous pumping is required to maintain pressure through CCRO membranes.

   b. Green infrastructure
   The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

Dupont Water Solutions provided a preliminary design for the UF and CCRO Treatment System. See preliminary design information in Appendix B. The following table provides estimated chemical costs based on 3.0 MGD average daily water treatment. The tables

below also provide an estimate of power costs for operation of the CCRO Equipment at 3.0 MGD.

The preliminary cost of chemicals for CCRO operation is approximately $24,000 plus caustic costs which are not yet quantified. The CCRO treatment also required re-mineralization of the finished water. Calcium carbonate will need to be added to finished water at approximately 60 ppm, but this cost is not yet determined. These chemical costs do not include chlorine and fluoride which are part of their normal chemical feed.

Table 3.1.3: Chemical Costs for CCRO

CCRO				
Chemical	**Function**	**Usage (lbs/year)**	**$/lb**	**$/year**
Antiscalant pre-CCRO to maximize recovery %	Antiscalant	5,990	$2.00	$11,980
Citric Acid, $C_6H_8O_7$	CCRO cleaning every 90 days with Citric Acid + Caustic	TBD	TBD	$12,035
Caustic, NaOH	See above	TBD	TBD	TBD
Post-CCRO Mineral Addition with $CaCO_3$	Stabilization	TBD	TBD	TBD
Estimated Chemical Costs for 1 year @ 3.0 MGD Average Daily Pumpage (1,095,000x1,000 gal/year)			$178,765/year =$0.16/1,000 gallons	

Table 3.1.4: Energy Costs for CCRO

Source	Approx. kWh/day	$/kWh	Approx. $/year
CCRO			
Feed Pumps, Circulation Pumps, CIP Tank Heater, and CIP Pumps	2,957	$0.1333	$143,856
Estimated Energy Costs for 1 year @ 3.0 MGD Average Daily Pumpage (1,095,000x1,000 gal/year			$143,856/year $0.13 per 1,000 gallons

Table 3.1.5: CCRO Reject/Waste Volume

Source	GPD	Gallons/Year	Waste Management
CCRO			
Concentrate (Waste) Flow, 4-10% of Feed Flow	330,000 GPD (230 GPM)	120,450,000	GAC System to Treat CCRO Concentrate NPDES Permit Required

ALTERNATIVE 1B: PROPOSED WATER TREATMENT PLANT TO PROVIDE PFAS REMOVAL – ULTRA FILTRATION + CCRO

A. Description

This alternative includes CCRO for PFAS removal. Pre-treatment removal of Iron and Manganese would be accomplished with Ultra Filtration. The proposed project would be

constructed on the same site as the existing water treatment facility. This would be a new treatment plant and would not utilize the existing water treatment plant facility.

B. Design Criteria

Design criteria is to remove iron, manganese, hardness and PFAS. See preliminary design criteria for Alternative 1B and Preliminary Schematic for Ultra Filtration with Reverse Osmosis in Appendix B.

The proposed design flow for the new plant is recommended to be 3.0 MGD average design 4.0 MGD peak design. The design is recommended to be planned for expandability to facilitate future upgrades. The design requirements for this alternative are the same as for 1A, see Table 3.1.2.

A major drawback of the UF-CCRO treatment process is the significant rejection of waste streams generated. There is approximately 10% reject water from the Ultra Filtration, then an additional 10% reject from the CCRO process. Based on the 3.0 MGD design flow, the UF waste volume would be 320,000 gpd. The UF water could be recycled for treatment but would require a large storage tank. The design preference is to discharge the UF reject water to the White River with an NPDES permit.

A UF pre-treatment system would ensure consistently high-quality feed water to the CCRO system, which could reduce scaling, increase the recovery percentage, and extend membrane life of a CCRO system. The recovery rate of the CCRO system is determined by the scaling characteristics of the pretreated feed water.

The CCRO reject water to waste would be approximately 330,000 gpd, with highly concentrated PFAS levels. While there are no limits currently for PFAS in NPDES permitting, it is likely to be implemented in the future. In order to discharge CCRO reject water, removal of PFAS will likely be required.

Table 3.1.6 provides a summary of the water balance through treatment. 3.65 MG Raw Water is required to produce 3.0 MG of finished water.

Table 3.1.6: Preliminary Water Balance for Ultra Filtration and CCRO

Raw Water from Wells	UF Waste	UF Permeate to CCRO	CCRO Reject	Finished Water
(gpd)	(gpd)	(gpd)	(gpd)	(gpd)
2,420,000	220,000	2,200,000	220,000	2,000,000
3,650,000	**320,000**	**3,330,000**	**330,000**	**3,000,000**
4,830,000	390,000	4,440,000	440,000	4,000,000

This table demonstrates the significant waste streams from these treatment processes. At 3.0 MGD production, there is 650,000 gpd of reject water. The total reject water is

approximately 20% of the raw water pumpage. Wells will have to produce 20% more water than will be finished and discharged to the system.

This alternative will provide the same PFAS removal as described for Alternative 1A with CCRO Treatment. GAC is recommended for CCRO reject water with this alternative as well.

C. Map

The existing water treatment plant (WTP) is shown in figures and photos in Appendix B. The new water treatment plant will be constructed on the existing JCWU property/WTP site.

D. Environmental Impacts

The proposed improvements will be completed at property previously disturbed for existing utilities and facilities construction. No wetlands or historic resources will be impacted. No negative impacts are expected. The existing water treatment facility is located within the 1% Flood Hazard Area. All recent buildings are constructed with a finished floor elevation at least three (3) feet above the 100-year flood elevation. The proposed new facilities will be constructed above the flood hazard elevation.

E. Land Requirements

The Utility owns the property. All improvements shall be located on the existing JCWU property.

F. Potential Construction Problems

There will be critical coordination efforts required during construction to maintain the ongoing water treatment operations while constructing the new plant.

G. Sustainability Consideration

a. Water and Energy Efficiency

A major drawback of the UV+CCRO treatment process is the significant rejection waste stream generated. There is approximately 10% reject from both the UF and CCRO processes. Based on the 3.0 MGD design flow:

- UF reject water = 320,000± gpd of reject water, which may be able to discharge to the White River with a NPDES permit.
- CCRO reject water = 330,000± gpd, with highly concentrated PFAS levels. While there are no limits currently for PFAS in NPDES permitting, it is likely to be implemented in the future. In order to discharge CCRO reject water to a receiving stream, removal of PFAS will likely be required. Granular Activated Carbon is proposed to treat CCRO reject water so it can be discharged to the White River. A NPDES permit would be required.

CCRO and UF are energy intensive technologies as continuous pumping is required to maintain pressure through membranes.

The proposed project does not have any special efficiency benefits.

b. Green infrastructure
The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

Dupont Water Solutions provided a preliminary design for the UF and CCRO Treatment System. See preliminary design information in Appendix B. The following table provides estimated chemical costs based on 3.0 MGD average daily water treatment. Tables below also provide an estimate of power costs for operation of the UF and CCRO Equipment at 3.0 MGD.

The preliminary cost of chemicals is estimated to be approximately $200,000 per year for UF and CCRO ONLY. This does not include chlorine, fluoride, and the post re-mineralization chemicals.

Table 3.1.7: Chemical Costs

UF				
Chemical	**Function**	**Usage (gallons/year)**	**$/gallon**	**$/year**
50% Citric Acid, $C_6H_8O_7$	Citric Acid + Caustic to be used every 90 days for cleaning.	7,976	$17.35	$138,417
50% Sulfuric Acid or "Mineral Acid", H_2SO_4		50	$38.67	$1,933
Chlorine (Cl_2) Gas	Mineral Acid + Chlorine to be used every 30 days for brief cleaning due to Mn precipitation.	2,588	$0.60	$1,553
Sodium Bisulfite, $NaHSO_3$	Sodium Bisulfite to dechlorinate upstream of the CCRO system.	3,779	$3.40	$12,847
CCRO				
Chemical	**Function**	**Usage (lbs/year)**	**$/lbs**	**$/year**
Antiscalant pre-CCRO to maximize recovery %	Antiscalant	5,990	$2.00	$11,980
Citric Acid, $C_6H_8O_7$	CCRO cleaning every 90 days with Citric Acid + Caustic	TBD	TBD	$12,035
Caustic, NaOH	See above	TBD	TBD	TBD
Post-CCRO Mineral Addition with $CaCO_3$	Stabilization	TBD	TBD	TBD
Estimated Chemical Costs for 1 year @ 3.0 MGD Average Daily Pumpage (1,095,000x1,000 gal/year)			$178,765/year =$0.16/1,000 gallons	

Table 3.1.8: Energy Costs

Source	Approx. kWh/day	$/kWh	Approx. $/year
UF			
Feed Pumps	1,704	$0.1333	$82,908
Compressors	269	$0.1333	$13,089
CIP Heater	27	$0.1333	$1,314
CIP Pumps	6	$0.1333	$292
CCRO			
Feed Pumps, Circulation Pumps, CIP Tank Heater, and CIP Pumps	2,957	$0.1333	$143,856
Estimated Energy Costs for 1 year @ 3.0 MGD Average Daily Pumpage (1,095,000x1,000 gal/year		$241,459/year $0.13 per 1,000 gallons	

Table 3.1.9: UF & CCRO Reject/Waste Volume

Source	GPD	Gallons/Year	Waste Management
UF Cleaning Events			
Backwash (BW)	354,173	129,273,145	Backwash Lagoon + Discharge to River with NPDES Permit required
Maintenance Wash (MW)	32,904	12,009,960	Backwash Lagoon + Discharge to River with NPDES Permit required
Clean-in-place (CIP)	1,462	533,630	Backwash Lagoon + Discharge to River with NPDES Permit required
CCRO			
Concentrate (Waste) Flow, 4-10% of Feed Flow	330,000 GPD (230 GPM)	120,450,000	GAC System to Treat CCRO Concentrate Discharge to River with NPDES Permit

ALTERNATIVE 2: EXPAND CLEARWELL

A. Description

This alternative includes expansion of the existing 750,000-gallon clearwell (installed by Mid Atlantic Storage Systems in 2009) from 750,000 gallons to 1,000,000 gallons. This would provide JCWU more flexibility in operation of proposed new water treatment plant equipment. The extra storage provides flexibility to optimize run times of equipment.

B. Design Criteria

The existing 62' diameter x 34' high 750,000-gallon clearwell with 598.0 high water level (HWL) does not provide sufficient storage. The tank was originally designed for future expansion to 1 MG. The proposed project expansion would consist of adding three rings of

panels to increase the tank height to 47' and HWL of 611.0, with volume of 1,050,000 gallons. The 16" aluminum overflow to the base of the tank and the access ladder would also be extended. A new sidewall panel and manway assembly would be installed. The existing 16" ductile iron riser pipe would remain as is. Installation of a mixer in this tank is included in this alternative. Mixing will improve disinfection and prevent thermal stratification in the tank.

C. Map
The location of the existing clearwell is shown in figures in Appendix B.

D. Environmental Impacts
See Figures 5.1.1-5.1.4 in Appendix B. The proposed improvements will be to the existing tank. No wetlands or historic resources will be impacted. No negative impacts are expected. The tank will be modified on the existing foundation, which is at a height above the 100-year flood elevation. No fill is required or impact to the 1% Flood Hazard Area.

E. Land Requirements
The Utility owns the property as well as the existing clearwell. No additional footprint would be required to modify the height of the clearwell.

F. Potential Construction Problems
Temporary traffic control may be necessary.

G. Sustainability Consideration
   a. Water and Energy Efficiency
   The proposed project does not have any special efficiency benefits.
   b. Green infrastructure
   The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

ALTERNATIVE 3 REVISED: 6 NEW WATER SUPPLY WELLS[3]

A. Description
The existing well field, located adjacent to the water treatment plant building, is bordered by the East Fork of White River to the west and north. The proposed project would add six (6) additional wells on the property owned by the Utility. A hydrogeological study is currently underway to test proposed well locations thought to be located outside of the existing plume of PFAS contamination. Due to funding constraints, the construction of new wells is proposed as the first of two phases, with PFAS removal treatment based on Alternatives 1A and 1B occurring in the second phase. Additional information is included in Appendix B.

[3] Revised July 2024; Alternative 3 revised to 6 proposed wells.

B. Design Criteria
Six (6) new wells are proposed with a pumping rate of 500 gpm each. This is a total capacity of 1,500 gpm. Tubular gravel pack wells are proposed. Depth is approximately 90 feet. Each well shall have an access platform elevated to a minimum of 3'-0" above the 100-year flood elevation.

C. Map
The location of the existing well field is shown in figures in Appendix B.

D. Environmental Impacts
See Figures 5.1.1-5.1.4 in Appendix B. The proposed improvements will be completed in the existing well field on property not previously disturbed. No wetlands or historic resources will be impacted. No negative impacts are expected. This is in the floodplain, like other wells.

E. Land Requirements
The Utility owns some well field property. Additional well field property is desirable to move farther away from the contamination plume. JCWU proposes to seek test well drilling and possible land acquisition on adjacent property to the north of their existing well field property.

F. Potential Construction Problems
Seasonal conditions and potential flooding are complications for construction of new wells.

G. Sustainability Consideration
   a. Water and Energy Efficiency
   The proposed project does not have any special efficiency benefits. New wells will be equipped with VFDs for energy efficiency and operational control.
   b. Green infrastructure
   The proposed project does not include any green infrastructure.

H. Cost Estimates
The revised preliminary opinion of probable construction cost is included in Appendix B.

3.2 Distribution System – Booster Station Alternatives

Alternative 4: Lubker Booster Station Replacement

A. Description
This below-grade booster station, which pumps to the Crane Hill Standpipe, needs to be replaced with an above-grade version.

B. Design Criteria
A new booster station site will be required at the site of the existing booster station.

The Booster Station currently pumps to the Crane Hill Tank, which is in the same pressure network as the Chestnut Ridge Tank.

Booster Station Design Conditions:

- Discharge Water Main Size = 4"
- Length of Water Main from B.S. to Crane Hill Tank = 10,200 L.F.
- Max Pumping Rate = 100 gpm
- Friction Loss at 10 gpm = 56.4feet
- Elevation Lift:
  - Booster Station Ground Elevation = 654'
  - Suction Pressure at Booster Station = 40 psi (Brownstown Tank HWL 750)
  - High Water Level of Crane Hill Tank = 800'
- Total Dynamic Head = Friction Loss + Elevation Lift = 50' + 56.4' = 106.4'
- Pump Condition TDH = 106.4 = 46 psi
- Inlet Pressure: 40 psi
- Outlet Pressure: 86 psi
- Electrical Service: 240V/ 3 Ph./60 Hz

C. Map
The location of the existing booster is shown in figures in Appendix B.

D. Environmental Impacts
See Figures 5.2.1-5.2.4 in Appendix B. The proposed improvements will be completed on property previously disturbed for existing utilities and facilities construction. If any land will be impacted that is believed to be previously undisturbed, it will be included in the archaeological investigation. No floodplains, wetlands or historic resources will be impacted. No negative impacts are expected.

E. Land Requirements
The small booster will be constructed at the existing site. No additional land is required.

F. Potential Construction Problems
There are no known potential construction problems.

G. Sustainability Consideration
   a. Water and Energy Efficiency
   The proposed project does not have any special efficiency benefits.
   b. Green infrastructure
   The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

ALTERNATIVE 5: GORBETTS CHAPEL BOOSTER STATION REPLACEMENT

A. Description
This below-grade booster station needs to be replaced with an above-grade version. This booster station needs a new generator.

B. Design Criteria
The new booster station shall be designed as a constant pressure station with VFD pump controls. Booster Station Design Conditions:

- Discharge Water Main Size = 3"
- Max Pumping Rate = 40 gpm

- Total Dynamic Head:
  - Booster Station Ground Elevation = 707'
  - Suction Pressure at Booster Station = 80 psi
  - Hydraulic Grade Line on Suction Side of B.S. = 707' + (80*2.31) = 891'
  - Discharge Pressure = 170 psi
  - TDH = (170-80) X 2.31 = 208 feet
- Total Dynamic Head = Friction Loss + Elevation Lift = 208
- Pump Condition = 40 gpm @ 208' TDH, discharge pressure = 170 psi
- Electrical Service: 240 V/ 1 Ph.
- Generator: 50 kW with Service Entrance Rated Transfer Switch

C. Map
The location of the existing booster station is shown in figures in Appendix B.

D. Environmental Impacts
See Figures 5.3.1-5.3.4 in Appendix B. Note: The proposed improvements may not be able to be constructed at the current site. An archaeological investigation will be conducted if this booster station is moved to a new site, previously undisturbed. No floodplains, wetlands, or historic resources will be impacted at the current site; however, the final location for the new booster is being confirmed. No negative impacts are expected. This section will be revised once the location is finally determined.

E. Land Requirements
The proposed booster station may need to be moved to a nearby location. Evaluation of the current property and adjacent or nearby property is underway.

F. Potential Construction Problems
Temporary traffic control may be necessary. Access to the site may require a temporary road and parking area.

G. Sustainability Consideration
   a. Water and Energy Efficiency
   The proposed project does not have any special efficiency benefits.
   b. Green infrastructure
   The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

ALTERNATIVE 6: GENERATORS FOR BOOSTER STATIONS

A. Description
This alternative consists of adding generators for the two (2) booster stations that need them: Kentucky Avenue and Persimmon Lake. Each location requires additional ancillary equipment as described below.

Kentucky Avenue Booster Station:

The Kentucky Avenue Booster Station requires a generator and an automatic transfer switch. The booster station pumps and equipment are in good condition and do not need to

be replaced. JCWU would also like to add a security camera and perimeter fencing at this booster station.

Persimmon Lake Booster Station:

The Persimmon Lake Booster Station requires a generator and automatic transfer switch. The pumps and equipment in this booster station are in similarly good condition and do not need to be replaced.

B. Design Criteria

Kentucky Avenue Booster Station:

50 kW Generator with Service Entrance Rated Transfer Switch

Persimmon Lake Booster Station:

50 kW Generator with Service Entrance Rated Transfer Switch

C. Map

The locations of the referenced booster stations are shown in figures in Appendix B.

D. Environmental Impacts

See Figures 5.4.1-5.4.8 in Appendix B. The proposed improvements will be at the existing booster stations on property previously disturbed for existing utilities and facilities construction. No floodplains, wetlands, or historic resources will be impacted. No negative impacts are expected.

E. Land Requirements

The Utility owns the property where the Kentucky Avenue Booster Station is located. The Persimmon Lakes Booster Station is located on ground owned by the HOA. Some additional easements may be necessary for long-term access improvements to both lift stations.

F. Potential Construction Problems

Temporary traffic control may be necessary.

G. Sustainability Consideration

a. Water and Energy Efficiency

The proposed project does not have any special efficiency benefits.

b. Green infrastructure

The proposed project does not include any green infrastructure.

H. Cost Estimates

The preliminary opinion of probable construction cost is included in Appendix B.

3.3 Distribution System – Storage Alternatives

Alternative 7: Installation of Tank Mixers at Existing Storage Tanks

A. Description

None of the eight (8) existing water storage tanks currently include tank mixers. Tank mixing is relatively new as a standard technology, but has become standard for new standpipes and preferred for elevated storage tanks.

B. Design Criteria
The project will include the installation of a mixing system in each tank. Tank mixing inhibits thermal stratification and promotes uniform water age throughout the storage volume. Tank mixing thereby ensures a uniform chlorine residual, minimizes the potential for high trihalomethane (TTHM) levels, and prevents the development of ice shards that could potentially scratch interior paint.

C. Map
The existing storage tanks are shown in figure 3.7 in Appendix B.

D. Environmental Impacts
See Figure 3.7 in Appendix B. The proposed improvements will be installed in existing tanks. There will be no impacts to environmental resources. No floodplains, wetlands, or historic resources will be impacted. No negative impacts are expected.

E. Land Requirements
The Utility controls each storage tank property.

F. Potential Construction Problems
No potential construction problems are known at this time.

G. Sustainability Consideration
   c. Water and Energy Efficiency
   The proposed project does not have any special efficiency benefits.
   d. Green infrastructure
   The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

3.4 Distribution System – Water Main Alternatives

Alternative 8: Water Main Loop & Replacement: CR 100 E. and CR 875 N

A. Description
There is an existing 8" PVC water main on CR 875 North that has become exposed at the creek crossing (Tributary to White Creek) due to erosion. If this main is taken out of service due to a storm, or spontaneous failure, many people will be without service for a significant period of time. This water main must be replaced.

Additionally, there is an existing dead-end 3" water main along CR 100 East that extends from CR 800 North to a hydrant near a driveway. 4,000 feet of new 6" PVC water main needs to be constructed along CR 100 East north to CR 875 North that will serve to loop the water mains in this area, providing improved service and reliability for these customers.

B. Design Criteria
Replace 900 linear feet of water main at creek crossing with 8" HDPE water main to be installed by horizontal directional drilling (HDD). Construct 4,000 L.F. of 6" PVC water main along CR 100 East, from CR 800 North to CR 875 North.

C. Map
The locations of the proposed water main installation are shown in figures in Appendix B.

D. Environmental Impacts
See Figures 5.5.1-5.5.4 in Appendix B. The proposed improvements will impact land possibly previously undisturbed. An archaeological investigation will be completed. Stream crossings will be constructed via HDD. No floodplains, wetlands, or historic resources will be impacted. No negative impacts are expected.

E. Land Requirements
Easements may be necessary.

F. Potential Construction Problems
Temporary traffic control may be necessary.

G. Sustainability Consideration
a. Water and Energy Efficiency
The proposed project does not have any special efficiency benefits.
b. Green infrastructure
The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

ALTERNATIVE 9: WATER MAIN LOOP AT CR 400 NORTH

A. Description
This alternative proposes to eliminate a problematic 3-inch dead-end water main by adding looping. This will help maintain the water supply to customers served by this section of water main in the event of a main break.

B. Design Criteria
Proposed 3,500 L.F. of 4" PVC water main along CR 400 North. Connect to existing 8" PVC water main on CR 1100 West, and 400 North. A cut-in tee with valves in all directions and an additional hydrant will be installed on the west side of the road. This will eliminate the existing dead-end 3-inch water main. Installation in this area will likely be through rock.

C. Map
The location of the proposed water main route is shown in figures in Appendix B.

D. Environmental Impacts
See Figures 5.6.1-5.6.4 in Appendix B. The proposed improvements will impact land possibly previously undisturbed. An archaeological investigation will be completed. Stream crossings will be constructed via HDD. No floodplains, wetlands, or historic resources will be impacted. No negative impacts are expected.

E. Land Requirements
Easements may be necessary.

F. Potential Construction Problems
Temporary traffic control may be necessary. Installation in this area will likely be through rock.

G. Sustainability Consideration
   a. Water and Energy Efficiency
   The proposed project does not have any special efficiency benefits.
   b. Green infrastructure
   The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

ALTERNATIVE 10: WATER MAIN EXTENSION AND LOOP AT CR 400 N, I-65 & US 231

A. Description
This project will install a new directional drilled transmission main under I-65, with loop connection to dead-end main on US 231. This water main will provide looping to serve the east side of I-65.

A proposed 150-lot subdivision is to be located south of E. CR 400 N, bordered by I-65 to the west and US 31 to the east, and will also benefit from this loop.

B. Design Criteria
Install approximately 7,200 L.F of proposed directional drilled 8-inch water main.

C. Map
The location of the proposed water main route is shown in figures in Appendix B.

D. Environmental Impacts
See Figures 5.7.1-5.7.4 in Appendix B. The proposed improvements will impact land possibly previously undisturbed. An archaeological investigation will be completed. Stream crossings will be constructed via HDD. No floodplains, wetlands, or historic resources will be impacted. No negative impacts are expected.

E. Land Requirements
Easements may be necessary.

F. Potential Construction Problems
Temporary traffic control may be necessary.

G. Sustainability Consideration
   a. Water and Energy Efficiency
   The proposed project does not have any special efficiency benefits.
   b. Green infrastructure
   The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

ALTERNATIVE 11: WATER MAIN LOOP AT BASE ROAD & SR 258

A. Description
This alternative proposes to eliminate two (2) dead-end mains by installing a new water main loop.

B. Design Criteria
Install approximately 4,500 L.F. of 4" water main along Base Road between CR 600 North and SR 258 to eliminate two dead end mains.

C. Map
The location of the proposed water main is shown in figures in Appendix B.

D. Environmental Impacts
See Figures 5.8.1-5.8.4 in Appendix B. The proposed improvements will impact land possibly previously undisturbed. An archaeological investigation will be completed. Stream crossings will be constructed via HDD. No floodplains, wetlands, or historic resources will be impacted. No negative impacts are expected.

E. Land Requirements
Easements may be necessary.

F. Potential Construction Problems
Temporary traffic control may be necessary.

G. Sustainability Consideration
   a. Water and Energy Efficiency
   The proposed project does not have any special efficiency benefits.
   b. Green infrastructure
   The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

ALTERNATIVE 12: WATER MAIN REPLACEMENT AT CR 225 W & CR 400 N.

A. Description
This existing 8" water main is the source of frequent water main leaks. The existing water main needs to be replaced.

B. Design Criteria
Another water main along CR 275 West was replaced, therefore, the construction of a 6" water main provides sufficient capacity to serve this area. This alternative includes the construction of 9,200 L.F. of proposed 6" water main.

C. Map
The location of the existing and proposed water main is shown in figures in Appendix B.

D. Environmental Impacts
See Figures 5.9.1-5.9.4 in Appendix B. The proposed improvements will impact land possibly previously undisturbed. An archaeological investigation will be completed. Stream crossings will be constructed via HDD. No floodplains, wetlands, or historic resources will be impacted. No negative impacts are expected.

E. Land Requirements
The water main will be constructed in the existing easement. Some additional easements may be necessary.

F. Potential Construction Problems
Temporary traffic control may be necessary. Access to the site may require a temporary road and parking area.

G. Sustainability Consideration
   a. Water and Energy Efficiency
   The proposed project does not have any special efficiency benefits.
   b. Green infrastructure
   The proposed project does not include any green infrastructure.

H. Cost Estimates
The preliminary opinion of probable construction cost is included in Appendix B.

3.5 REGIONALIZATION ALTERNATIVE

JCWU's service area is bordered by Indiana-American Water (Seymour), Brown County Water, Jennings Water Utility, and the towns of Crothersville and Medora. JCWU purchases water from Indiana-American and Crothersville and has an agreement for emergency service with Jennings Water. JCWU further has an emergency connection to provide water to Medora.

JCWU has valuable partnerships with neighboring regional water utilities to supply/purchase water (Jennings Water, Brown County Water, and IAW). These interconnections are beneficial for all the utilities as they work to serve the needs area. Jackson County Water Utility is extremely well organized and financially responsible. **Regionalization in terms of JCWU becoming part of another water utility is not recommended.** JCWU serves its customers well and is a stable, reliable, and financially sound local provider of drinking water.

3.6 NET PRESENT WORTH ANALYSIS

The net present worth analysis will be completed once further design is complete for the water plant project and O&M costs are further understood.

Distribution system projects have the similar O&M costs, although booster tanks and storage tanks may have slightly higher electrical costs. The new water mains will have similar O&M to existing and JCWU should have fewer maintenance requirements once old mains are replaced with new.

CHAPTER 4: PROPOSED PROJECT

4.1 GENERAL

The proposed water system improvements project consists of the following recommended alternatives:

Phase I:[1]

- Alternative 3 Revised: New Water Supply Wells

Future Phase II

- Alternatives 1A & 1B: Proposed Water Treatment Plant to Provide PFAS Removal
- Alternative 2: Clearwell Tank Expansion

Future Phase

- Alternative 4: Lubker Booster Station Replacement
- Alternative 5: Gorbetts Chapel Booster Station Replacement
- Alternative 6: Generators for Booster Stations (Kentucky Avenue & Persimmon Lake)
- Alternative 7: Installation of Tank Mixers at Existing Storage Tanks
- Alternative 8: Water Main Loop & Replacement: CR 100 E. and CR 875 N
- Alternative 9: Water Main Loop at CR 400 North
- Alternative 10: Water Main Extension and Loop at CR 400 N, I-65 & US 231
- Alternative 11: Water Main Loop at Base Road & SR 258
- Alternative 12: Water Main Replacement at CR 225 W & CR 400 N.

4.2 PRELIMINARY PROJECT DESIGN

4.2.1 New Water Supply Wells

Construct six (6)[2] new wells each rated for 500 gpm. These wells provide a supplemental water supply and with the objective of better water quality, with low or no PFAS contamination.

The project details are included in Chapter 3 cost estimates for the proposed project included in Appendix B.

---

[1] Revised July 2024 – Proposed PFAS treatment moved to Phase 2. Revised Alternative 3 increases well quantity from 3 to 6. Other alternatives moved to future phase.

[2] Revised July 2024, Increased well quantity.

4.3 PROJECT SCHEDULE

A preliminary project schedule is provided in Table 4.3.1.

Table 4.3.1: Project Schedule

Project Component	Anticipated Date
Submission of PER to SRF	March 2024
Public Hearing for PER	May 2024
Begin Engineering Design	June-July 2024
IURC Filing	June 2024
Completion of Environmental Review	October 2024
Funding Agency PER Approval	November 2024
Submit Permit Application to IDEM	December 2024
Receive IDEM Construction Permits	January 2025
Advertise for Bids & FEDC Submittal to SRF	May 2025
Receive Bids	June 2025
IURC Approval	July 2025
Close Loan	August 2025[3]
Contract Award	August-September 2025
Begin Construction	September-October 2025
Complete Construction	February 2027

4.4 PERMIT REQUIREMENTS

The proposed project will require a construction permit from the IDEM Drinking Water Branch. An IDEM Rule 5 permit will additionally be required for soil erosion control. An INDOT permit shall be required for construction in right-of-way.

4.5 SUSTAINABILITY CONSIDERATIONS

4.5.1 Water and Energy Efficiency

The proposed water system improvements will provide safe drinking water, reduce lost water, and provide for long-term maintenance needs of the water system. These efforts serve to improve water efficiency, reduce maintenance costs, and improve water quality. The proposed project will not impact energy efficiency.

[3] Revised July 2024, Schedule updated

4.5.2 Green Project Reserve

The proposed project does not include any green infrastructure initiatives at this time.

4.5.3 Utility Operations

The Utility currently has dedicated staff which maintains the system.

Water treatment plant operators and utility staff shall receive training on all new equipment installed. The proposed CCRO equipment is different from anything they have used before and extra training shall be provided to educate staff on operations and maintenance of the membranes and overall equipment.

4.6 TOTAL PROJECT COST ESTIMATE

Table 4.6.1 provides a detailed summary of costs. This includes construction contingency funds and non-construction costs.

All costs are anticipated to be paid for through a loan/financing with the State Revolving Fund Loan Program.

Table 4.6.1a: Preliminary Opinion of Probable Construction Project Costs

Alternatives - Selected Plan	Cost[4]
Water Supply and Treatment Alternatives	
3 - New Water Supply Wells	$3,783,000.00
Estimated Construction Cost	***$3,783,000.00***
Construction Contingency (20%)	***$756,600.00***
Total Estimated Construction Cost with Contingency	***$4,539,600.00***

[4] Revised July 2024. Cost estimates revised to account for revisions to Alternative 3 scope and phasing of all other alternatives.

CHAPTER 6: PUBLIC PARTICIPATION AND LEGAL, FINANCIAL, AND MANAGERIAL CAPABILITY

6.1 PUBLIC PARTICIPATION

JCWU will hold a public hearing to discuss the project on June 6, 2024.[1] The PER will be available for public review 10 days prior to the hearing. Comments will be accepted at the hearing and for five (5) days afterward.

The following items will be included in Appendix C:

- Sign-in Sheet from hearing, including email addresses.
- Public hearing meeting minutes
- Written comments
- Email addresses for other local interested parties and local media outlets.

The following resolutions will be included at the end of this chapter following the public hearing to be held for this project:

- PER Acceptance Resolution
- Signatory Authorization Resolution

6.2 SRF FINANCING FORM

Included in Appendix C.

6.3 INTERLOCAL AGREEMENTS

The Jackson County Water Utility has a water purchase agreement in place with Indiana American Water (Seymour) to sell to Jackson County Water Utility, Inc. customers in the Reddington area. Jackson County Water Utility, Inc. also sells water to Brown County Water Utility and the Town of

[1] Revised, August 2024.

Crothersville Utilities, but has no formal agreements in place; these utilities buy what they use like any other Jackson County Water Utility, Inc. customer.

6.4 IURC PARTICIPATION

The Utility does belong to the Indiana Utility Regulatory Commission (IURC). The Utility is currently working on its filing for IURC approval. Approval is anticipated per the project schedule in Ch. 4.

6.5 REGIONAL MEETING PARTICIPATION

The JCWU last participated in a utility regional planning meeting on February 15, 2024 and will continue to attend regional planning meetings on an annual basis, pursuant to IC 5-1.2-11.5-6.

6.6 ASSET MANAGEMENT PLAN

The loan applicant's existing Asset Management Program (AMP) meets the requirements defined by the State Revolving Fund's AMP Guidelines, pursuant to IC 5-1.2-10-16. The completed AMP Certification form is included in Appendix C.

6.7 WATER LOSS AUDIT

JCWU's 2023 water loss audit was submitted in July, 2024.[2] Earlier water loss audits were already submitted.

6.8 LAND ACQUISITION

Easements may be required for the proposed projects. A new booster station site is being investigated for Gorbetts Chapel Booster Station Replacement.

6.9 DISADVANTAGED COMMUNITIES (DAC) MEMO

The JCWU DAC Memo is included in Appendix C.

[2] Revised, August 2024.

Table 4.6.1b: Preliminary Opinion of Probable Non-Construction and Total Project Costs[5]

Non-Construction Costs	
Engineering (Design, Bid & Contract Admin) (10%)	$455,000.00
Construction Observation (3%)	$136,000.00
Preliminary Engineering Report	$75,000.00
Surveying	$20,000.00
Hydrogeology, Modeling, and Test Wells	$72,000.00
Test Wells & 1 Production Test Well	$145,000.00
Legal (local)	$25,000.00
Legal - Bond Counsel	$60,000.00
Rate Consultant	$60,000.00
Archaeology and Wetland Investigation	$15,000.00
Rate Case Professional Fees	$250,000.00
Labor Standards	$20,000.00
Title Work	$15,000.00
SRF Financing Fees	$25,000.00
Land for New Well Field (Est 28.32 Acres @ $15,000/acre)	$360,000.00
Total Estimated Non-Construction Costs	***$1,733,000.00***
Preliminary Opinion of Probable Total Project Cost	***$6,272,600.00***

[5] Revised July 2024, Cost Estimates Revised according to project revisions

CHAPTER 5: EVALUATION OF ENVIRONMENTAL IMPACTS

5.1 GENERAL

Evaluation of the environmental impacts of the proposed construction project is an important step in identifying impacts on the surrounding community. The purpose of this chapter is to evaluate potential negative impacts induced by the proposed waterworks project.

See Figure 5.1 in Appendix B for an overall aerial view of project locations.

5.2 DISTURBED/UNDISTURBED LAND

The projects will take place on a mix of disturbed and undisturbed land. Direct impacts include the disturbance of a narrow strip of land to install the proposed water mains and area for installation of booster stations. An archaeological investigation will be completed for all water main alternatives where land was previously not disturbed for other utility installation. This includes looping locations, in particular, as these are likely previously undisturbed. If the Lubker and Gorbetts Chapel Booster Station replacement projects are deemed to be impacting land previously undisturbed, these will also be included in the archaeological investigation. The proposed new water supply wells and associated raw water main shall also be included for archaeological investigation.

No Formally Classified Lands are present in the project area and therefore none will be impacted by this project.

Table 5.2.1 Identifies the Proposed Projects and the Figures in Appendix B related to each project.

Table 5.2.1 Summary of Proposed Project Locations

Figures - Appendix B	Description	Civil Township & County	County	Township, Range & Section	USGS Quad Map Name(s)
5.1.1-5.1.4	Proposed Water Treatment Plant	Brownstown	Jackson	T5N R4E, Sec. 11	Brownstown
5.1.1-5.1.4	Clearwell Tank Expansion	Brownstown	Jackson	T5N R4E, Sec. 11	Brownstown
5.1.1-5.1.4	New Water Supply Wells	Brownstown	Jackson	T5N R4E, Sec. 10-11	Brownstown
5.2.1-5.2.4	Lubker Booster Station Replacement	Brownstown	Jackson	T5N R4E, Sec. 12	Brownstown
5.3.1-5.3.4	Gorbetts Chapel Booster Station Replacement	Pershing	Jackson	T6N R3E, Sec. 11	Kurtz
5.4.1-5.4.4	Booster Station Generators: Persimmon Lakes	Hamilton	Jackson	T6N R4E, Sec. 3	Brownstown
5.4.5-5.4.8	Booster Station Generators: Kentucky Avenue	Pershing	Jackson	T7N R4E, Sec. 17	Waymansville
5.1	Installation of Tank Mixers at Existing Storage Tanks • Brownstown Elevated Tank • Brownstown Standpipe • Clearspring Elevated Tank • Freetown Standpipe • Acme Standpipe • Crane Hill Standpipe • Chestnut Ridge Standpipe • Vallonia Tank	 Brownstown Brownstown Owen Pershing Hamilton Brownstown Washington Driftwood	Jackson	 T5N R4E, Sec. 14 T5N R4E, Sec. 11 T5N R3E, Sec. 10 T7N R3E, Sec. 23 T7N R4E, Sec. 35 T5N R5E, Sec. 5 T5N R6E, Sec. 8 T5N R4E, Sec. 28	 Brownstown Brownstown Kurtz Story Brownstown Seymour Seymour Vallonia
5.5.1-5.5.4	N. County Road 100 E. New Water Main	Hamilton	Jackson	T7N R5E, Sec. 36	Brownstown, Waymansville
5.6.1-5.6.4	W. County Road 400 N. New Water Main	Owen	Jackson	T6N R3E, Sec. 30	Kurtz
5.7.1-5.7.4	Interstate Hwy 65 & US 31 New Water Main	Jackson	Jackson	T6N R6E, Sec. 22 & 27	Chestnut Ridge
5.8.1-5.8.4	Base Road New Water Main	Hamilton	Jackson	T6N R4E, Sec. 12	Brownstown
5.9.1-5.9.4	N. County Road 225 W. Water Main Replacement	Brownstown	Jackson	T6N R4E, Sec. 16 & 21	Brownstown

5.3 HISTORICAL AND ARCHITECTURAL RESOURCES

The Indiana Historic Buildings, Bridges, and Cemeteries Map was reviewed to determine potential impacts to historical and architectural sites. Maps in Appendix B show the proposed alternatives in relation to historic structures. There are historic resources near project locations; however, no impacts are anticipated. All work is proposed to take place within the footprint of existing utilities and in easement and road right-of-way areas.

5.4 WETLANDS

Maps in Appendix B show the proposed alternatives in relation to wetlands. Any construction near wetlands will be conducted via horizontal directional drilling (HDD). Measures such as silt fencing and straw wattles will be utilized to avoid impacts to wetlands if deemed necessary. Mitigation measures to lessen and compensate for wetland impacts cited in comment letters from the Indiana Department of Natural Resources (IDNR) and the U.S. Fish and Wildlife Service (USFWS) will be implemented.

5.5 SURFACE WATERS

The proposed projects are shown with floodplains, wetlands, and stream crossings in Appendix B. Stream crossings will be conducted via HDD. All comments from the USFWS and IDNR regarding these stream crossings will be incorporated into the construction plans.

The construction of these proposed projects will not adversely affect waters of Limited Use or Outstanding State Resource Waters listed in 327 IAC 2-1.5-19, Limited or Exceptional Use Waters listed in 327 IAC 2-1-11, Natural, Scenic and Recreational Rivers and Streams listed in 312 IAC 7-2, Salmonid Waters listed in 327 IAC 2-1.5-5(a)(3), or the Natural Resource Commission's Outstanding Rivers List for Indiana per Information Bulletin #4 (16 IR 1677).

5.6 100-YEAR FLOODPLAIN AND FLOODWAY

The proposed projects are shown with floodplains, wetlands, and stream crossings in Appendix B. The proposed rehabilitation work will not involve dredging or filling and will not adversely affect floodplain and floodway areas. Construction in a Floodway permits will be obtained, if required.

5.7 GROUNDWATER

The proposed project will not affect groundwater. Dewatering is not expected. The project will not impact a sole source aquifer.

5.8 PLANTS AND ANIMALS

Tree removal is not expected. The project will be implemented to minimize impact to non-endangered species and their habitat. The USFWS IPaC official species list and letter identifying no impact to the northern long eared bat is included in Appendix B.

Mitigation measures cited in comment letters from the IDNR and USFWS will be implemented.

5.9 PRIME FARMLAND AND GEOLOGY

The USDA Rural Development Natural Resource Conservation Service will be contacted to evaluate Prime Farmland. Erosion control mitigation measures will be implemented as required by necessary permits. The response from USDA will be provided in Appendix B when available.

5.10 AIR QUALITY

Mitigation measures to reduce noise, dust, and airborne contaminants will be implemented as required by necessary permits.

5.11 OPEN SPACE AND RECREATION OPPORTUNITIES

The construction and operation of the proposed project will neither create nor destroy open space or recreational opportunities.

5.12 LAKE MICHIGAN COASTAL PROGRAM

The proposed project will not affect the Lake Michigan Coastal Zone.

5.13 NATIONAL NATURAL LANDMARKS

The construction and operation of the proposed project will not affect National Natural Landmarks.

5.14 SECONDARY IMPACTS

JCWU, through local zoning laws, the authority of its council or planning commission, or other means, will ensure that future development and utility projects connecting to SRF-funded facilities will not adversely affect wetlands, wooded areas, steep slopes, archaeological/historical/structural resources, or other sensitive environmental resources. JCWU will require new development and utility projects to be constructed within the guidelines of the US Fish and Wildlife Service, Indiana Department of Natural Resources, Indiana Department of Environmental Management, and other environmental review authorities.

5.15 Mitigation Measures

Precautions shall be taken during construction to prevent erosion and sediment transport. Project plans shall include requirements for construction sequencing and both temporary and permanent erosion control measures. All disturbed areas shall be restored to their pre-construction condition. All vegetated land shall be permanently seeded and maintained as necessary until vegetation growth is established.

A Rule 5 permit is required through IDEM for Construction/Stormwater Pollution Prevention. This plan shall be approved by the Jackson County Soil and Water Conservation District and recommend for approval to IDEM. The county SWCD will routinely inspect the construction area to ensure that appropriate measures are taken to minimize erosion and sediment transport off-site. All mitigating measures recommended by reviewing authorities shall be implemented for this project.

CHAPTER 6: PUBLIC PARTICIPATION AND LEGAL, FINANCIAL, AND MANAGERIAL CAPABILITY

6.1 PUBLIC PARTICIPATION

JCWU will hold a public hearing to discuss the project on June 6, 2024.[1] The PER will be available for public review 10 days prior to the hearing. Comments will be accepted at the hearing and for five (5) days afterward.

The following items will be included in Appendix C:

- Sign-in Sheet from hearing, including email addresses.
- Public hearing meeting minutes
- Written comments
- Email addresses for other local interested parties and local media outlets.

The following resolutions will be included at the end of this chapter following the public hearing to be held for this project:

- PER Acceptance Resolution
- Signatory Authorization Resolution

6.2 SRF FINANCING FORM

Included in Appendix C.

6.3 INTERLOCAL AGREEMENTS

The Jackson County Water Utility has a water purchase agreement in place with Indiana American Water (Seymour) to sell to Jackson County Water Utility, Inc. customers in the Reddington area. Jackson County Water Utility, Inc. also sells water to Brown County Water Utility and the Town of

[1] Revised, August 2024.

Crothersville Utilities, but has no formal agreements in place; these utilities buy what they use like any other Jackson County Water Utility, Inc. customer.

6.4 IURC PARTICIPATION

The Utility does belong to the Indiana Utility Regulatory Commission (IURC). The Utility is currently working on its filing for IURC approval. Approval is anticipated per the project schedule in Ch. 4.

6.5 REGIONAL MEETING PARTICIPATION

The JCWU last participated in a utility regional planning meeting on February 15, 2024 and will continue to attend regional planning meetings on an annual basis, pursuant to IC 5-1.2-11.5-6.

6.6 ASSET MANAGEMENT PLAN

The loan applicant's existing Asset Management Program (AMP) meets the requirements defined by the State Revolving Fund's AMP Guidelines, pursuant to IC 5-1.2-10-16. The completed AMP Certification form is included in Appendix C.

6.7 WATER LOSS AUDIT

JCWU's 2023 water loss audit was submitted in July, 2024.[2] Earlier water loss audits were already submitted.

6.8 LAND ACQUISITION

Easements may be required for the proposed projects. A new booster station site is being investigated for Gorbetts Chapel Booster Station Replacement.

6.9 DISADVANTAGED COMMUNITIES (DAC) MEMO

The JCWU DAC Memo is included in Appendix C.

[2] Revised, August 2024.

Appendix A

Full testing results streamlined from this Appendix
but available upon request

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov
Eric J. Holcomb, *Governor*
Brian C. Rockensuess, *Commissioner*

8/17/2023

Mr. Bradley Wessel
Jackson County Water Utility
119 West Spring
Brownstown, IN 47220-0056

Re: PFAS Sampling Initiative Results
PWSID # IN5236003

Dear Bradley Wessel,

The Indiana Department of Environmental Management (IDEM) Drinking Water Branch, in collaboration with Pace Analytical, has received Per- and polyfluoroalkyl substances (PFAS) results for Jackson County Water Utility samples were collected by the system operator/staff to assist in completing the PFAS Sampling Initiative. Attached are the PFAS results for Jackson County Water Utility.

Entry points to the distribution system and/or source water locations were sampled on 6/20/2023 to assess the potential impact from PFAS. The samples were analyzed for 18 common PFAS compounds, which are listed in the attached analytical report. In June 2022, the U.S. EPA published an updated list with interim Lifetime Health Advisory Levels (HALs) for PFOA and PFOS, and established HALs for GenX and PFBS. The new HALs from the EPA are listed below, along with IDEM action levels for PFHxS and PFNA.

Chemical	Lifetime Health Advisory Level/Value (parts per trillion or ppt)	*Minimum Reporting Level (ppt)
PFOA	0.004 (Interim)	2
PFOS	0.02 (Interim)	2
GenX Chemicals	10 (Final)	2
PFBS	2,000 (Final)	2

**The Minimum Reporting Level is the smallest measured concentration of a substance that can be reliably measured by using a given laboratory analytical method.*

Chemical	IDEM Action Level (parts per trillion or ppt)
PFHxS	>140
PFNA	>21

For the samples collected on 6/20/2023, the drinking water samples that represented the finished treated water supplied to customers and residents reported detections of PFAS compounds at concentrations that are above the U.S. EPA's Health Advisory Level or IDEM Action Level. Resampling is needed to verify the results before action is needed. IDEM will contact you in the upcoming months to arrange resampling. Please see below for the specific detections.

Location	Analyte	Acronym	Results (ppt)	Exceeds HAL or Action Level?
GW001	Perfluorobutanesulfonic acid	PFBS	2.2	No
GW001	Perfluorohexanesulfonic acid	PFHxS	2.3	No
GW004	Perfluorobutanesulfonic acid	PFBS	2.5	No
GW003	Perfluorooctanoic acid	PFOA	2.5	Yes
GW004	Perfluorohexanoic acid	PFHxA	2.6	No
GW004	Perfluorohexanesulfonic acid	PFHxS	3.6	No
GW001	Perfluorooctanesulfonic acid	PFOS	6	Yes
GW004	Perfluoroheptanoic acid	PFHpA	6.3	No
EP001	Perfluorooctanesulfonic acid	PFOS	8.6	Yes
EP001	Perfluorooctanoic acid	PFOA	9.3	Yes
GW001	Perfluorooctanoic acid	PFOA	11	Yes
GW004	Perfluorooctanoic acid	PFOA	50.5	Yes
GW004	Perfluorooctanesulfonic acid	PFOS	61.1	Yes

Please see the laboratory report that was included with this letter as a PDF for additional details. For more information regarding PFAS and results reporting, please refer to https://www.in.gov/idem/pfas.

The Indiana State Revolving Fund (SRF) provides low-interest loans to Indiana communities for projects that improve drinking water infrastructure. Communities impacted by PFAS contaminated drinking water may qualify for grant funding through the Bipartisan Infrastructure Law (BIL) designed specifically for PFAS mitigation efforts. To find out how to access SRF funds, please visit in.gov/ifa/srf.

Thank you for your attention to this matter. If you have any questions regarding the PFAS Sampling Initiative, please contact Trisha Williams (twilliam@idem.in.gov).

Sincerely,

Matt Prater, Branch Chief
Drinking Water Branch
Office of Water Quality

ecc: Christian Walker, IDEM

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov
Eric J. Holcomb
Governor
Brian C. Rockensuess
Commissioner

12/5/2023

Mr. Bradley Wessel
Jackson County Water Utility
119 West Spring
Brownstown, IN 47220-0056

Re: PFAS Sampling Initiative Results
PWSID # IN5236003

Dear Bradley Wessel,

The Indiana Department of Environmental Management (IDEM) Drinking Water Branch, in collaboration with Pace Analytical, has received Per- and polyfluoroalkyl substances (PFAS) results for C Jackson County Water Utility. The samples were collected to assist in completing the PFAS Sampling Initiative. Attached are the PFAS results for Jackson County Water Utility.

Entry points to the distribution system and/or source water locations were sampled on 9/25/2023 to assess the potential impact from PFAS. The samples were analyzed for 18 common PFAS compounds, which are listed in the attached analytical report. In June 2022, the U.S. EPA published an updated list with interim Lifetime Health Advisory Levels (HALs) for PFOA and PFOS, and established HALs for GenX and PFBS. The new HALs from the EPA are listed below, along with IDEM action levels for PFHxS and PFNA.

Chemical	Lifetime Health Advisory Level/Value (parts per trillion or ppt)	*Minimum Reporting Level (ppt)
PFOA	0.004 (Interim)	2
PFOS	0.02 (Interim)	2
GenX Chemicals	10 (Final)	2
PFBS	2,000 (Final)	2

**The Minimum Reporting Level is the smallest measured concentration of a substance that can be reliably measured by using a given laboratory analytical method.*

Chemical	IDEM Action Level (parts per trillion or ppt)
PFHxS	>140
PFNA	>21

For the samples collected on 9/25/2023, the drinking water samples that represented the finished treated water supplied to customers and residents reported detections of PFAS compounds at concentrations that exceeded the U.S. EPA's Health Advisory Level or IDEM Action Level. Please see below for the specific detections.

Location	Analyte	Acronym	Results (ppt)	Exceeds HAL or Action Level?
WL001 5	Perfluorooctanoic acid	PFOA	13.0	Yes
WL001 5	Perfluorohexanesulfonic acid	PFHxS	2.2	No
WL004 4	Perfluorohexanesulfonic acid	PFHxS	2.3	No
TP001 EP	Perfluorooctanesulfonic acid	PFOS	3.3	No
WL004 4	Perfluorooctanesulfonic acid	PFOS	32.1	Yes
WL004 4	Perfluorooctanoic acid	PFOA	32.7	Yes
WL003 6	Perfluorooctanoic acid	PFOA	4.6	Yes
TP001 EP	Perfluorooctanoic acid	PFOA	5.5	Yes
WL001 5	Perfluorooctanesulfonic acid	PFOS	9.6	Yes

Please see the laboratory report that was included with this letter as a PDF for additional details. For more information regarding PFAS and results reporting, please refer to https://www.in.gov/idem/pfas.

The Indiana State Revolving Fund (SRF) provides low-interest loans to Indiana communities for projects that improve drinking water infrastructure. Communities impacted by PFAS contaminated drinking water may qualify for grant funding through the Bipartisan Infrastructure Law (BIL) designed specifically for PFAS mitigation efforts. To find out how to access SRF funds, please visit in.gov/ifa/srf.

Thank you for your attention to this matter. If you have any questions regarding the PFAS Sampling Initiative, please contact Trisha Williams (twilliam@idem.in.gov).

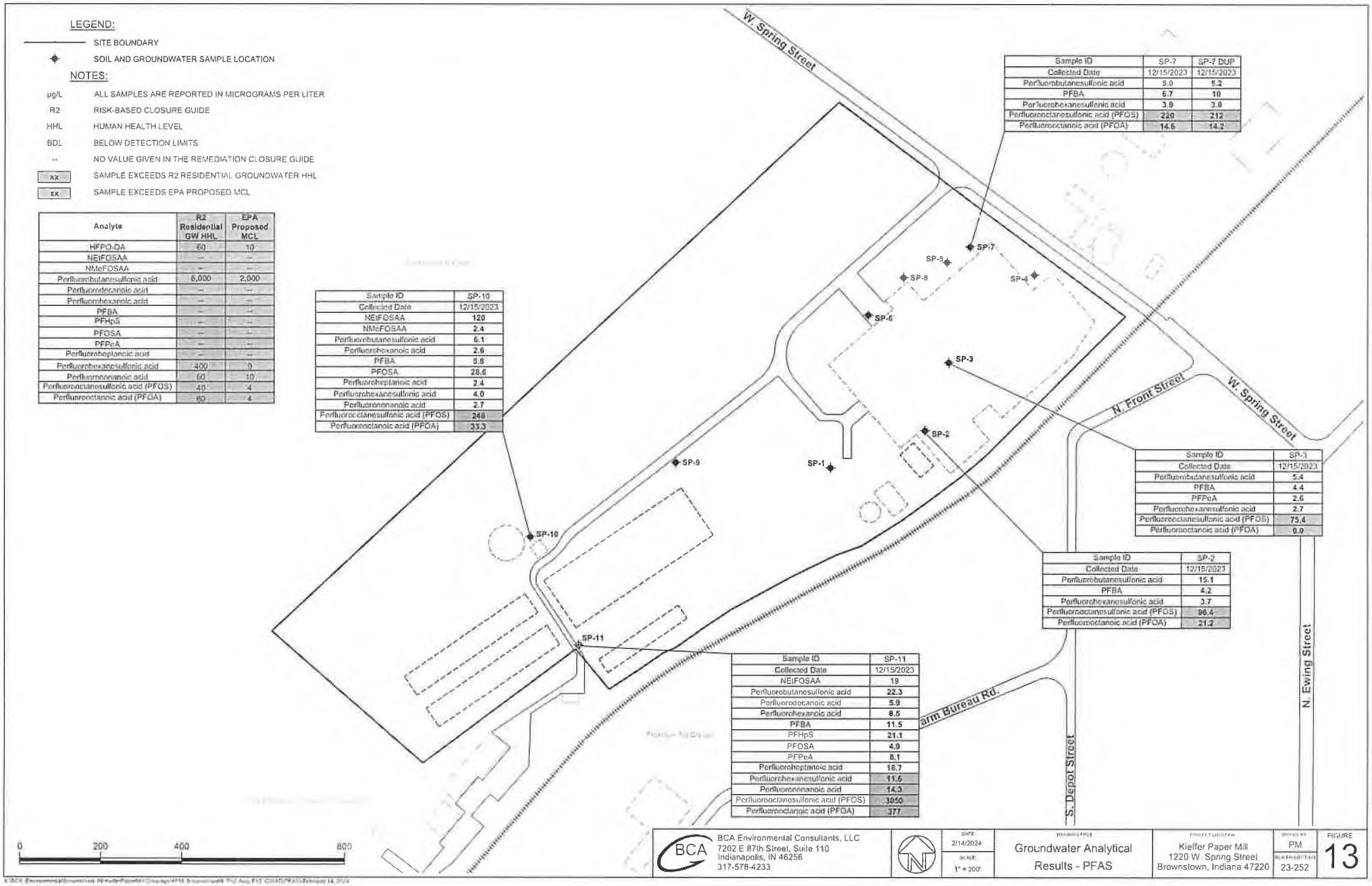
Sincerely,

Matt Prater, Branch Chief
Drinking Water Branch
Office of Water Quality

ecc: Christian Walker, cwalker1@idem.in.gov

PFAS Constituents Detected in JCWU Raw Water

Analyte	Analyte Characteristics .-Long Chain (older, Low Solubility/easier to treat) or Short Chain (newer, High solubility/harder to treat)? .-PFCA (weaker adsorption) or PFSA (stronger adsorption)?	Minimum Reporting Level (ppt) / Smallest Measurable Concentration	EPA HAL (ppt)	IDEM AL (ppt)	Well No. 4 (GW004) RED values exceed the EPA HAL and/or IDEM AL.	Well No. 5 (GW001) RED values exceed the EPA HAL and/or IDEM AL.	Well No. 6 (GW003) RED values exceed the EPA HAL and/or IDEM AL.	WTP (EP001)	Analyte
PFOA	.-Perfluorooctanoic acid, $F(CF_2)_7COOH$ or $C_7F_{15}CO_2H$.-Long Chain (8 Carbons) so persistent, bioaccumulative, and toxic, but long chain PFAS easier to remove than short chain. .-PFOA harder to remove than PFOS. .-Activated Carbon/GAC Treatment .-PFCA so weaker adsorption.	2	0.004 (interim)	NA	..Samples 6/20/2023: 50.5 ppt (Test Method EPA 537.1) ..Samples 9/25/2023: 32.7 ppt (Test Method EPA 537.1)	..Samples 6/20/2023: 11 ppt (Test Method EPA 537.1) ..Samples 9/25/2023: 13 ppt (Test Method EPA 537.1)	..Samples 6/20/2023: 2.5 ppt (Test Method EPA 537.1) ..Samples 9/25/2023: 4.6 ppt (Test Method EPA 537.1)	..Samples 6/20/2023: 9.3 ppt (Test Method EPA 537.1) ..Samples 9/25/2023: 5.5 ppt (Test Method EPA 537.1)	**PFOA**
PFOS	.-Perfluorooctanesulfonic acid / Perfluorooctane Sulfonate, $C_8F_{17}SO_3H$ **.-Long Chain (8 Carbons)** **.-PFSA so stronger adsorption. PFSAs have a greater tendency to bioaccumulate than a PFCA with same number C atoms.** ..Strong/polar covalent F-C bond. ...The polarity makes it water soluble.	2	0.02 (interim)	NA	..Samples 6/20/2023: 61.1 ppt (Test Method EPA 537.1) ..Samples 9/25/2023: 32.1 ppt (Test Method EPA 537.1)	..Samples 6/20/2023: 6 ppt (Test Method EPA 537.1) ..Samples 9/25/2023: 9.6 ppt (Test Method EPA 537.1)	NA	..Samples 6/20/2023: 8.6 ppt (Test Method EPA 537.1) ..Samples 9/25/2023: 3.3 ppt (Test Method EPA 537.1)	**PFOS**
Gen X Chemicals, HFPO-DA	.-GenX chemicals were developed as a replacement for PFOA.	2	10 (Final)	NA	NA	NA	NA	NA	**Gen X Chemicals, HFPO-DA**
PFHxS	.-Perfluorohexane sulfonic acid / Perfluorohexanoic acid .-$C_6F_{13}SO_3H$ **.-Short Chain (6 Carbons)** .-Short-chain PFAA so high-energy C-F bond, low adsorption potential, will not bind to particles, stay dissolved in water. PFHxS is removed about as well as PFOA. .- Ion Exchange (IX)	2	NA	>140	..Samples 6/20/2023: 3.6 ppt (Test Method EPA 537.1) ..Samples 9/25/2023: 2.3 ppt (Test Method EPA 537.1)	..Samples 6/20/2023: 2.3 ppt (Test Method EPA 537.1) ..Samples 9/25/2023: 2.2 ppt (Test Method EPA 537.1)	NA	NA	**PFHxS**
PFNA	.-Perfluorononanoic acid **.-Long Chain (9 Carbons)** **.-PFCA so weaker adsorption.**	2	NA	>21	NA	NA	NA	NA	**PFNA**
PFBS	.-Replacement for PFOS .-Perfluorobutane Sulfonic acid .-$C_4HF_9O_3S$ **.-Short Chain (4 Carbon)** so high mobility in soil and water. Final degradation products extremely persistent. .-Short-chain PFAA so high-energy C-F bond, low adsorption potential, will not bind to particles, stay dissolved in water. .-Ion Exchange (IX) is more effective with short-chain PFAS like PFBS and PFBA which are not removed by carbon-based adsorption processes. **.-PFSA (so stronger adsorption)**	2	2,000 (Final)	NA	..Samples 6/20/2023: 2.5 ppt (Test Method EPA 537.1)	..Samples 6/20/2023: 2.2 ppt (Test Method EPA 537.1)	NA	NA	**PFBS**
PFHpA	.-$C_6F_{13}COOH$ **.- PFCA so weaker adsorption.** **.-Short Chain (7 Carbons)**	NA	NA	NA	..Samples 6/20/2023: 6.3 ppt (Test Method EPA 537.1)	NA	NA	NA	**PFHpA**



Analyte	R2 Residential GW HHL	EPA Proposed MCL
HFPO-DA	60	10
NEtFOSAA	--	--
NMeFOSAA	--	--
Perfluorobutanesulfonic acid	6,000	2,000
Perfluorodecanoic acid	--	--
Perfluorohexanoic acid	--	--
PFBA	--	--
PFHpS	--	--
PFOSA	--	--
PFPeA	--	--
Perfluoroheptanoic acid	--	--
Perfluorohexanesulfonic acid	400	9
Perfluorononanoic acid	60	10
Perfluorooctanesulfonic acid (PFOS)	40	4
Perfluorooctanoic acid (PFOA)	60	4

Sample ID	SP-10
Collected Date	12/15/2023
NEtFOSAA	120
NMeFOSAA	2.4
Perfluorobutanesulfonic acid	6.1
Perfluorohexanoic acid	2.6
PFBA	5.8
PFOSA	28.6
Perfluoroheptanoic acid	2.4
Perfluorohexanesulfonic acid	4.0
Perfluorononanoic acid	2.7
Perfluorooctanesulfonic acid (PFOS)	248
Perfluorooctanoic acid (PFOA)	33.3

Sample ID	SP-7	SP-7 DUP
Collected Date	12/15/2023	12/15/2023
Perfluorobutanesulfonic acid	5.0	5.2
PFBA	6.7	10
Perfluorohexanesulfonic acid	3.9	3.0
Perfluorooctanesulfonic acid (PFOS)	220	212
Perfluorooctanoic acid (PFOA)	14.6	14.2

Sample ID	SP-1
Collected Date	12/15/2023
Perfluorobutanesulfonic acid	5.4
PFBA	4.4
PFPeA	2.6
Perfluorohexanesulfonic acid	2.7
Perfluorooctanesulfonic acid (PFOS)	75.4
Perfluorooctanoic acid (PFOA)	9.0

Sample ID	SP-2
Collected Date	12/15/2023
Perfluorobutanesulfonic acid	15.1
PFBA	4.2
Perfluorohexanesulfonic acid	3.7
Perfluorooctanesulfonic acid (PFOS)	86.4
Perfluorooctanoic acid (PFOA)	21.2

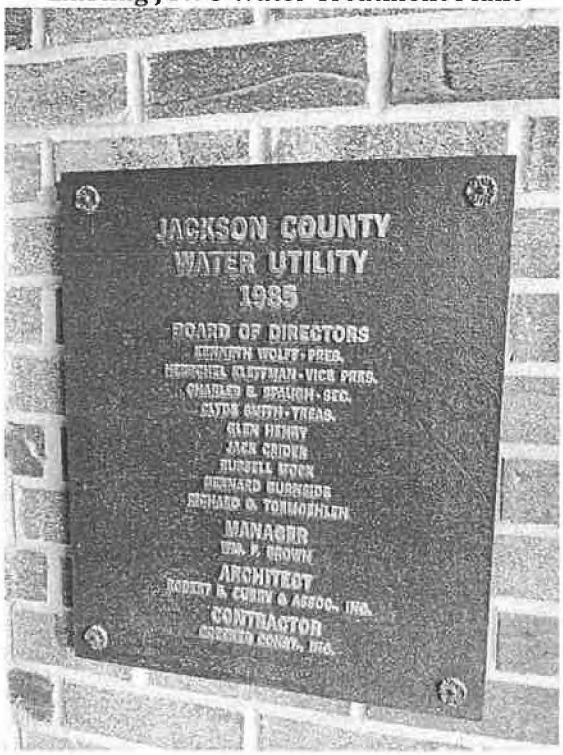
Sample ID	SP-11
Collected Date	12/15/2023
NEtFOSAA	19
Perfluorobutanesulfonic acid	22.3
Perfluorodecanoic acid	5.9
Perfluorohexanoic acid	8.5
PFBA	11.5
PFHpS	21.1
PFOSA	4.9
PFPeA	8.1
Perfluoroheptanoic acid	18.7
Perfluorohexanesulfonic acid	11.6
Perfluorononanoic acid	14.3
Perfluorooctanesulfonic acid (PFOS)	3050
Perfluorooctanoic acid (PFOA)	377

Photo Log

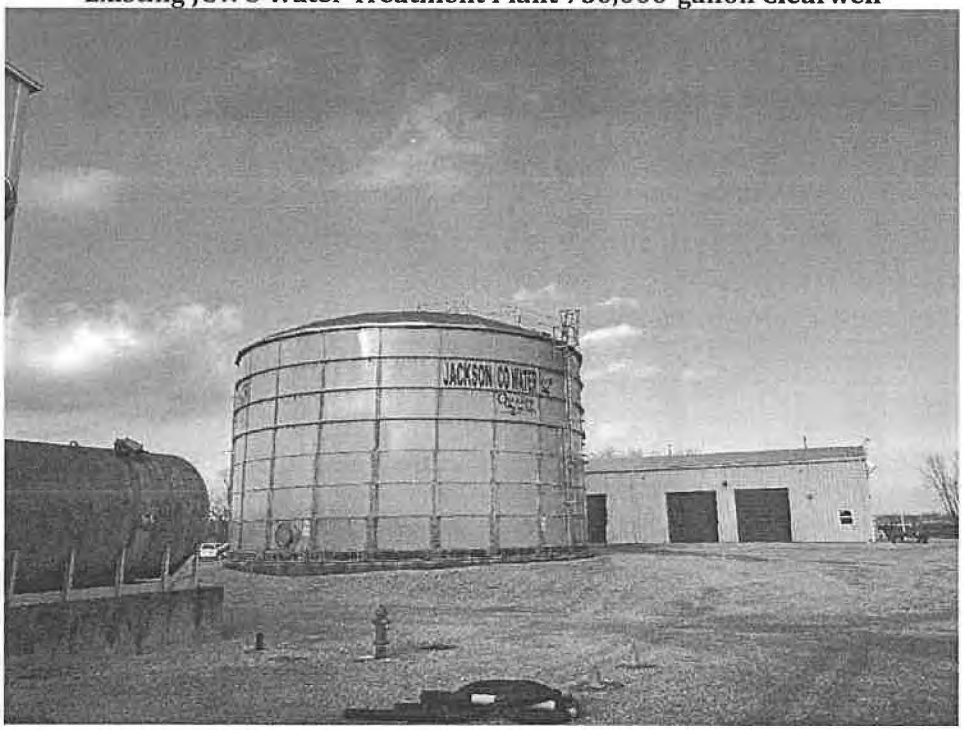
Exposed 8" PVC Water Main at Creek Crossing to be Addressed by Alternative 8

Existing JCWU Water Treatment Plant

Existing JCWU Water Treatment Plant



Existing JCWU Water Treatment Plant 750,000-gallon Clearwell



AWWA Free Water Audit Software v6.0

FWAS v6.0

This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format and is not meant to take the place of a full-scale, comprehensive water audit format. Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targeting loss reduction levels. This tool contains several separate worksheets. Sheets can be accessed using the tabs at the bottom of the screen, or by clicking the TOC links below.

Table of Contents (TOC)

AWWA Web Resources for Water Loss Control

https://www.awwa.org/Resources-Tools/Resource-Topics/Water-Loss-Control

Items referenced in the Free Water Audit Software v6.0 on the web:

- Data Grading Matrix v6.0
- Example Water Audit v6.0
- Water Audit Compiler v6.0
- AWWA Reports on Performance Indicators
- M36 Manual

Enter Basic Information

Name of Utility:	Jackson County Water Utility
Name of Contact Person:	Larry McIntosh
Email:	manager@jacksoncountywater.com
Telephone | Ext.:	812-358-3654
City/Town/Municipality:	Brownstown
State / Province:	Indiana (IN)
Country:	USA
Audit Preparation Date:	May 27 2022
Audit Year:	2021
Audit Year Label:	Calendar (Fiscal, Calendar, etc)
Audit Period Start Date:	Jan 01 2021
Audit Period End Date:	Dec 31 2021
Volume Reporting Units:	Million gallons (US)
Water System Structure:	Hybrid Wholesale + R
Water Type:	Potable Water
System ID Number:	5236003 & 5236008
Validator Name/ID:	Jill Curry/WV220069
Validator Email:	jill@recurry.com
Estimated Total Population Served by Water Utility:	14,772

Key of Input Acronyms

In order of appearance in the Worksheet

VOS	Volume from Own Sources
VOSEA	VOS Error Adjustment
WI	Water Imported
WIEA	WI Error Adjustment
WE	Water Exported
WEEA	WE Error Adjustment
BMAC	Billed Metered Authorized Consumption
BUAC	Billed Unmetered Authorized Consumption
UMAC	Unbilled Metered Authorized Consumption
UUAC	Unbilled Unmetered Authorized Consumption
SDHE	Systematic Data Handling Errors
CMI	Customer Metering Inaccuracies
UC	Unauthorized Consumption
Lm	Length of mains
Nc	Number of service connections
Lp	Average length of (private) customer service line
AOP	Average Operating Pressure
CRUC	Customer Retail Unit Charge
VPC	Variable Production Cost

Color Key User input | Calculated | Optional default

Guidance for the Worksheet

Choosing to enter unit of **percent** or **volume** (applies to VOSEA, WIEA, WEEA, CMI)

choose entry option:

1.00%	percent	*or*
	volume	25.000

Choosing to enter **default** or **custom input** (applies to UUAC, SDHE, UC)

choose entry option:

0.25%	default	*or*
	custom	75.000

Guidance for the Interactive Data Grading

Use acronym buttons in IDG header to navigate among inputs. Acronym Key above. White = needs answers, orange = complete, clear = not required. Example below.

VOS	VOSEA	WI	WE	BMAC	UUAC			
SDHE	CMI	UC	Lm	Nc	Lp	AOP	CRUC	VPC

After clicking an acronym button, answer all visible questions in the order they're presented, choosing best-fit answer

Grade will populate when all visible questions are complete for an input: 7

The limiting criteria will be labeled along the right. If only 1 limiting criterion is shown, improving on that criterion will achieve a higher data grade. If multiple limiting criteria are shown, improving on *each* limiting criterion is necessary to achieve a higher data grade. A complete inventory of data grading criteria is available in the Data Grading Matrix v6.0 (see web resources)

Limiting

If you have questions or comments regarding this software please contact us at: wlc@awwa.org

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

Water Audit Report for: Jackson County Water Utility
Audit Year: 2021 | Jan 01 2021 - Dec 31 2021 | Calendar

Click 'n' to add notes
Click 'g' to determine data validity grade

To edit water system info: go to start page

To access definitions, click the input name

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

WATER SUPPLIED

Water Supplied Error Adjustments
choose entry option:

		n	g				n	g				
VOS	Volume from Own Sources:	n	g	7	475.686	MG/Yr	n	g	8	3.40%	percent	under-registration VOSEA
WI	Water Imported:	n	g	3	16.167	MG/Yr	n	g	3	0.00%	percent	WIEA
WE	Water Exported:	n	g	5	36.904	MG/Yr	n	g	3	0.00%	percent	WEEA

WATER SUPPLIED: 471.692 MG/Yr

AUTHORIZED CONSUMPTION

choose entry option:

BMAC	Billed Metered:	n	g	8	354.154	MG/Yr		
BUAC	Billed Unmetered:	n	g	n/a	0.000	MG/Yr		
UMAC	Unbilled Metered:	n	g	10	16.439	MG/Yr		
UUAC	Unbilled Unmetered:	n	g	5	11.000	MG/Yr	custom 11.000	MG/Yr

AUTHORIZED CONSUMPTION: 381.593 MG/Yr

WATER LOSSES

90.099 MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

choose entry option:

SDHE	Systematic Data Handling Errors:	n	g	3	0.885	MG/Yr	0.25% default	
CMI	Customer Metering Inaccuracies:	n	g	3	7.563	MG/Yr	2.00% percent	under-registration
UC	Unauthorized Consumption:	n	g	3	0.885	MG/Yr	0.25% default	

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 9.334 MG/Yr

Real Losses

Real Losses: 80.765 MG/Yr

WATER LOSSES: 90.099 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 117.538 MG/Yr

SYSTEM DATA

Lm	Length of mains:	n	g	10	504.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n	g	10	6,300		(active *and* inactive)
	Service connection density:				13	conn./mile main	
	Are customer meters typically located at the curbstop/property line?				Yes		
Lp		n	g	10			

Average length of customer service line has been set to zero and a data grading of 10 has been applied

AOP	Average Operating Pressure:	n	g	8	90.0	psi

COST DATA

CRUC	Customer Retail Unit Charge:	n	g	9	$11.37	$/1000 gallons (US)	Total Annual Operating Cost
VPC	Variable Production Cost:	n	g	4	$1,017.87	$/Million gallons	$3,208,526 $/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier III (51-70). See Dashboard tab for additional outputs. *****

go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1: Volume from Own Sources (VOS)
2: Customer Metering Inaccuracies (CMI)
3: Variable Production Cost (VPC)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses[A]:		gal/conn/day
Unit Real Losses[E]:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

AWWA Free Water Audit Software: Dashboard

go to worksheet | go to grading | go to references

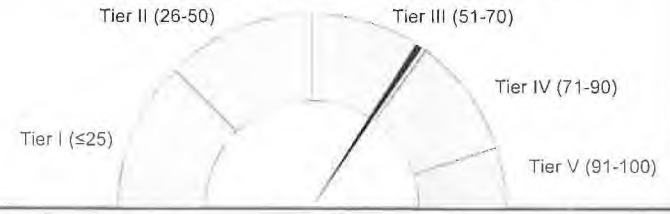
FWAS v6.0

Water Audit Report for: Jackson County Water Utility **Audit Year: 2021 Calendar** **Jan 01 2021 - Dec 31 2021**

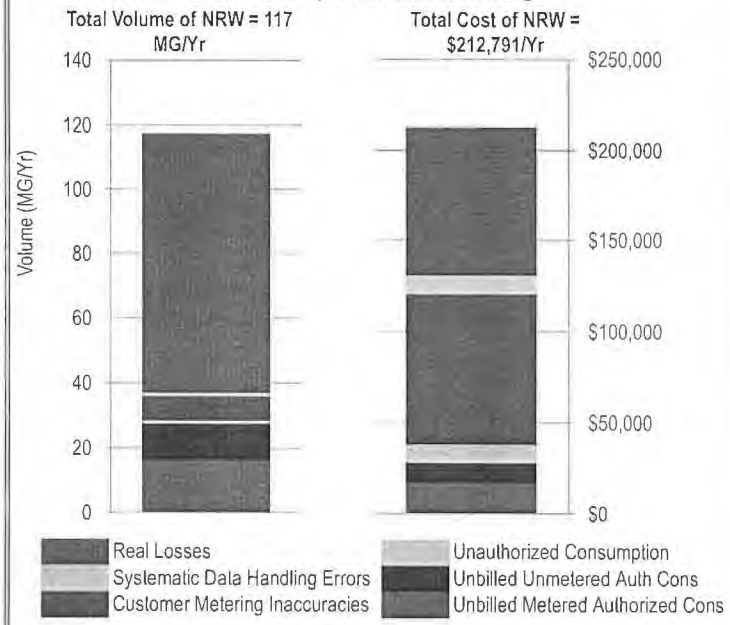
Data Validity

Data Validity Score: 68 **Data Validity Tier:** Tier III (51-70)

See Loss Control Planning for Tier Details



NRW Components Summary

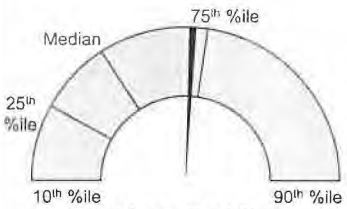


	Volume MG/Yr	Value $/Yr	Basis of Valuation
Apparent Losses	9.3	$102,653	CRUC
Real Losses	80.8	$82,208	VPC
Unbilled Authorized Cons	27.4	$27,929	VPC
Non-Revenue Water	117.5	$212,791	Blended

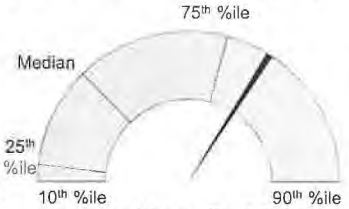
Key Performance Indicators

Actual KPI result | Target (see Worksheet)

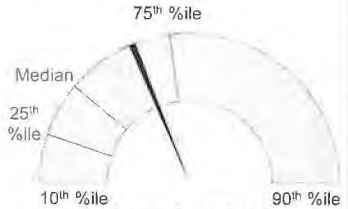
gauge %iles per validated industry ranges[2]



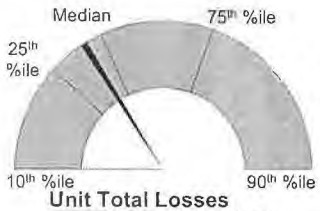
Total Loss Cost Rate
29.34 $/conn/year



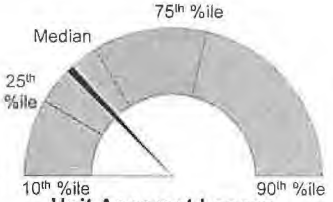
Apparent Loss Cost Rate
16.29 $/conn/year



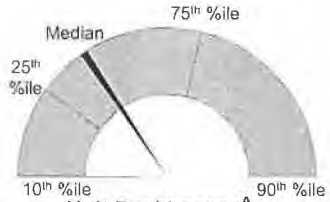
Real Loss Cost Rate
13.05 $/conn/year



Unit Total Losses
39.2 gal/conn/day

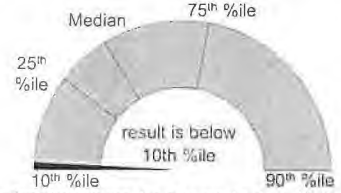


Unit Apparent Losses
4.1 gal/conn/day

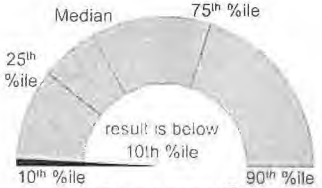


Unit Real Losses[A]
35.1 gal/conn/day

Average Operating Pressure
90 psi



Infrastructure Leakage Index (ILI)
0.7 dimensionless



Unit Real Losses[B]
439 gal/mile/day

See UARL definition for additional guidance on the ILI

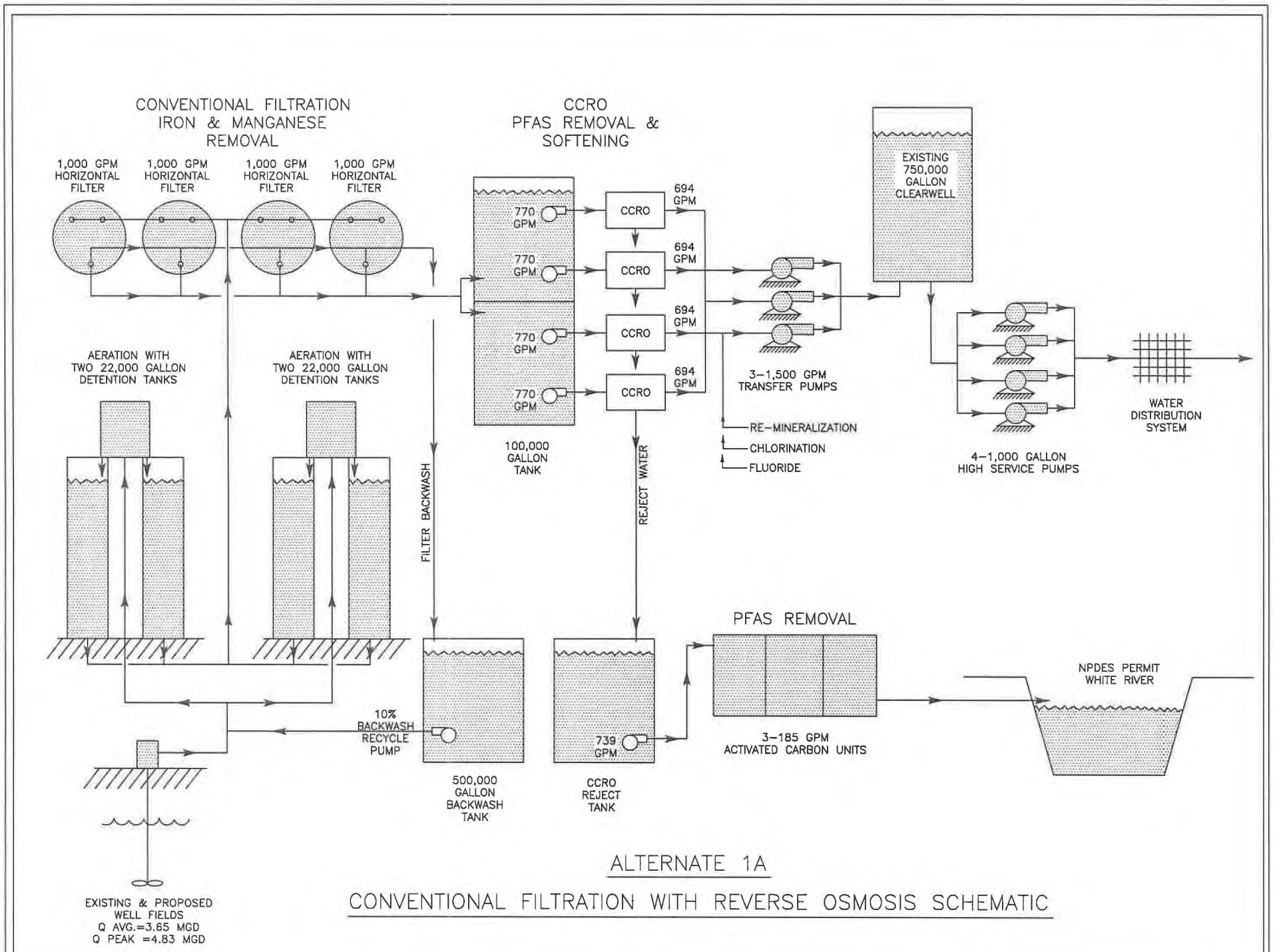
(UARL) Unavoidable Annual Real Losses	120.6 MG/Yr	52.5 gal/conn/day

Guidance Information for Key Performance

- The eight indicators shown are the recommended suite per the AWWA Water Loss Control Committee 2020 Position on KPIs[1].
- A suite of KPIs is necessary, as no single KPI can holistically communicate water loss performance for a given water system.
- See Table 1 below for Uses and Limitations for each KPI, excerpted from the AWWA Water Loss Control Committee Report (2020)[1], with naming conventions updated.
- Percentiles (%iles) shown on KPI gauges come from Level 1 validated data in the AWWA WLCC Reference Water Audit Dataset (2020)[2].
- KPI %iles shown above are not segregated by cohorts. Limited KPI data by cohorts may be found in WRF 4695 Guidance Manual, Appendix B (2019)[5].
- Actual KPI results that fall below 10th %ile or above 90th %ile do not necessarily imply error, but should be viewed with scrutiny.
- Percentiles not intended to imply targets. Targets may be input by user for operational KPIs, if desired, on Worksheet.
- See UARL and ILI in Definitions tab for discussion of size and pressure limitations.
- Systems that fall on the extreme ends of size or connection density should use caution when interpreting Unit Losses KPIs.

Appendix B

Technical Specifications from potential manufacturers
and full environmental mapping
streamlined from this Appendix
but available upon request

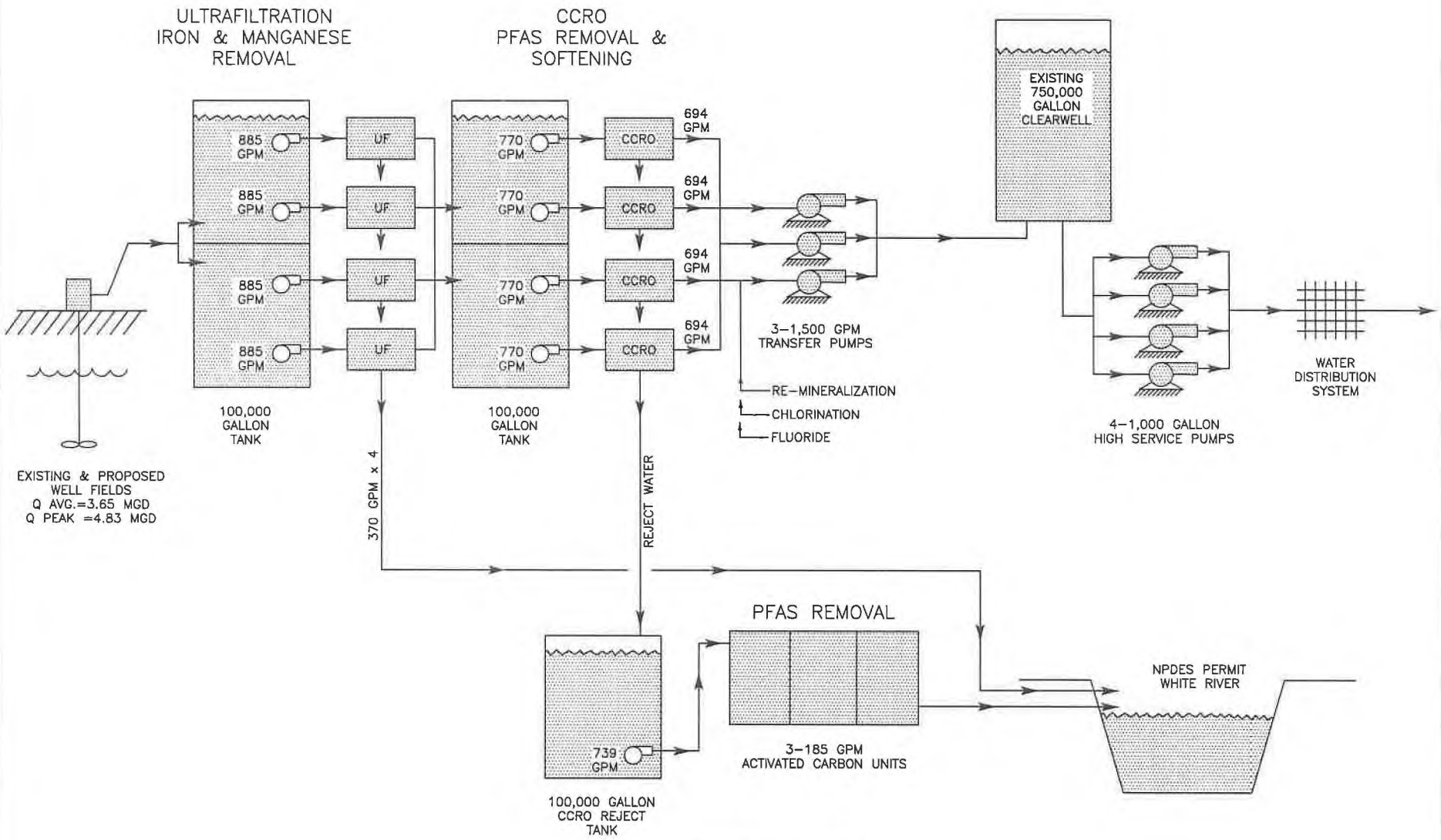


ALTERNATE 1A

CONVENTIONAL FILTRATION WITH REVERSE OSMOSIS SCHEMATIC

Alternative #1A - Proposed 3.0 MGD Water Treatment Plant
Replacement Plant to Provide Removal of PFAS, Iron, Manganese and Hardness
Conventional Filtration with Closed Circuit Reverse Osmosis
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
2,000 GPM Aerator	Each	2	$ 170,000.00	$ 340,000.00
22,000 Gallon Detention Tank	Each	4	$ 200,000.00	$ 800,000.00
1,000 GPM Horizontal Pressure Filters	Each	4	$ 425,000.00	$ 1,700,000.00
700 GPM Reverse Osmosis Package Unit	Each	4	$ 1,000,000.00	$ 4,000,000.00
GAC Filter for RO Reject Water	L.S.	1	$ 300,000.00	$ 300,000.00
CCRO Reject Tank to GAC, 100k gallons	L.S.	1	$ 400,000.00	$ 400,000.00
CCRO Feed Tank, 100k Gallons	L.S.	1	$ 400,000.00	$ 400,000.00
Filter Backwash Recycle/Holding Tank, 500k Gallons	L.S.	1	$ 1,200,000.00	$ 1,200,000.00
High Service Pumps	Each	4	$ 70,000.00	$ 280,000.00
Transfe Pumps	Each	3	$ 40,000.00	$ 120,000.00
Backwash Recycle Pumps	Each	2	$ 25,000.00	$ 50,000.00
GAC Feed Pumps	Each	2	$ 25,000.00	$ 50,000.00
Chlroine Feed System, Gas Chlorine	LS	1	$ 70,000.00	$ 70,000.00
Chlorine Gas Scrubber	Each	1	$ 110,000.00	$ 110,000.00
Chlorine Analyzers	Each	3	$ 20,000.00	$ 60,000.00
Fluoride Feed System	LS	1	$ 30,000.00	$ 30,000.00
Re-Mineralization, Corrosion Control Feed System	L.S.	1	$ 120,000.00	$ 120,000.00
Water Meters	L.S.	1	$ 100,000.00	$ 100,000.00
WTP Electrical, Lighting & Motor Controls	LS	1	$ 750,000.00	$ 750,000.00
Emergency Generator	LS	1	$ 250,000.00	$ 250,000.00
Site Work, Parking Area	LS	1	$ 150,000.00	$ 150,000.00
Yard Piping & Valves	LS	1	$ 1,000,000.00	$ 1,000,000.00
Outfall Pipe to White River	LS	1	$ 350,000.00	$ 350,000.00
Laboratory Casework & Countertop	LS	1	$ 40,000.00	$ 40,000.00
WTP Building	LS	1	$ 1,000,000.00	$ 1,000,000.00
Water Plant Piping & Valves	LS	1	$ 600,000.00	$ 600,000.00
SCADA Instrumentation and Integration	LS	1	$ 300,000.00	$ 300,000.00
HVAC & Ventilation System	LS	1	$ 50,000.00	$ 50,000.00
Dehumidification Equipment Units	LS	1	$ 30,000.00	$ 30,000.00
Painting	LS	1	$ 200,000.00	$ 200,000.00
Modification and Selective Demolition of old WTP	LS	1	$ 200,000.00	$ 200,000.00
Estimated Construction Cost				**$ 15,050,000.00**
Construction Contingency (20%)				**$ 3,010,000.00**
Preliminary Opinion of Probable Construction Cost				**$ 18,060,000.00**



ALTERNATE 1B

ULTRAFILTRATION WITH CLOSED-CIRCUIT REVERSE OSMOSIS SCHEMATIC

Alternative #1B - Proposed 3.0 MGD Water Treatment Plant
Replacement Plant to Provide Removal of PFAS, Iron, Manganese and Hardness
Ultra Filtration with Closed Circuit Reverse Osmosis
Preliminary Estimate of Probable Cost

700 GPM Ultra Filtratioon Package Unit (w/CIP)	Each	4	$ 1,000,000.00	$ 4,000,000.00
Ultra Filtration Feed Tank, 100k Gallons	L.S.	1	$ 400,000.00	$ 400,000.00
UF Backwash Systems and Waste Lines	L.S.	1	$ 300,000.00	$ 300,000.00
700 GPM Reverse Osmosis Package Unit (w/CIP)	Each	4	$ 1,000,000.00	$ 4,000,000.00
GAC Filter for RO Reject Water	L.S.	1	$ 300,000.00	$ 300,000.00
CCRO Reject Tank to GAC, 100k gallons	L.S.	1	$ 400,000.00	$ 400,000.00
CCRO Feed Tank, 100k Gallons	L.S.	1	$ 400,000.00	$ 400,000.00
Filter Backwash Recycle/Holding Tank, 500k Gallons	L.S.	1	$ 1,200,000.00	$ 1,200,000.00
High Service Pumps	Each	4	$ 70,000.00	$ 280,000.00
Transfe Pumps	Each	3	$ 40,000.00	$ 120,000.00
Backwash Recycle Pumps	Each	2	$ 25,000.00	$ 50,000.00
GAC Feed Pumps	Each	2	$ 25,000.00	$ 50,000.00
Chlroine Feed System, Gas Chlorine	LS	1	$ 70,000.00	$ 70,000.00
Chlorine Gas Scrubber	Each	1	$ 110,000.00	$ 110,000.00
Chlorine Analyzers	Each	3	$ 20,000.00	$ 60,000.00
Fluoride Feed System	LS	1	$ 30,000.00	$ 30,000.00
Re-Mineralization, Corrosion Control Feed System	L.S.	1	$ 120,000.00	$ 120,000.00
Water Meters	L.S.	1	$ 100,000.00	$ 100,000.00
WTP Electrical, Lighting & Motor Controls	LS	1	$ 750,000.00	$ 750,000.00
Emergency Generator	LS	1	$ 250,000.00	$ 250,000.00
Site Work, Parking Area	LS	1	$ 150,000.00	$ 150,000.00
Yard Piping & Valves	LS	1	$ 1,000,000.00	$ 1,000,000.00
Outfall Pipe to White River	LS	1	$ 350,000.00	$ 350,000.00
Laboratory Casework & Countertop	LS	1	$ 40,000.00	$ 40,000.00
WTP Building	LS	1	$ 1,500,000.00	$ 1,500,000.00
Water Plant Piping & Valves	LS	1	$ 600,000.00	$ 600,000.00
SCADA Instrumentation and Integration	LS	1	$ 300,000.00	$ 300,000.00
HVAC & Ventilation System	LS	1	$ 50,000.00	$ 50,000.00
Dehumidification Equipment Units	LS	1	$ 30,000.00	$ 30,000.00
Painting	LS	1	$ 200,000.00	$ 200,000.00
Modification and Selective Demolition of old WTP	LS	1	$ 200,000.00	$ 200,000.00
Estimated Construction Cost				**$ 17,410,000.00**
Construction Contingency (20%)				**$ 3,482,000.00**
Preliminary Opinion of Probable Construction Cost				**$ 20,892,000.00**

Alternative #2 - Proposed Water Treatment Plant Clearwell Expansion
Increase Capacity of Existing Clearwell Tank from 0.75 MG to 1.0 MG
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
Tank Preparation, Drain and Clean Tank	L.S.	1	$ 20,000.00	$ 20,000.00
Modify Tank, raise from 34' tall to 47' tall	L.S.	1	$ 400,000.00	$ 400,000.00
Install New Mixer In Tank	L.S.	1	$ 50,000.00	$ 50,000.00
Replace Cathodic Protection	L.S.	1	$ 20,000.00	$ 20,000.00
Disinfection and Testing	L.S.	1	$ 3,000.00	$ 3,000.00
Estimated Construction Cost				**$ 493,000.00**
Construction Contingency (20%)				**$ 98,600.00**
Preliminary Opinion of Probable Construction Cost				**$ 591,600.00**

Alternative #3 Revised - Proposed 6 New Water Supply Wells
Preliminary Estimate of Probable Cost
Alternative Phased Plan 7/8/2024

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
6" Test Well	EACH	6	$ 8,000.00	$ 48,000.00
Drilling 12" X 24" Gravel Wall Well, 24" Casing and Well Screen, 90' Deep +/-	EACH	6	$ 95,000.00	$ 570,000.00
500 GPM Vertical Turbine Pup with 6" Steel Column Pipe and C.I. discharge Head	EACH	6	$ 30,000.00	$ 180,000.00
Discharge Piping, Air Release, Check Valve, Drainback, Pressure Gauge & Meter	EACH	6	$ 20,000.00	$ 120,000.00
Well Tower, Ladder, Grating and Concrete Seal	EACH	6	$ 30,000.00	$ 180,000.00
Precast Concrete Well Vault, Ladder and Hatch	EACH	6	$ 30,000.00	$ 180,000.00
20" P.C. 350 DUCTILE IRON WATER MAIN	L.F.	2,400	$ 200.00	$ 480,000.00
12" PC 350 DI Raw Water Main	L.F.	1,800	$ 125.00	$ 225,000.00
8" P.C. 350 DUCTILE IRON WATER MAIN	L.F.	900	$ 100.00	$ 90,000.00
Pigging Station for Raw Water Main Clean-out	L.S.	2	$ 40,000.00	$ 80,000.00
12" Gate Valve w/Valve Box	L.S.	1	$ 10,000.00	$ 10,000.00
8" Gate Valve w/Valve Box	EACH	6	$ 4,000.00	$ 24,000.00
Ductile Iron Fittings for Raw Water Main	L.S.	1	$ 40,000.00	$ 40,000.00
Well Electrical, Complete	EACH	6	$ 100,000.00	$ 600,000.00
Site Electrical Improvements to Serve New Well Field	L.S.	1	$ 120,000.00	$ 120,000.00
Step Rate Drawdown Pumping Test (24 hours)	L.S.	6	$ 2,000.00	$ 12,000.00
Constant Rate Pumping Test (24 hours)	L.S.	6	$ 2,000.00	$ 12,000.00
Painting Well Tower and Platform	L.S.	6	$ 8,000.00	$ 48,000.00
Site Work at Well	L.S.	1	$ 60,000.00	$ 60,000.00
Water Analysis	L.S.	6	$ 8,000.00	$ 48,000.00
Water Level and Temperature Transducer	EACH	6	$ 6,000.00	$ 36,000.00
Emergency Generator	EACH	1	$ 500,000.00	$ 500,000.00
SCADA Controls	EACH	6	$ 20,000.00	$ 120,000.00
Total Estimated Construction Cost				**$ 3,783,000.00**
Construction Contingency (20%)				**$ 756,600.00**
Preliminary Opinion of Probable Construction Cost				**$ 4,539,600.00**

Short Lived Assets				
Well Pumps	15	years	$ 180,000.00	$ 12,000.00
Soft Starters	15	years	$ 60,000.00	$ 4,000.00
Water Meters	15	years	$ 50,000.00	$ 3,333.33
SCADA	15	years	$ 60,000.00	$ 4,000.00

Alternative #4 - Lubker Booster Station Replacement
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
Site Work	L.S.	1	$ 20,000.00	$ 20,000.00
Booster Station Building, Complete	L.S.	1	$ 130,000.00	$ 130,000.00
Booster Station Pumps, Piping, Valves and Meter	L.S.	1	$ 50,000.00	$ 50,000.00
Electrical, Complete	L.S.	1	$ 40,000.00	$ 40,000.00
SCADA Improvements	L.S.	1	$ 20,000.00	$ 20,000.00
Demolition of Old Booster Station	L.S.	1	$ 15,000.00	$ 15,000.00
Mobiization & De-Mobilization	L.S.	1	$ 10,000.00	$ 10,000.00
Total Estimated Construction Cost				**$ 285,000.00**
Construction Contingency (20%)				**$ 57,000.00**
Preliminary Opinion of Probable Construction Cost				**$ 342,000.00**

Alternative #5 - Gorbetts Chapel Booster Station Replacement
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
Site Work	L.S.	1	$ 20,000.00	$ 20,000.00
Booster Station Building, Complete	L.S.	1	$ 120,000.00	$ 120,000.00
Booster Station Pumps, Piping, Valves and Meter	L.S.	1	$ 50,000.00	$ 50,000.00
Electrical, Complete	L.S.	1	$ 40,000.00	$ 40,000.00
Emergency Generator and ATS	L.S.	1	$ 50,000.00	$ 50,000.00
SCADA Improvements	L.S.	1	$ 15,000.00	$ 15,000.00
Demolition of Old Booster Station	L.S.	1	$ 15,000.00	$ 15,000.00
Mobiization & De-Mobilization	L.S.	1	$ 10,000.00	$ 10,000.00
Total Estimated Construction Cost				**$ 320,000.00**
Construction Contingency (20%)				**$ 64,000.00**
Preliminary Opinion of Probable Construction Cost				**$ 384,000.00**

Alternative #6 - Emergency Generators for Kentucky Avenue and Persimmon Lake Booster Stations
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
Site Work	Each	2	$ 3,000.00	$ 6,000.00
Generator Pad	Each	2	$ 3,000.00	$ 6,000.00
Emergency Generator and ATS	Each	2	$ 50,000.00	$ 100,000.00
Electrical, Complete	Each	2	$ 40,000.00	$ 80,000.00
Security Camera at Kentucky Ave.	L.S.	1	$ 5,000.00	$ 5,000.00
Security Fence at Kentucky Ave.	L.S.	1	$ 15,000.00	$ 15,000.00
SCADA Improvements/Connections	Each	2	$ 5,000.00	$ 10,000.00
Mobiization & De-Mobilization	L.S.	1	$ 10,000.00	$ 10,000.00
Total Estimated Construction Cost				**$ 232,000.00**
Construction Contingency (20%)				**$ 46,400.00**
Preliminary Opinion of Probable Construction Cost				**$ 278,400.00**

Alternative #7 - Water Storage Tank Mixers - Install in Existing Tanks
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Total Cost Estimated
300,000 Gallon Brownstown Elevated Tank (SR 135 & US 50)	Lump Sum	1	$ 45,000.00
300,000 Gallon Clearspring Elevated Tank	Lump Sum	1	$ 45,000.00
211,000 Gallon Vallonia Flat Bottom Reservoir Tank	Lump Sum	1	$ 35,000.00
800,000 Gallon Brownstown Standpipe Tank	Lump Sum	1	$ 35,000.00
65,000 Gallon Crane Hill Standpipe Tank	Lump Sum	1	$ 35,000.00
750,000 Gallon Crane Hill Standpipe	Lump Sum	1	$ 35,000.00
640,000 Gallon Acme Standpipe Tank	Lump Sum	1	$ 35,000.00
590,000 Gallon Freetown Standpipe Tank	Lump Sum	1	$ 40,000.00
Total Estimated Construction Cost			**$ 305,000.00**
Construction Contingency (20%)			**$ 61,000.00**
Preliminary Opinion of Probable Construction Cost			**$ 366,000.00**

Alternative #8
Water Main Looping & Replacement at CR 100 East & CR 875 North
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
6" C900 PVC Water Main, open cut	L.F.	**4,000**	$ 45.00	$ 180,000.00
8" DR 11 HDPE Water Main, HDD Creek X-Ing	L.F.	**900**	$ 100.00	$ 90,000.00
Associated Fittings & Valves	L.S.	**1**	$ 20,000.00	$ 20,000.00
Service Line Reconnections	Each	**2**	$ 2,000.00	$ 4,000.00
Standard Hydrant with auxilary valve	Each	**2**	$ 8,000.00	$ 16,000.00
Traffic Control	L.S.	**1**	$ 2,000.00	$ 2,000.00
Pothole Locating of Existing Main & Utilities	L.S.	**1**	$ 3,000.00	$ 3,000.00
Field Tile Repair	Each	**3**	$ 800.00	$ 2,400.00
Connect to Existing Water Main	Each	**3**	$ 10,000.00	$ 30,000.00
Granular Backfill	C.Y.	**35**	$ 40.00	$ 1,400.00
Asphalt Pavement Repair	S.Y.	**30**	$ 90.00	$ 2,700.00
Erosion Control & Landscape Restoration	LS.	**1**	$ 4,000.00	$ 4,000.00
Location Wire	L.F.	**4,900**	$ 0.50	$ 2,450.00
Total Estimated Construction Cost				**$ 357,950.00**
Construction Contingency (20%)				**$ 71,590.00**
Preliminary Opinion of Probable Construction Cost				**$ 429,540.00**

Alternative #9
Water Main Loop at CR 400 North & CR 1100 West
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
4" C900 PVC Water Main, open cut	L.F.	**3,500**	$ 45.00	$ 157,500.00
8" Gate Valve With Valve Box	Each	**2**	$ 3,500.00	$ 7,000.00
4" Gate Valve with Valve Box	Each	**2**	$ 2,500.00	$ 5,000.00
Associated Fittings & Valves	L.S.	**1**	$ 20,000.00	$ 20,000.00
Service Line Reconnections	Each	**0**	$ 2,000.00	$ -
Flush Hydrant with Auxilary Valve	Each	**1**	$ 5,000.00	$ 5,000.00
Standard Hydrant with auxilary valve	Each	**1**	$ 8,000.00	$ 8,000.00
Traffic Control	L.S.	**1**	$ 2,000.00	$ 2,000.00
Pothole Locating of Existing Main & Utilities	L.S.	**1**	$ 3,000.00	$ 3,000.00
Field Tile Repair	Each	**3**	$ 800.00	$ 2,400.00
Connect to Existing Water Main	Each	**1**	$ 10,000.00	$ 10,000.00
Granular Backfill	C.Y.	**45**	$ 40.00	$ 1,800.00
Asphalt Pavement Repair	S.Y.	**40**	$ 90.00	$ 3,600.00
Erosion Control & Landscape Restoration	LS.	**1**	$ 4,000.00	$ 4,000.00
Location Wire	L.F.	**3,500**	$ 0.50	$ 1,750.00
Total Estimated Construction Cost				**$ 231,050.00**
Construction Contingency (20%)				**$ 46,210.00**
Preliminary Opinion of Probable Construction Cost				**$ 277,260.00**

Alternative #10
Water Main Extension and Loop at CR 400 North, I-65 & US 31
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
8" C900 PVC Water Main, open cut	L.F.	**5,500**	$ 65.00	$ 357,500.00
8" DR 11 HDPE Water Main, HDD Creek X-Ing	L.F.	**2,200**	$ 100.00	$ 220,000.00
8" DR 11 HDPE Water Main through Casing	L.F.	**500**	$ 65.00	$ 32,500.00
Special Crossing I-65	L.F.	**400**	$ 250.00	$ 100,000.00
Associated Fittings & Valves	L.S.	**1**	$ 30,000.00	$ 30,000.00
Service Line Reconnections	Each		$ -	$ -
Standard Hydrant with auxilary valve	Each	**5**	$ 8,000.00	$ 40,000.00
Traffic Control	L.S.	**1**	$ 10,000.00	$ 10,000.00
Pothole Locating of Existing Main & Utilities	L.S.	**1**	$ 5,000.00	$ 5,000.00
Field Tile Repair	Each	**5**	$ 800.00	$ 4,000.00
Connect to Existing Water Main	Each	**2**	$ 10,000.00	$ 20,000.00
Granular Backfill	C.Y.	**35**	$ 40.00	$ 1,400.00
Asphalt Pavement Repair	S.Y.	**30**	$ 90.00	$ 2,700.00
Erosion Control & Landscape Restoration	LS.	**1**	$ 15,000.00	$ 15,000.00
Location Wire	L.F.	**7,700**	$ 0.50	$ 3,850.00
Total Estimated Construction Cost				**$ 841,950.00**
Construction Contingency (20%)				**$ 168,390.00**
Preliminary Opinion of Probable Construction Cost				**$ 1,010,340.00**

Alternative #11
Water Main Loop at Base Road & SR 258
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
4" C900 PVC Water Main, open cut	L.F.	**4,500**	$ 45.00	$ 202,500.00
4" Gate Valve with Valve Box	Each	**2**	$ 2,500.00	$ 5,000.00
Associated Fittings & Valves	L.S.	**1**	$ 10,000.00	$ 10,000.00
Service Line Reconnections	Each	**1**	$ 2,000.00	$ 2,000.00
Flush Hydrant with Auxilary Valve	Each	**2**	$ 5,000.00	$ 10,000.00
Traffic Control	L.S.	**1**	$ 2,000.00	$ 2,000.00
Pothole Locating of Existing Main & Utilities	L.S.	**1**	$ 3,000.00	$ 3,000.00
Field Tile Repair	Each	**3**	$ 800.00	$ 2,400.00
Connect to Existing Water Main	Each	**1**	$ 10,000.00	$ 10,000.00
Granular Backfill	C.Y.	**45**	$ 40.00	$ 1,800.00
Asphalt Pavement Repair	S.Y.	**30**	$ 90.00	$ 2,700.00
Erosion Control & Landscape Restoration	LS.	**1**	$ 4,000.00	$ 4,000.00
Location Wire	L.F.	**4,500**	$ 0.50	$ 2,250.00
Total Estimated Construction Cost				**$ 257,650.00**
Construction Contingency (20%)				**$ 51,530.00**
Preliminary Opinion of Probable Construction Cost				**$ 309,180.00**

Alternative #12
Water Main Looping & Replacement at CR 100 East & CR 875 North
Preliminary Estimate of Probable Cost

Description	Units	Total Quantity	Unit Cost Estimated	Total Cost Estimated
6" C900 PVC Water Main, open cut	L.F.	**8,800**	$ 45.00	$ 396,000.00
6" DR 11 HDPE Water Main, HDD Creek X-Ing	L.F.	**400**	$ 90.00	$ 36,000.00
Associated Fittings & Valves	L.S.	**1**	$ 15,000.00	$ 15,000.00
Service Line Reconnections	Each	**6**	$ 2,000.00	$ 12,000.00
Standard Hydrant with auxilary valve	Each	**2**	$ 8,000.00	$ 16,000.00
Traffic Control	L.S.	**1**	$ 2,000.00	$ 2,000.00
Pothole Locating of Existing Main & Utilities	L.S.	**1**	$ 3,000.00	$ 3,000.00
Field Tile Repair	Each	**6**	$ 800.00	$ 4,800.00
Connect to Existing Water Main	Each	**2**	$ 10,000.00	$ 20,000.00
Granular Backfill	C.Y.	**55**	$ 40.00	$ 2,200.00
Asphalt Pavement Repair	S.Y.	**50**	$ 90.00	$ 4,500.00
Erosion Control & Landscape Restoration	LS.	**1**	$ 5,000.00	$ 5,000.00
Location Wire	L.F.	**9,200**	$ 0.50	$ 4,600.00
Total Estimated Construction Cost				**$ 521,100.00**
Construction Contingency (20%)				**$ 104,220.00**
Preliminary Opinion of Probable Construction Cost				**$ 625,320.00**

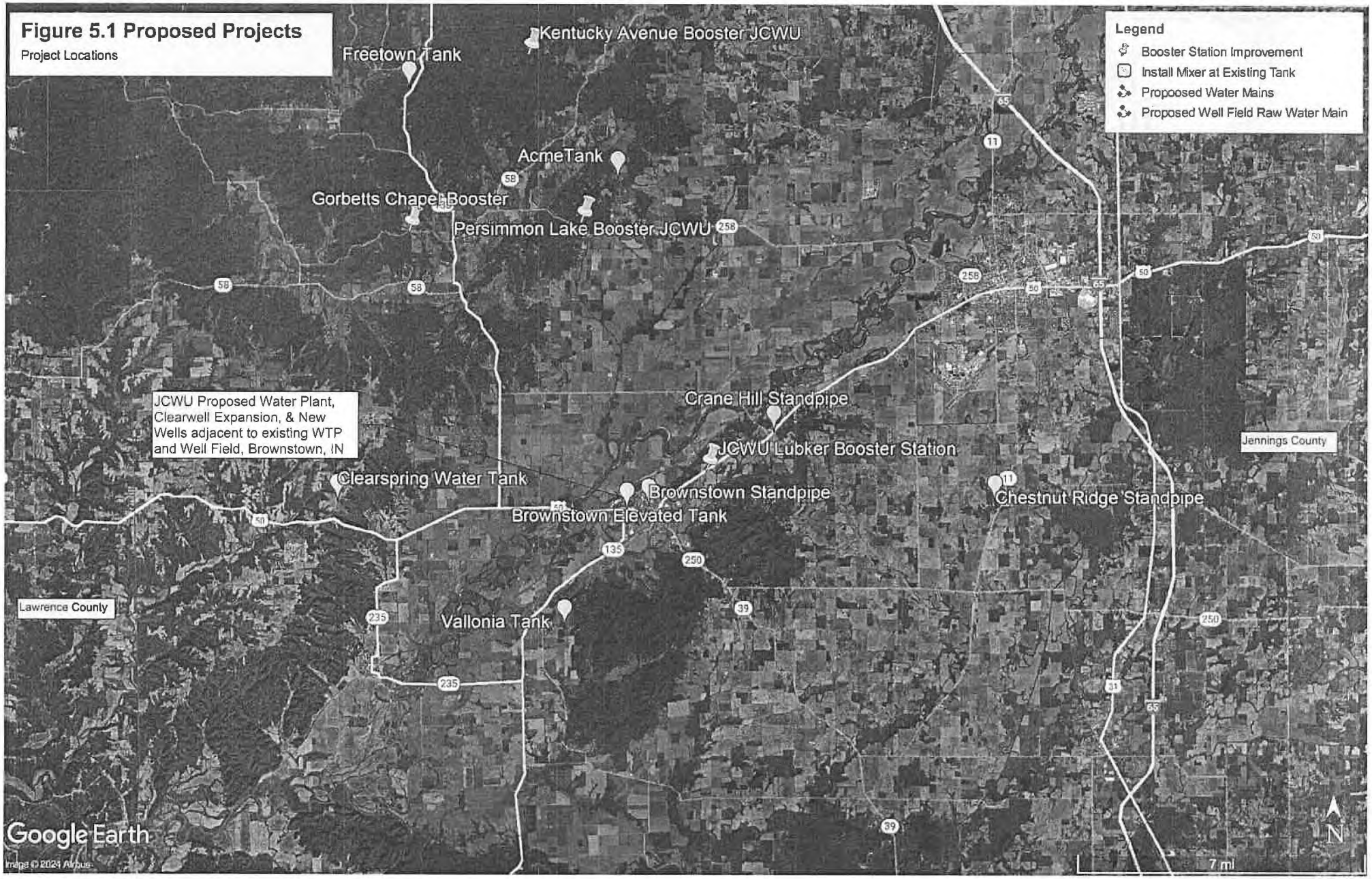
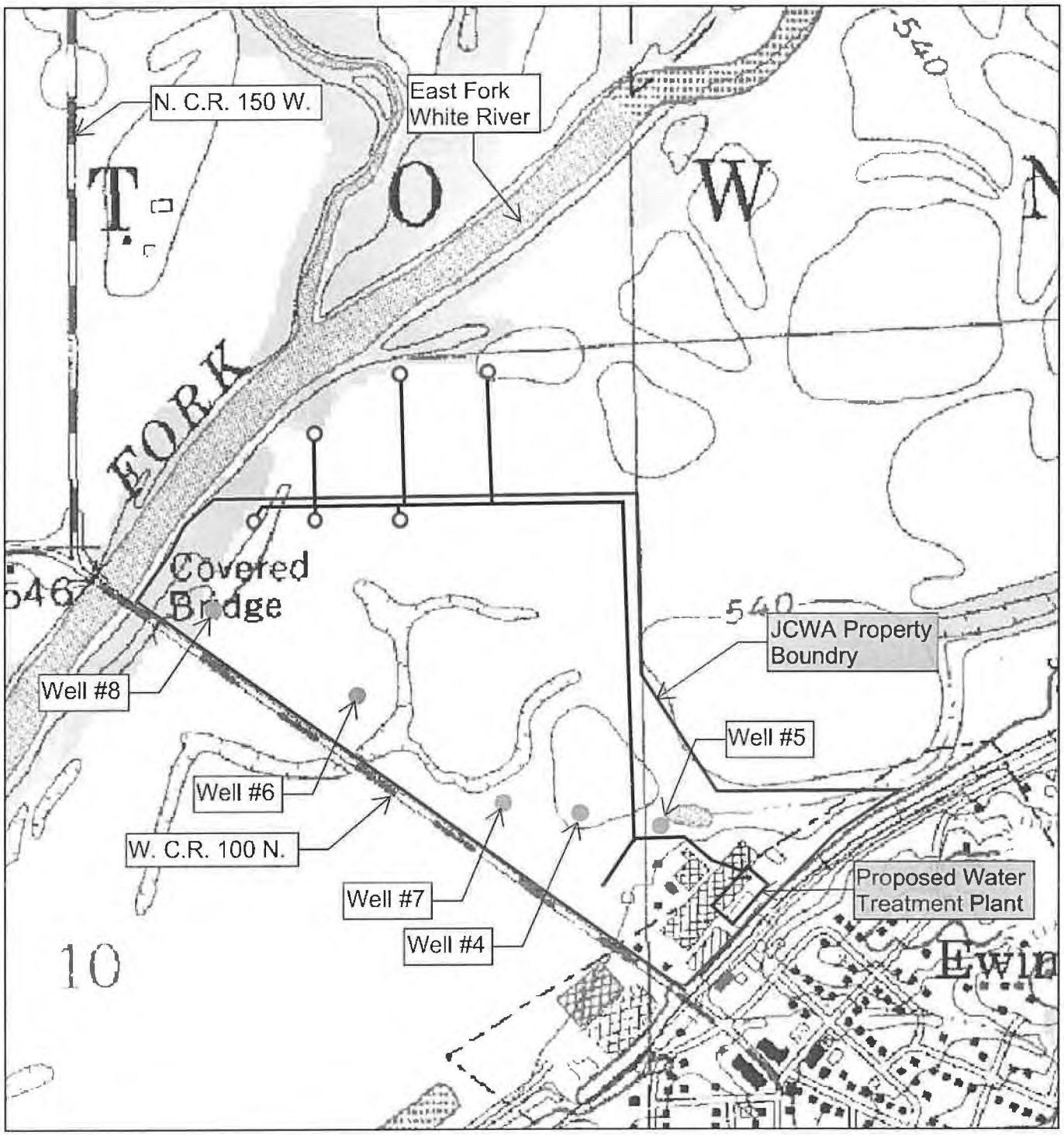


Figure 5.1 Proposed Projects
Project Locations
Legend
Booster Station Improvement
Install Mixer at Existing Tank
Propoosed Water Mains
Proposed Well Field Raw Water Main
Freetown Tank
Kentucky Avenue Booster JCWU
Acme Tank
Gorbetts Chapel Booster
Persimmon Lake Booster JCWU
JCWU Proposed Water Plant, Clearwell Expansion, & New Wells adjacent to existing WTP and Well Field, Brownstown, IN
Crane Hill Standpipe
JCWU Lubker Booster Station
Clearspring Water Tank
Brownstown Standpipe
Brownstown Elevated Tank
Chestnut Ridge Standpipe
Jennings County
Lawrence County
Vallonia Tank
Google Earth
Image © 2024 Airbus
7 mi
N

Figure 5.1.1 Well Field, WTP, Clearwell USGS map



March 12, 2024

1:8,000

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

N

State Boundary

JCWA Property Boundary

Existing Well

Proposed Water Treatment Plant

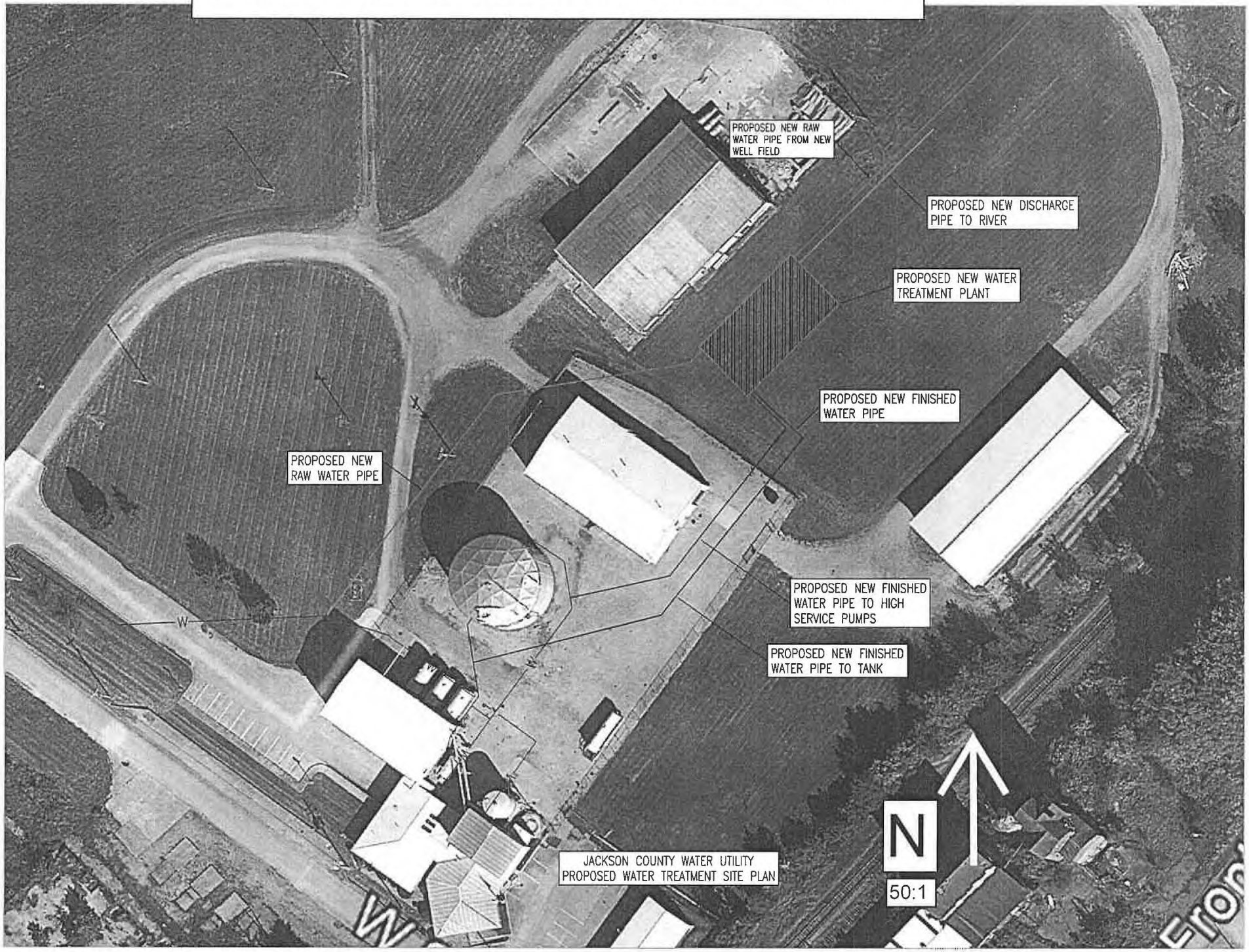
Proposed Water Mains

Proposed Wells / Test Boring

United States Geological Survey (USGS)
Indiana Department of Transportation (INDOT), U.S. Census Bureau (USCB), Indiana Geographic Information Council (IGIC), UITS, Indiana Spatial Data Portal

FIGURE 5.1.1a

JCWU PROPOSED WTP SITE PLAN



Appendix C

Markel Markel Lambring & MacTavish

ATTORNEYS AT LAW

BRUCE MARKEL III *
JOSEPH K. MARKEL **
RONALD K. LAMBRING
BRUCE A. MACTAVISH
* ALSO ADMITTED TO KY BAR
**ALSO ADMITTED TO KY & FL BARS

136 SOUTH MAIN STREET
P.O. BOX 121
BROWNSTOWN, INDIANA 47220

BRUCE MARKEL, JR.
(1916-1984)

PHONE (812) 358-3200
PHONE (812) 522-2550
FAX (812) 358-3919

January 30, 2003

Mr. Dan DeVault
Rural Development
P.O. Box 191
Bloomfield, IN 47424

RE: Jackson County Water Utility, Inc.-Amendment to By-Laws

Dear Dan:

Please find enclosed the executed Amendment to Contract for the Water Purchase Contract between Jackson County Water and Indiana-American Water Company. This amendment will extend the term of the contract for an additional 20 years but in no event beyond January 1, 2052.

I believe this Amendment has been properly executed and the contract is now extended to January 1, 2052.

Please call me if you have questions.

Sincerely,
Markel, Markel Lambring & MacTavish

Joseph K. Markel

JKM/jkm
enclosures
CC: Darrell Baker

Indiana-American Water Company, Inc.

555 East County Line Road • Suite 201 • P.O. Box 570 • Greenwood, Indiana 46142-0570 • (317) 885-2400 •(317) 885-2406 or (317) 885-2431 FAX

1/27/03

Joseph K. Markel
Markel, Markel, Lambring & Mac Tavish
136 South Main Street
P.O. Box 121
Brownstown, IN 47220

Re: Jackson County Water Utilities, Inc.

Dear Joseph:

Following our discussion and your letter and attachments of January 17, 2003 regarding the extension of the existing 1972 water purchase agreement, we have executed and I am enclosing one executed copy of the Amendment dated as of January 1, 2003 extending the existing agreement to January 1, 2052. We understand this extension is necessary for the pending financing program of Jackson County Water.

We have retained for our files the additional copy of the Amendment.

Very truly yours,

S.B. Givens
Corporate Counsel and
Secretary

cc: Wynn Wright
Mike Stewart

AMENDMENT TO CONTRACT

WHEREAS, on the 16th day of May, 1972, Seymour Water Company as Seller and Jackson County Water Utility, Inc. (Jackson County) as Purchaser entered into a certain WATER PURCHASE CONTRACT (Contract), a copy of which is attached hereto, for the purchase at wholesale potable water to be resold by Purchaser, and;

WHEREAS, thereafter Seymour Water Company became, Indiana-American Water Company, Inc., an Indiana Corporation, (Indiana) by merger with Seymour Water Company and is known by that name today, and is the successor in interest to said Contract, and;

WHEREAS, Jackson County and Indiana wish to amend the terms of the original May 16, 1972 Contract, in order to accommodate Jackson County in obtaining additional financing;

WHEREAS, each party has taken and done all Corporate action required to enter into this Amendment of Contract. The persons signing this Amendment of Contract are fully authorized by their respective Boards of Directors to execute this document, and;

NOW THEREFORE, in consideration of the sum of One ($1.00) dollar and other valuable consideration, the parties hereto agree to extend the term of the Contract for an additional twenty (20) years beyond the original term of sixty (60) years, "from the date the initial delivery of any water", but, in no event shall the final term of said Contract be extended beyond January 1, 2052.

AGREED TO AND EFFECTIVE AS OF JANUARY 1, 2003.

INDIANA-AMERICAN WATER COMPANY, INC.

BY: Duane Cole

VP Operations

Printed name and office

JACKSON COUNTY WATER UTILITY, INC.

BY: Richard Tormoehlen

Richard Tormoehlen, Pres.

USDA–FHA
Form FHA 442–30
(3–4–68)

WATER PURCHASE CONTRACT

This contract for the sale and purchase of water is entered into as of the 16th day of May, 19 72, between the Seymour Water Company, 114 S. Chestnut Street Seymour, Indiana 47274 (Address) hereinafter referred to as the "Seller" and the Jackson County Water Utility, Inc. c/o The Peoples Bank, Brownstown, Indiana 47220 (Address) hereinafter referred to as the "Purchaser",

WITNESSETH:

Whereas, the Purchaser is organized and established under the provisions of Indiana General Not For Profit Corporation Act of the Code of Indiana, for the purpose of constructing and operating a water supply distribution system serving water users within the area described in plans now on file in the office of the Purchaser and to accomplish this purpose, the Purchaser will require a supply of treated water, and

Whereas, the Seller owns and operates a water supply distribution system with a capacity currently capable of serving the present customers of the Seller's system and the estimated number of water users to be served by the said Purchaser as shown in the plans of the system now on file in the office of the Purchaser, and

Whereas, by Resolution No. _____ enacted on the 27th day of April, 19 72, by the Seller, the sale of water to the Purchaser in accordance with the provisions of the said Resolution was approved, and the execution of this contract carrying out the said provision by the President, and attested by the Secretary, was duly authorized, and

Whereas, by Resolution of the Board of Directors of the Purchaser, enacted on the 20th day of April, 19 72, the purchase of water from the Seller in accordance with the terms set forth in the said Resolution was approved, and the execution of this contract by the President, and attested by the Secretary was duly authorized;

Now, therefore, in consideration of the foregoing and the mutual agreements hereinafter set forth,

A. The Seller Agrees:

1. (Quality and Quantity) To furnish the Purchaser at the point of delivery hereinafter specified, during the term of this contract or any renewal or extension thereof, potable treated water meeting applicable purity and quality standards of the Indiana State Board of Health and/or the same quality as furnished to it's customers in Seymour, Indiana in such quantity as may be required by the Purchaser not to exceed 12,000,000 gallons per month.

2. (Point of Delivery and Pressure) That water will be furnished at a reasonably constant pressure calculated at one (1) connection as follows: _____ inch main supply at a point located _____

See Addendum A-1

If a greater pressure than that normally available at the point of delivery is required by the Purchaser, the cost of providing such greater pressure shall be borne by the Purchaser. Emergency failures of pressure or supply due to main supply line breaks, power failure, flood, fire and use of water to fight fire, earthquake or other catastrophe shall excuse the Seller from this provision for such reasonable period of time as may be necessary to restore service.

3. (Metering Equipment) To furnish, install, operate, and maintain at its own expense at point of delivery, the necessary metering equipment, including a meter house or pit, and required devices of standard type for properly measuring the quantity of water delivered to the Purchaser and to calibrate such metering equipment whenever requested by the Purchaser but not more frequently than once every twelve (12) months. A meter registering not more than two percent (2%) above or below the test result shall be deemed to be accurate. The previous readings of any meter disclosed by test to be inaccurate shall be corrected for the three (3) months previous to such test in accordance with the percentage of inaccuracy found by such tests. If any meter fails to register for any period, the amount of water furnished during such period shall be deemed to be the amount of water delivered in the corresponding period immediately prior to the failure, unless Seller and Purchaser shall agree upon a different amount. The metering equipment shall be read on the 21st day of each mon An appropriate official of the Purchaser at all reasonable times shall have access to the meter for the purpose of verifying its readings.

4. (Billing Procedure) To furnish the Purchaser at the above address not later than the 1st day of each month, with an itemized statement of the amount of water furnished the Purchaser during the preceding month.

B. The Purchaser Agrees:

1. (Rates and Payment Date) To pay the Seller, not later than the 10th day of each month, for water delivered in accordance with the following schedule of rates:

See Addendum A-2

a. _____

b. _____

c. _____

2. (Connection Fee) To pay as an agreed cost, a connection fee to connect the Seller's system with the system purcha of the Purchaser, the sum of $57,284.21 which shall cover any and all costs of the Seller for installatior of the metering equipment, meter pit, and the said 12 inch diameter Ductile Iron wate main to be constructed by the Seller pursuant to this contract.

ADDENDUM A-1

A 12 inch in diameter Ductile Iron water main will be constructed by the Seller from the point of an existing 12 inch water main at the intersection of United States Highway Number 50 and United States Highway Number 31. Said water main to extend north along United States Highway Number 31 to a point on the north right of way line of Jackson County Highway commonly known as Enos Road, said point being the Point of Delivery.

A minimum of 43 PSI with a flow of 620 gallons per minute will be maintained at all times at the Point of Delivery, except as provided in this contract.

Addendum A-2

SEYMOUR WATER COMPANY
Seymour, Indiana

Schedule of Water Rates and Charges
Pursuant to P.S.C.I. Order No. 32576
Effective December 1, 1971

Metered Rates

For the first 2,000 gallons in each month, per 1000 gallons	$1.59
For next 28,000 gallons in each month, per 1000 gallons	1.37
For next 15,000 gallons in each month, per 1000 gallons	1.01
For next 15,000 gallons in each month, per 1000 gallons	.89
For next 30,000 gallons in each month, per 1000 gallons	.67
For next 30,000 gallons in each month, per 1000 gallons	.61
For next 30,000 gallons in each month, per 1000 gallons	.56
For next 30,000 gallons in each month, per 1000 gallons	.44
All in excess of 100,000 gallons in each month, per 1000 gallons	.42

Minimum Charge or Rate for Metered Service

Size of Meter	Monthly Minimum Rate
5/8 inch meter	$3.20
3/4 inch meter	6.85
1 inch meter	8.70
1-1/2 inch meter	9.60
2 inch meter	13.70
3 inch meter	23.30
4 inch meter	41.15
6 inch meter	97.05
Fire hydrants, (public and private)	per annum 127.30
All fire protection sprinkler service	per annum 127.30

W. HOWARD HOPKIN, President

Addendum A-3

The Seller shall, commencing with the twentieth (20th) customer and continuing with each succeeding customer thereafter who connects directly to the 12-inch in diameter ductile iron water main to be installed by the Seller pursuant to this contract as referred to in Addendum A-1 hereof, and within a period of ten (10) years from the construction of such water main, pay the Purchaser an amount equal to four (4) years average revenue of the average customer of the same classification as the customer which so connects. The average revenue per customer is to be computed by employing the water rate schedule of the Seller in full force and at the time such customer connects.

C. It is further mutually agreed between the Seller and the Purchaser as follows:

1. (Term of Contract) That this contract shall extend for a term of 60 years from the date of the initial delivery of any water as shown by the first bill submitted by the Seller to the Purchaser and, thereafter may be renewed or extended for such term, or terms, as may be agreed upon by the Seller and Purchaser.

2. (Delivery of Water) That 90 days prior to the estimated date of completion of construction of the Purchaser's water supply distribution system, the Purchaser will notify the Seller in writing the date for the initial delivery of water.

3. (Water for Testing) When requested by the Purchaser the Seller will make available to the contractor at the point of delivery, or other point reasonably close thereto, water sufficient for testing, flushing, and trench filling the system of the Purchaser during construction, irrespective of whether the metering equipment has been installed at that time, at the rates attached and made a part of this contract in Addendum A-2 of this contract.

which will be paid by the contractor or, on his failure to pay, by the Purchaser.

4. (Failure to Deliver) That the Seller will, at all times, operate and maintain its system in an efficient manner and will take such action as may be necessary to furnish the Purchaser with quantities of water required by the Purchaser. Temporary or partial failures to deliver water shall be remedied with all possible dispatch. In the event of an extended shortage of water, or the supply of water available to the Seller is otherwise diminished over an extended period of time, the supply of water to Purchaser's consumers shall be reduced or diminished in the same ratio or proportion as the supply to Seller's consumers is reduced or diminished.

X

5. (Regulatory Agencies) That this contract is subject to such rules, regulations, or laws as may be applicable to similar agreements in this State and the Seller and Purchaser will collaborate in obtaining such permits, certificates, or the like, as may be required to comply therewith.

6. (Miscellaneous) That the construction of the water supply distribution system by the Purchaser is being financed by a loan made or insured by, and/or a grant from, the United States of America, acting through the Farmers Home Administration of the United States Department of Agriculture, and the provisions hereof pertaining to the undertakings of the Purchaser are conditioned upon the approval, in writing, of the State Director of the Farmers Home Administration.

7. (Successor to the Purchaser) That in the event of any occurence rendering the Purchaser incapable of performing under this contract, any successor of the Purchaser, whether the result of legal process, assignment, or otherwise, shall succeed to the rights of the Purchaser hereunder.

8. (Modification of Contract) That the provisions of this contract pertaining to the schedule of rates to be paid by the Purchaser for water delivered are subject to modification as the Seller's rates are changed from time to time by the Public Service Commission of the State of Indiana. Other provisions of this contract may be modified or altered by mutual agreement.

9. See Addendum A-3

In witness whereof, the parties hereto, acting under authority of their respective governing bodies, have caused this contract to be duly executed in Three (3) counterparts, each of which shall constitute an original.

Seller:

Seymour Water Company

By _____

Title President

Attest:

_____
Secretary

Purchaser:

Jackson County Water Utility, Inc.

By _____

Title President

Attest:

_____
Secretary

This contract is approved on behalf of the Farmers Home Administration this 24 day of August, 19 72.

By _____

Title Community Program Specialist

GPO 810-201

State Revolving Fund Loan Program
Asset Management Program Certification Form
Inclusive of
Fiscal Sustainability Plan Certification

(To be submitted either at the time of loan closing or no later than the final disbursement of a Participant's loan proceeds)

Participant Name: Jackson County Water Utility, Inc.		
Street Address: 1119 W. Spring Street	P. O. Box Number: P.O. Box 56	
City: Brownstown	State: IN	Zip Code: 47220

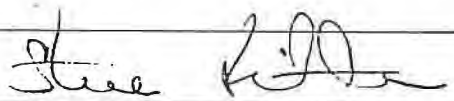
Indiana Code 5-1.2-10-16 requires a Participant that receives a loan or other financial assistance from the State Revolving Fund Loan Program (SRF) to certify that the Participant has documentation demonstrating it has the financial, managerial, technical and legal capability to operate and maintain its water or wastewater collection and treatment system. A Participant must demonstrate that it has developed an asset management program as defined in the Indiana Finance Authority's (Authority) Asset Management Program Guidelines.

Section 603(d)(1)(E) of the Federal Water Pollution Control Act (FWPCA) requires a recipient of a loan for a project that involves the repair, replacement, or expansion of a publicly owned treatment works to develop and implement a Fiscal Sustainability Plan (FSP). The requirement pertains to those portions of the treatment works paid for with Clean Water SRF Loan Funds.

The Asset Management Program (AMP) shall be inclusive of the requirements of the FSP for Wastewater and Drinking Water projects and shall include at a minimum the following: (1) A system map (2) An inventory and assessment of system assets (3) development of an infrastructure inspection, repair, and maintenance plan, including a plan for funding such activities (4) an evaluation and implementation of water and energy conservation efforts (5) An analysis of the customer rates necessary to support the AMP (6) Audit performed at least every two years (7) Demonstration of the technical, managerial, legal and financial capability to operate and maintain the system, per the guidelines established by the Authority.

I hereby certify that I am an authorized representative for the above listed Participant and pursuant to IC 5-1.2-10-16 and Section 603(d)(1)(E), the Participant has developed and is implementing an AMP (inclusive of the requirements of an FSP) that meets the requirements established by the Authority. Upon the request of the Environmental Protection Agency (EPA) or the Indiana SRF, the Participant agrees to make the AMP (which includes the FSP requirements) available for inspection and/or review.

Participant's estimated capital asset needs in the next 5 years: $ 29,289,240.00

	3/27/24
Signature of Authorized Representative	Date
Steve Ritter	812-358-3654
Printed Name	Phone Number/Email Address

CURRY & ASSOCIATES, INC.
CONSULTING ENGINEERS & ARCHITECTS

March 27, 2024

RE: Jackson County Water Utility, Inc. DAC Memo

The Jackson County Water Utility, Inc. is planning for drinking water system improvements including the below projects:

- Proposed Water Treatment Plant to Provide PFAS Removal
- Clearwell Tank Expansion
- New Water Supply Wells
- Lubker Booster Station Replacement
- Gorbetts Chapel Booster Station Replacement
- Generators for Booster Stations (Kentucky Avenue & Persimmon Lake)
- Tank Mixers at existing tanks throughout the distribution system
- Water Main Loop & Replacement: CR 100 East and CR 875 N Under White Creek
- Water Main Loop at CR 400 North
- Water Main Extension and Loop at CR 400 N, I-65 & US 231
- Water Main Loop at Base Road & SR 258
- Water Main Replacement at CR 225 W & CR 400 N.

Census Tracks Impacted:
The JCWU service area generally includes all of Jackson County and fringe areas in Bartholomew County, Jennings County, Lawrence County and Brown County. The City of Seymour, located in Jackson County, is served by Indiana American Water Company. The Town of Crothersville and the Town of Medora each operate independent municipal waterworks located in Jackson County.

All Jackson County Census Tracts except those serving only the City of Seymour are considered served by the new water plant and wells as well as tank mixers. Only the Booster Stations and water mains service smaller areas. **None of the Census tracts appear to meet the SRF SFY 2025 criteria for a Disadvantaged Community.**

Service Area Overlap: The entire drinking water system is not located within a town or city limits.

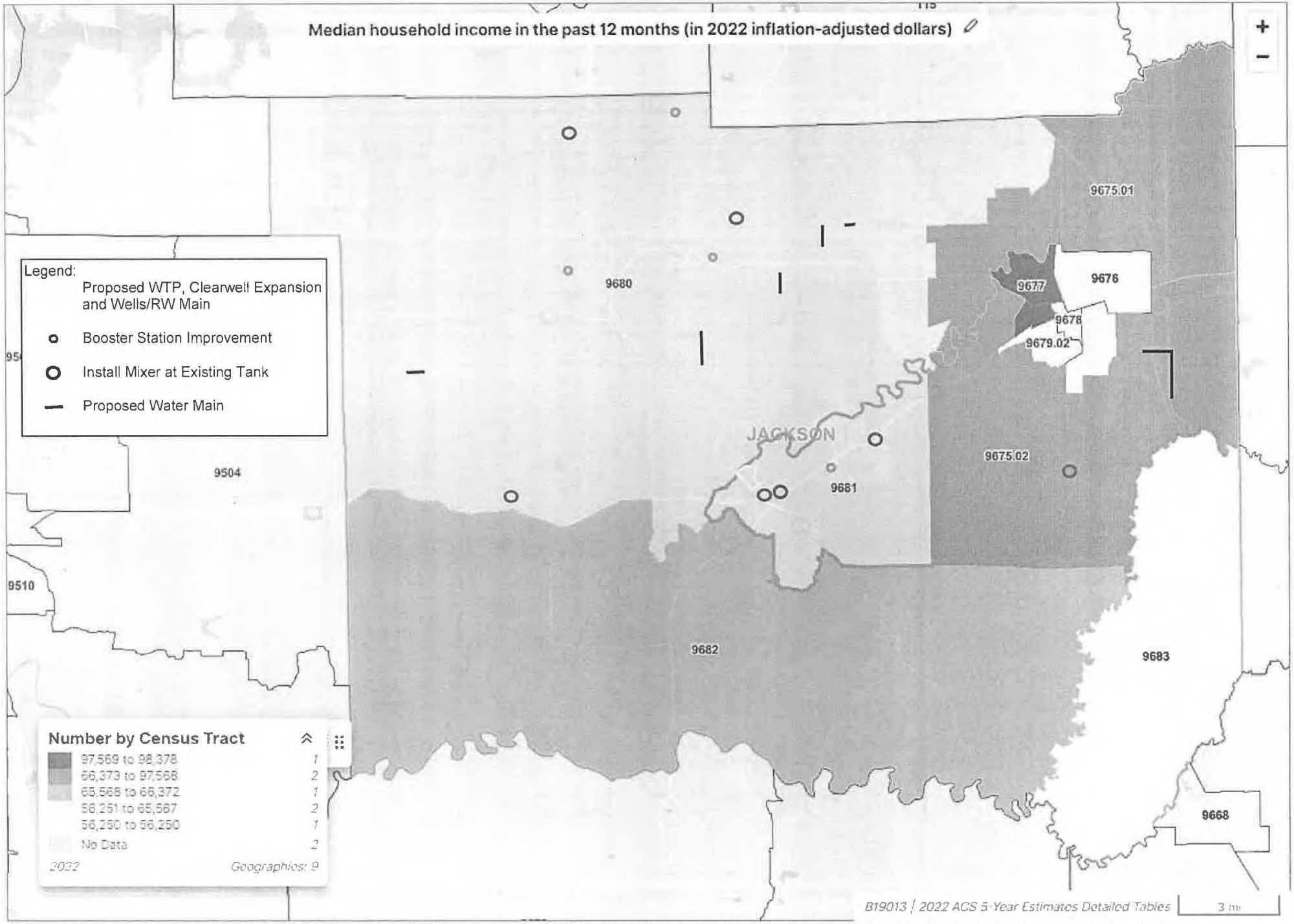
Attached Figure: See attached figures identifying census tract number/boundaries. Both a map of only Jackson County Census Tracts as well as those minimally served in adjacent counties are shown. Construction work is only planned within Jackson County.

Summary Table (see next page):
None of the Census tracts appear to meet the SRF SFY 2025 criteria for a Disadvantaged Community.

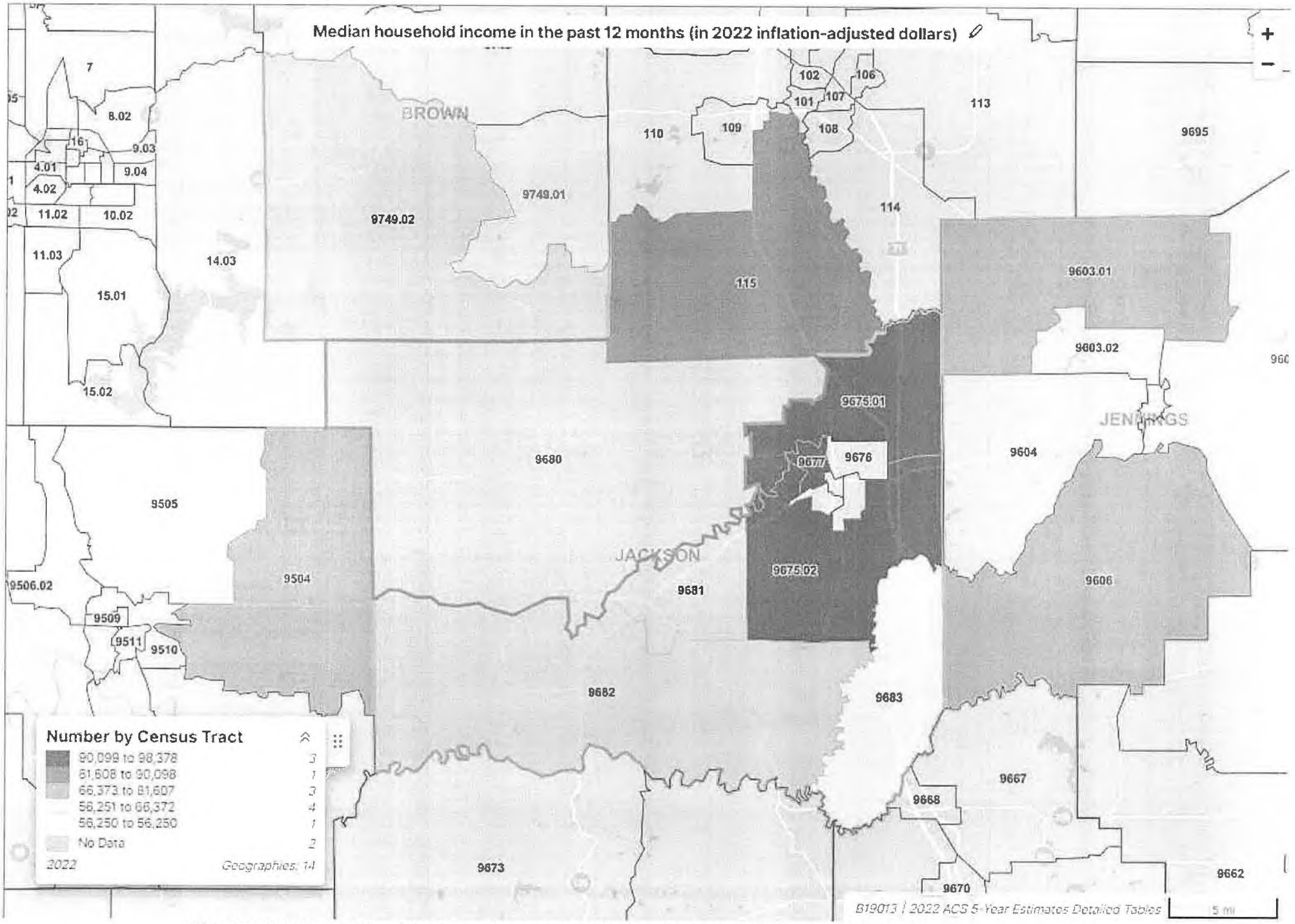
110 Commerce Drive
Danville, IN 46122
www.recurry.com
P 317-745-6995
F 317-745-6985

Summary Table:

Census Tract, County	Project Components	Median Household Income
9675.01, Jackson County	-Proposed Water Treatment Plant to Provide PFAS Removal, New Wells, Clearwell Expansion -Tank Mixers	**$96,949**
9675.02, Jackson County	-Proposed Water Treatment Plant to Provide PFAS Removal, New Wells, Clearwell Expansion -Tank Mixers -Water Main Extension and Loop at CR 400 N, I-65 & US 231	**$97,568**
9677, Jackson County	-Proposed Water Treatment Plant to Provide PFAS Removal, New Wells, Clearwell Expansion -Tank Mixers	**$98,378**
9680, Jackson County	-Proposed Water Treatment Plant to Provide PFAS Removal, New Wells, Clearwell Expansion -Tank Mixers -Water Main Loop at Base Road & SR 258 -Water Main Replacement at CR 225 W & CR 400 N. -Water Main Loop & Replacement: CR 100 East and CR 875 N Under White Creek -Water Main Loop at CR 400 North - Gorbetts Chapel Booster Station Replacement - Generators for Booster Stations (Kentucky Avenue & Persimmon Lake)	**$65,567**
9681, Jackson County	-Proposed Water Treatment Plant to Provide PFAS Removal, New Wells, Clearwell Expansion -Tank Mixers - Lubker Booster Station Replacement	**$64,904**
9682, Jackson County	-Proposed Water Treatment Plant to Provide PFAS Removal, New Wells, Clearwell Expansion -Tank Mixers	**$66,372**
9683, Jackson County	-Proposed Water Treatment Plant to Provide PFAS Removal, New Wells, Clearwell Expansion -Tank Mixers	**$56,250**



The above figure only includes census tracts within Jackson County where the majority of customers are located.



Census tracts outside of Jackson County have few customers but are also shown above.

Seymour Tribune

Prescribed by State Board of Accounts

General Form No 99P (Rev. 2009A)

Attn:
Name: JACKSON CO WATER UTILITY
Address: P. O. BOX 56

City/State: BROWNSTOWN, IN 47220

Acct # S482408
Order # 60136277

AIM MEDIA INDIANA
d/b/a THE TRIBUNE
PO BOX 3213
McALLEN, TX 78502-3213
FED I.D. #32-0472774

(Government Unit) County: Jackson

PUBLISHER'S CLAIM

LINE COUNT

Data for computing costs: Number of equivalent lines per column	64
Number of Columns	1
Number of insertions	1

COMPUTATION OF CHARGES

64 lines, 1 column(s) x rate of 0.3844 cents per line

Additional charges for notices containing rule or tabular work
(50 percent surcharge included in rate above)

Charges for extra proofs of publication ($1.00 for each proof in excess of two included in rate above)

TOTAL AMOUNT OF CLAIM ---------- 24.60

Pursuant to the provisions and penalties of IC 5-11-10-1, I hereby certify that the foregoing account is just and correct, that the amount claimed is legally due, after allowing all just credits, and that no part of the same has been paid.

PUBLISHER'S AFFIDAVIT

I, Sally Clark, Legal Advertising Clerk of the newspaper of general circulation printed and published in the English language in the (city/town) of Seymour in state and county aforesaid, and that the printed matter attached hereto is a true copy, which publication being as follows:

5/22/2024

Sally Clark

Sally Clark/Legal Advertising Clerk

5/22/2024
Date

Page	:	1 of 1 05/22/2024 07:18:53	Ad Number	:	50175430
			Ad Key	:	
Order Number	:	60136277	Salesperson	:	09 - Lana Gearries
PO Number	:	Larry McIntosh	Publication	:	Seymour Tribune
Customer	:	S482408 JACKSON CO WATER UTILITY	Section	:	60 Notices
Contact	:		Sub Section	:	60 Notices
Address1	:		Category	:	6015 Legals
Address2	:		Dates Run	:	05/22/2024-05/22/2024
City St Zip	:		Days	:	1
Phone	:	(812) 358-3654	Size	:	1 x 6.21, 64 lines
Fax	:		Words	:	212
Credit Card	:		Ad Rate	:	L-Government
Printed By	:	Cindy Fillenworth	Ad Price	:	24.60
Entered By	:	Lana Gearies	Amount Paid	:	0.00
			Amount Due	:	24.60
Keywords	:	DWSRF			
Notes	:	manager@jacksoncountywater.com			
Zones	:				

Legal Advertisement
Notice of Public Hearing
Jackson County Water Utility to obtain assistance from the Drinking Water State Revolving Fund (DWSRF) Loan Program for Drinking Water Utility Improvements

The Jackson County Water Utility will hold a public hearing at 7:30 pm on Thursday, June 6, 2024 at the Jackson County Water Utility office located at 1119 W. Spring Street, Brownstown, IN 47220. The Utility's engineering consultant, Curry & Associates, Inc., will present the recommended improvements which includes Water Treatment Plant improvements to provide PFAS removal, clearwell tank expansion, new water supply wells, booster station replacements/improvements, mixers at storage tanks, and water main looping and replacement as described in the Preliminary Engineering Report (PER). The project will be funded through a DWSRF loan.

At this hearing, there will be the opportunity for questions and comments from the public. If special assistance is required at the meeting, please contact Larry McIntosh, Utility General Manager, at 812-358-3654. Copies of the PER are available for public viewing starting May 24, 2024 at the Jackson County Water Utility Office, located at 1119 W. Spring Street, Brownstown, IN 47220. Written comments regarding this project should be sent to Lori Young, Curry & Associates, Inc., 110 Commerce Drive, Danville, IN 46122 by June 18, 2024.

60136277 hspaxlp
T: 5/22/2024

Jackson County Water Utility, Inc.

Public Hearing for Proposed Drinking Water Improvements Project PER

June 6, 2024

Sign-In Sheet

Please print clearly your Name and Address below:

Name	Street Address, Town, State, Zip	Phone	Email Address
Steve Rutledge	11386 West U.S. Hwy 50, Norman 47264	812-525-2959	Steve.theeangus@gmail.com
Gloria Baughman	Po Box 185	Vallonia, IN	hgbaughman
Kyle Tellenbrohf	3982 S CR 1200W	Medora, IN 47260 47281	tstelt@yahoo.com
Richard Conner	3491 E - 150 N	Seymour, IN 47274	812-525-7981
Cliff Beard	10402 N CR 800 W Norman, IN 47264	(812)216-0021	criderconstruction@gmail.com
Robert Akin	12798 E 2000 N Seymour	47274	812-445-3502
Glenn E Henry	5945 South 1000E Crothersville	47229	812-525-0109

Jackson County Water Utility, Inc.
Public Hearing for Proposed Drinking Water Improvements Project PER
June 6, 2024

Sign-In Sheet

Please print clearly your Name and Address below:

Name	Street Address, Town, State, Zip	Phone	Email Address
Bryan Fish	9122 N Co Rd 400 W Freetown IN 47235	812-521-1924	Freetown4SA@live.com
Brad & Candace Robertson	6708 E 950N, Seymour, IN	812-525-2121	
Lori Young	Curry & Assoc, Inc.		Lyoung@recurry.com

Gloria Baughman
hgbaughman@aol.com

Gary Wente
gmwente@gmail.com

Bryan Fish
freetownus@live.com

Glena Henry
Leezer50@yahoo.com

Robert Akin
12798 E 1000 N
Seymour, IN 47274

Larry McIntosh
manager@jacksoncountywater.com

Jennifer Thompson
jlthompson1122@gmail.com

Richard Tormoehlem
3492 E 350 N
Seymour, IN 47274

Tim Steltenpohl
tstelt@yahoo.com

Steve Ritter
steveritterangus@gmail.com

Lori Young
lyoung@recurry.com

Crothersville Times
ctimes@frontier.com

Jackson County Banner
office@thebanner.com

Jackson County Health Dept.
801 W 2nd St
Seymour, IN 47274

Jackson County Planning & Zoning
111 S. Main St.
Suite 211
Brownstown, IN 47220

SIGNATORY AUTHORIZATION RESOLUTION

WHEREAS, the Jackson County Water Utility, Inc., of Jackson County, Indiana, herein called the Participant, has plans for a drinking water infrastructure improvement project to meet State and Federal regulations, such as the Safe Drinking Water Act, and the Participant intends to proceed with the construction of such project:

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors, the governing body of the Participant, that:

1. The President of the Jackson County Water Utility, Inc. be authorized to make application for an SRF Loan and provide the State Revolving Fund Program such information, data and documents pertaining to the loan process as may be required, and otherwise act as the authorized representative of the Participant; and

2. The Participant agrees to comply with the State of Indiana and Federal requirements as they pertain to the SRF Loan Program; and

3. That two certified copies of the resolution be prepared and submitted as part of the Participant's Preliminary Engineering Report.

ADOPTED AND PASSED BY THE COUNCIL / BOARD OF THE JACKSON COUNTY WATER UTILITY, INC., OF JACKSON COUNTY, INDIANA, THIS 6TH DAY OF JUNE, OF 2024.

AUTHORIZED SIGNATORY:

PRESIDENT, JACKSON COUNTY WATER UTILITY, INC.

ATTEST:

SECRETARY, JACKSON COUNTY WATER UTILITY, INC.

PER ACCEPTANCE RESOLUTION

WHEREAS, the Jackson County Water Utility, Inc., of Jackson County, Indiana, has caused a Preliminary Engineering Report, PER, dated March 27, 2024, to be prepared by the consulting firm of Curry & Associates, Inc.; and

WHEREAS, said PER has been presented to the public at a public hearing held June 6, 2024, for public comment; and

WHEREAS, the Jackson County Water Utility's Board of Directors finds that there was not sufficient evidence presented in objection to the recommended project in the Preliminary Engineering Report.

NOW, THEREFORE BE IT RESOLVED THAT:

1. The Jackson County Water Utility's Preliminary Engineering Report dated March 27, 2024, be approved and adopted by the Jackson County Water Utility, Inc. Board of Directors; and

2. That said PER be submitted to Indiana State Revolving Fund Loan Program for review and approval.

PASSED AND ADOPTED BY THE JACKSON COUNTY WATER UTILITY, INC. BOARD OF DIRECTORS THIS 6TH DAY OF JUNE, OF 2024.

BOARD OF DIRECTORS:

PRESIDENT, JACKSON COUNTY WATER UTILITY, INC.

ATTEST:

SECRETARY, JACKSON COUNTY WATER UTILITY, INC.

Jackson County Water Utility, Inc.
Public Hearing for
Drinking Water Preliminary Engineering Report submitted to
State Revolving Fund (SRF)
June 6, 2024

PUBLIC HEARING MINUTES

The public hearing was opened at 7:30 p.m.

Lori Young with Curry & Associates, Inc. explained that the public hearing is a requirement for the State Revolving Fund Program (SRF). She explained the hearing minutes, sign-in sheet and other documents would be submitted to the SRF. Ms. Young explained that there is a five-day comment period following the hearing.

A handout was shared outlining the proposed project, funding sources, cost estimate, regulatory approvals, rate impacts and project schedule. See attached handout.

Lori explained that the SRF Project Priority List, and that we anticipate SRF publishing the list in July.

The hearing was opened for questions and comments.

Board members asked questions and noted concerns about the high project cost. Lori explained that the engineering team is continuing to further vet the treatment options and working with IDEM to better understand the limits for NPDES discharge. Board members also asked about potential to find additional wells without contamination. Lori and Larry discussed the challenges with time and land availability, but will continue to look at those options as well. With the current plan for new wells along northern well field property line, we need to drill test wells and perform sampling to verify water quality. JCWU will still have concern with the known contaminant plume and must continue efforts to understand and plan to prevent that plume from further contaminating groundwater.

Board members asked about next steps and schedule. Lori Young and Larry McIntosh explained the next steps continuing further vet treatment technology options and the ultimate O&M costs. Possible revisions to the PER may be needed pending the additional information. Following that, JCW would need to start a rate study and filing a petition with the IURC. Larry has had preliminary discussions with the legal team, bond council and rate consultant about the project and timeline. The IURC filing will need to be soon due to time schedule constraints with funding.

The Signatory Authorization and PER Acceptance resolutions were read and passed.

The hearing concluded at 8:30 p.m.

Minutes Prepared by Lori Young, Curry & Associates, Inc.

Lori A. Young

Minutes Reviewed by the Jackson County Water Utility, Inc.

PRELIMINARY ENGINEERING REPORT
PUBLIC HEARING
JUNE 6, 2024

PROJECT NEED

The existing water treatment plant (WTP) is nearing the end of its useful life. Additional treatment equipment is required to remove recently identified PFAS contaminants identified in three wells. In order to meet increasing water demand and reduce the level of PFAS removal needed, construction of three additional wells is proposed. C

PROPOSED PROJECT

The proposed water system improvements project consists of the following recommended alternatives:

- Alternative 1A: Proposed Water Treatment Plant to Provide PFAS Removal
- Alternative 2: Clearwell Tank Expansion
- Alternative 3: New Water Supply Wells
- Alternative 4: Lubker Booster Station Replacement
- Alternative 5: Gorbetts Chapel Booster Station Replacement
- Alternative 6: Generators for Booster Stations (Kentucky Avenue & Persimmon Lake)
- Alternative 7: Installation of Tank Mixers at Existing Storage Tanks
- Alternative 8: Water Main Loop & Replacement: CR 100 E. and CR 875 N
- Alternative 9: Water Main Loop at CR 400 North
- Alternative 10: Water Main Extension and Loop at CR 400 N, I-65 & US 231
- Alternative 11: Water Main Loop at Base Road & SR 258
- Alternative 12: Water Main Replacement at CR 225 W & CR 400 N.

Construct new water treatment facility on existing WTP property. New WTP shall include conventional filtration for iron and manganese removal, followed by CCRO for PFAS removal and softening. GAC shall be used to remove PFAS from CCRO concentrate (waste) stream.
Expand clearwell volume by installing three (3) additional rings of panels. Extend ladder and cage to base of tank. Add safety climb system. Install new sidewall panel and manway assembly.
Construct three (3) new wells each rated for 500 gpm. These wells provide a supplemental water supply and with the objective of better water quality, with low or no PFAS contamination.
Replace below-grade Lubker booster station with above-grade duplex pump station. This will replace an old station and provide safer access.
Replace the below-grade Gorbetts booster station with above-grade version. Install new generator.
Install new generator at each of two (2) booster stations: Kentucky Avenue and Persimmon Lake. Install security camera and perimeter fencing at the Kentucky Avenue Booster Station.
The project will include the installation of a mixing system in each existing storage tank.
The project will include approximately 28,400 Linear Feet of water main that will replace existing and/or eliminate dead ends.

FUNDING SOURCES

- Indiana State Revolving Fund Loan anticipated $29,289,240

PRELIMINARY COST ESTIMATE

Alternatives - Selected Plan	Cost
Water Supply and Treatment Alternatives	
1A - Proposed 2.88 MGD Water Treatment Plant to Provide PFAS Removal	$15,050,000.00
2 - Water Treatment Plant Clearwell Tank Expansion to 1 MG	$493,000.00
3 - New Water Supply Wells	$2,213,000.00
Distribution System - Booster Station Alternatives	
4 - Lubker Booster Station Replacement	$285,000.00
5 - Gorbetts Chapel Booster Station Replacement	$320,000.00
6 - Emergency Generators at Kentucky Avenue and Persimmon Lake B.S.	$232,000.00
Distribution System - Water Storage Alternatives	
7 - Installation of Mixers at Existing Water Storage Tanks	
7A - 300,000 Gallon Brownstown Elevated Tank (SR 135 & US 50)	$45,000.00
7B - 300,000 Gallon Clearspring Elevated Tank	$45,000.00
7C - 211,000 Gallon Vallonia Flat Bottom Reservoir Tank	$35,000.00
7D - 800,000 Gallon Brownstown Standpipe Tank	$35,000.00
7E - 65,000 Gallon Crane Hill Standpipe Tank	$35,000.00
7F - 750,000 Gallon Crane Hill Standpipe	$35,000.00
7G - 640,000 Gallon Acme Standpipe Tank	$35,000.00
7H - 590,000 Gallon Freetown Standpipe Tank	$40,000.00
Distribution System - Water Main Alternatives	
8 - Water Main Looping & Replacement at CR 100 East & CR 875 North	$357,950.00
9 - Water Main Loop at CR 400 North & CR 1100 West	$231,050.00
10 - Water Main Extension and Loop at CR 400 North, I-65 & US 31	$841,950.00
11 - Water Main Loop at Base Road & SR 258	$257,650.00
12 - Water Main Replacement at CR 225 West & CR 400 North	$521,100.00
Estimated Construction Cost	**$21,107,700.00**
Construction Contingency (20%)	***$4,221,540.00***
Total Estimated Construction Cost with Contingency	***$25,329,240.00***

Non-Construction Costs	
Engineering (Design, Bid & Contract Admin) (10%)	$2,500,000.00
Construction Observation (3%)	$760,000.00
Surveying	$100,000.00
Legal (local)	$25,000.00
Legal - Bond Counsel	$120,000.00
Rate Consultant	$100,000.00
Archaeology and Wetland Investigation	$25,000.00
Rate Case Professional Fees	$250,000.00
Labor Standards	$50,000.00
SRF Financing Fees	$30,000.00
Total Estimated Non-Construction Costs	**$3,960,000.00**
Preliminary Opinion of Probable Total Project Cost	**$29,289,240.00**

Regulatory Approvals

- Indiana Utility Regulatory Commission (IURC) - Requesting authority to borrow funds
- Indiana Department of Environmental Management (IDEM) Construction Permits (Drinking Water and Construction Stormwater Permits)

Rate Impacts

- Current rates $50.40/4,000 gallons.
- To-be determined/pending subsidy or grant funds

Project Schedule/ Next Steps

Project Component	Anticipated Date
Submission of PER to SRF	March 2024
Public Hearing for PER	May 2024
Begin Engineering Design	June-July 2024
IURC Filing	June 2024
Completion of Environmental Review	October 2024
Funding Agency PER Approval	November 2024
Submit Permit Application to IDEM	December 2024
Receive IDEM Construction Permits	January 2025
Advertise for Bids & FEDC Submittal to SRF	December 2024
Receive Bids	January 2025
IURC Approval	February-March 2025
Close Loan	March 2025
Contract Award	April 2025
Begin Construction	May 2025
Complete Construction	December 2026

June 6, 2024

The regular monthly meeting of the Board of Directors of Jackson County Water Utility, Inc. was held at the Spring Street plant at 1119 W. Spring Street, Brownstown, Indiana. President, Steve Ritter, called the meeting to order at 7:30 P.M. Members present were:

Gloria Baughman	Tim Steltenpohl	Glenn Henry
Richard Tormoehlen	Robert Akin	Clayton Beard
Bryan Fish	Steve Ritter	

Others present were: Larry McIntosh, Manager; Lori Young, Engineer; Jennifer Thompson, Recording Secretary; and Ben Love and Shawn Sprague, Employees.

Tim Steltenpohl opened the meeting with prayer.

The public hearing for the Preliminary Engineer's Report was held prior to the regular monthly meeting. Brad and Candace Robertson were in attendance along with all of those present above. Lori Young presented the Preliminary Engineering Report and reviewed it for the public hearing. After further discussion by the Board, a motion was made by Glenn Henry to approve the PER and Resolution and was seconded by Gloria Baughman. The motion was approved by unanimous vote in favor thereof.

A motion was made by Tim Steltenpohl to approve the Signatory Resolution authorizing President, Steve Ritter, to sign all documents necessary to proceed with the SRF Loan. The motion was seconded by Richard Tormoehlen and approved by unanimous vote in favor thereof.

A motion was made by Richard Tormoehlen to close the public hearing at 8:02 p.m. and was seconded by Clayton Beard. The motion was approved by unanimous vote in favor thereof.

The regular monthly minutes of the May 2, 2024 meeting had previously been provided to the board members for review and were therefore not read at the meeting. A motion to accept the monthly minutes was made by Tim Steltenpohl and seconded by Robert Akin. The regular monthly minutes were accepted by unanimous vote in favor thereof.

Larry McIntosh reviewed the Treasurer's report for May bills payable June 6, 2024. Richard Tormoehlen moved to pay the monthly bills, which was seconded by Glenn Henry. The motion was approved by unanimous vote in favor thereof.

MANAGER'S REPORT

OLD BUSINESS:

PFAS, PFOA ISSUE – HYDRO TESTING – Larry McIntosh explained that he has been unable to find a hydrogeologist other than Eagon & Associates to obtain an estimate for investigating areas for new wells to deal with the PFAS and PFOA issue. Their proposal back in February was $71,366.00 and will be reimbursed by the SRF loan if approved. After further discussion by the Board, a motion was made by Gloria Baughman to accept the proposal of Eagon and Associates and was seconded by Glenn Henry. The motion was approved by unanimous vote in favor thereof.

Lori Young stated that a letter to the public regarding the PFAS and PFOA issue will be immediately prepared by Chris Janak for signature at the July meeting.

30 DAY FILING TO ADJUST METER TAP FEE – Larry McIntosh did not have any information to provide the Board at this time. The Board chose to discuss raising the tap fee and authorized Larry to raise the fee, but not to exceed $1900.00. A motion was made by Tim Steltenpohl

authorizing Larry McIntosh to proceed with the 30 day filing to adjust the meter tap fee, but not to exceed $1900.00. The motion was seconded by Robert Akin and approved by unanimous vote in favor thereof.

VAC TRUCK – Larry McIntosh informed the Board that he received an email from SRF approving the use of the balance of the SRF funds to purchase the VAC truck, which may need a Resolution and Chris Janak is checking the bond ordinance.

STORM WATER UTILITY – Larry McIntosh reported to the Board that the storm water utility project has been tabled by Brownstown.

BECOMING A WATER AUTHORITY – Larry McIntosh and the Board continued the discussion of opting out of the IURC and becoming a Water Authority. After said discussion, a motion was made by Robert Akin to opt out of the IURC and become a Water Authority. The motion was seconded by Richard Tormoehlen and approved by unanimous vote in favor thereof.

The Board then discussed the new name of the Company and a motion was made by Robert Akin to take the name of Jackson County Water Authority and was seconded by Glenn Henry, but after further discussion the motion was rescinded and a motion was made by Clayton Beard to simply name the company Jackson County Water. The motion was seconded by Richard Tormoehlen and approved by unanimous vote in favor thereof.

NEW BUSINESS:

WELLHEAD PROTECTION – Larry McIntosh stated that the Company has to do the Phase II Five year update.

RENEWAL OF INSURANCE – Larry McIntosh reviewed the property/liability insurance policy with the Board, which needs to be approved at this time, but Larry plans to obtain estimates from other providers. After further discussion by the Board, a motion was made by Gloria Baughman to approve the property/liability insurance renewal and was seconded by Glenn Henry. The motion was approved by unanimous vote in favor thereof.

IDEM INSPECTION – Larry McIntosh presented the Board with the Sanitary Survey Inspection Summary Letters from IDEM for review. IDEM identified a few "minor" deficiencies in the Reddington system, which were related to paperwork only and the main system had six "minor" deficiencies, which have been resolved and included 2 paperwork deficiencies.

WATER PLANT TREATMENT – Tabled

FILING A RATE CASE – Larry McIntosh provided the Board with a letter from Bose McKinney & Evans to the IURC regarding the plans of the Water Company to file a general rate case and obtain financing for the funding of a new treatment plant to address the PFAS issues. The filing of the rate case will occur in July.

LIGHTENING STRIKE ON CLEARSPRING TANK – Larry McIntosh informed the Board that the antenna system on the Clearspring tank was hit by lightening and shut everything down. Larry provided the Board with an estimate in the amount of $9,087.23 from ERS Wireless to make the repairs. After further discussion by the Board, a motion was made by Robert Akin to accept the estimate of ERS Wireless and file a claim with insurance to possibly recoup the funds payable to ERS Wireless. The motion was seconded by Tim Steltenpohl and approved by unanimous vote in favor thereof.

NEXT MEETING – The next regular Board meeting will be held on **Thursday, July 11, 2024** at **7:30 p.m.** at the Spring Street plant at 1119 W. Spring Street, Brownstown, Indiana.

There being no further business, a motion was made by Clayton Beard to adjourn the meeting and was seconded by Robert Akin. The motion was approved by unanimous vote in favor thereof.

Gloria Baughman, Secretary

7-11-24
Date

Attest:

Steve Ritter, President

July 11, 2024
Date

DRINKING WATER SRF PROJECT FINANCING INFORMATION

Proposed Project Costs

a.	Water Supply/Wells cost	$ 3,783,000
b.	Treatment System cost	
c.	Water Storage cost	
d.	Transmission/Distribution System cost	
e.	Lead Service Line Replacement cost	$
f.	**Subtotal Construction Cost**	**$ 3,783,000**
g.	Contingencies (should not exceed 10% of construction cost)	$ 756,600
h.	Non-construction cost e.g., engineering, legal, and financial services related to the project, land costs, start-up costs, and construction inspection	$ 1,733,000
i.	**Total Project Cost (lines f+g+h)**	**$6,272,600**

Ineligible costs (see below) **$**

Proposed Funding Information

a.	Requested SRF Financing	$6,272,600
b.	Co-Source:	$
c.	Co-Source:	$
d.	Co-Source:	$
e.	**Total Funding Sources**	**$ 6,272,600**

CALCULATIONS FOR INELIGBLE COSTS

The following are not eligible for Drinking Water SRF reimbursements:

1. Materials & work done on private property $
2. Grant applications and income surveys completed for other agencies $
3. Project components with the primary intent of promoting economic development and growth $
4. Project components with the sole purpose of providing fire protection $
   Expenses incurred as a part of forming RWDs, CDs, etc., or changing boundaries, or other non-SRF District activities $
5. Costs for preparing Wellhead Protection Plans and other tasks unrelated to the SRF project $
6. Cleaning of equipment or other routine operation and maintenance activities. $
7. **Total Ineligible Costs** **$**

Petitioner's Exhibit 6

SFY 2025 - Drinking Water

Indiana Drinking Water State Revolving Fund (DWSRF) Loan Program
SFY 2025 Project Priority List, September 12, 2024, 1st Quarter Final*
Projects Applying for Financial Assistance in State Fiscal Year 2025 (July 1, 2024 - June 30, 2025)

PPL Rank [1]	PPL Score [7]	Participant	MHI [2, 3]	Population Served	PWSID No(s).	SRF Project No.	Project Description	Lead Service Line Replacement Cost	Emerging Contaminants? [4]	Disadvantaged Community? [5]	Green Project Reserve Category [6]	Current User Rate (per 4,000 gallons) [2]	Estimated Post-Project User Rate (per 4,000 gallons) [2]	Requested Funds	Cumulative Requested Funds	SFY 2025 Fundable Range ($75 Million)
1	134	Huntington / Andrews	$44,570	1,049	5235001	DW160935 02	Regionalization with Andrews, Distribution Improvements + Lead Service Line Replacements	$1,669,000	No	Yes	N/A	$37.95	TBD	$28,454,000	$28,454,000	**Fundable Range $75 Million** *(Borrowers are Eligible for up to $7.5 Million at a Subsidized Rate)*
2	124	Montezuma	$53,152	1,022	5261005	DW233461 02	New Water Treatment Plant	$0	Yes - Mn	Yes	N/A	$44.16	$170.84	$8,235,000	$36,689,000	
3	124	Jackson County Water Utility	$79,088	13,667	5236003/ 5236008	DW243436 05	Source, Storage, Treatment, and Distribution System Improvements	$0	Yes - PFAS, Mn	No	N/A	$50.40	TBD	$29,289,000	$65,978,000	
4	121	Evansville	$52,070	173,000	5282002	DW220482 04	New Water Treatment Plant	$0	Yes - PFAS	Yes	WE, EE	$33.74	$45.86	$299,000,000	$364,978,000	
5	118	Cayuga	$49,449	1,162	5283002	DW232983 03	Regionalization with Lodi and Source, Treatment, and Distribution System Improvements	$0	TBD	Yes	N/A	$23.95	TBD	$11,839,000	$376,817,000	
6	109	Peru	$44,665	11,417	5252016	DW245852 04	Treatment Improvements + Lead Service Line Replacement Phase I	$23,656,000	Yes - Mn	Yes	N/A	$32.73	TBD	$29,216,000	$406,033,000	
7	106	Milford	$46,650	1,556	5243017	DW242243 01	Storage, Treatment, and Distribution Improvements + Lead Service Line Replacement	$1,011,000	Yes - Mn	Yes	WE	$32.41	$96.09	$6,910,000	$412,943,000	
8	98	Union City	$38,306	3,454	5268010	DW241868 01	Source, Treatment, and Distribution Improvements + Lead Service Line Replacement	$1,818,000	No	Yes	N/A	$26.57	$39.54	$20,570,000	$433,513,000	
9	98	Huntington	$53,925	17,022	5235001	DW244035 03	Source Improvements and New Water Treatment Plant	$0	No	No	WE, EE	$40.40	TBD	$36,601,000	$470,114,000	
10	97	Indiana American Water - Terre Haute	$41,230	61,378	5284018	DW245184 03	Treatment Improvements	$0	Yes - PFAS	Yes	N/A	$54.60	$54.60	$50,000,000	$520,114,000	
11	94	Indiana American Water - Charlestown	$66,285	7,430	5210003	DW244710 01	Treatment Improvements	$0	Yes - PFAS	No	N/A	$54.60	$54.60	$8,000,000	$528,114,000	
12	92	Milton	$49,291	650	5289011	DW224189 02	Distribution Improvements (Phase 2)	$920,000	No	Yes	WE	$58.76	TBD	$5,889,000	$534,003,000	
13	92	Indiana American Water - Wabash Mullins	$51,127	11,223	5285003	DW245285 02	Treatment Improvements	$0	Yes - PFAS	Yes	N/A	$54.60	$54.60	$12,000,000	$546,003,000	
14	85	Oxford	$45,833	1,165	5204005	DW223404 02	Source, Storage, and Distribution Improvements + Lead Service Line Replacement	$3,630,000	No	Yes	WE	$46.38	$105.00	$10,227,000	$556,230,000	
15	82	Indiana American Water - Newburgh	$67,772	20,973	5282002	DW244987 01	Treatment Improvements	$0	Yes - PFAS	No	N/A	$54.60	$54.60	$15,000,000	$571,230,000	
16	81	Indiana American Water - Southern Indiana	$67,566	79,958	5210005	DW245010 01	Treatment Improvements	$0	Yes - PFAS	No	N/A	$54.60	$54.60	$85,000,000	$656,230,000	
17	77	Goshen	$45,745	35,000	5220009	DW244420 03	Distribution Improvements + Lead Service Line Replacements	$4,534,000	No	Yes	N/A	$34.23	$35.50	$7,037,000	$663,267,000	
18	75	Indiana American Water - Johnson County	$82,730	82,905	5241005	DW244841 01	Treatment Improvements	$0	Yes - PFAS	No	N/A	$54.60	$54.60	$28,000,000	$691,267,000	
19	73	Brazil	$51,943	12,000	5211001	DW243311 02	Source and Distribution System Improvements	$0	Yes - Mn	Yes	WE, CR	$33.40	$47.04	$12,658,000	$703,925,000	
20	73	Kentland	$55,329	1,735	5256005	DW222156 01	Source and Treatment Improvements	$0	Yes - Mn	No	TBD	$26.13	$80.01	$10,934,000	$714,859,000	
21	73	Glenwood	$68,660	313	5270002	DW233070 03	Regionalization with Connersville and Distribution Improvements	$0	Yes - Mn	Yes	WE, EE	$68.27	$816.57	$13,215,000	$728,074,000	
22	72	Odon	$40,341	1,379	5214005	DW223714 02	Treatment, Storage, and Supply Improvements	$0	Yes - Mn	Yes	EE	$36.24	$70.71	$4,764,000	$732,838,000	
23	72	Hamlet	$55,000	801	5275001	DW243675 01	Distribution System Improvements + Lead Service Line Replacement	$268,000	No	No	WE	$23.56	$49.40	$2,209,000	$735,047,000	
24	70	Valley Rural Utility Company	$112,500	5,529	5215004	DW224615 01	Distribution Improvements + Lead Service Line Replacement	$1,800,000	No	No	WE	$32.68	$80.79	$17,000,000	$752,047,000	
25	68	Morgantown	$50,257	1,125	5255011	DW246055 02	Regionalization with Brown County Water Utility and Distribution System Improvements	$0	Yes - Mn	Yes	EE	$53.16	$86.56	$3,204,000	$755,251,000	
26	66	Pendleton	$81,413	4,840	5248019	DW246248 01	Treatment and Distribution Improvements + Lead Service Line Replacement	$5,305,000	No	No	N/A	$39.96	$70.51	$13,252,000	$768,503,000	
27	65	Anderson	$44,974	58,942	5248002	DW243948 02	Distribution System Improvements - Phase I + Lead Service Line Replacement	$26,228,000	No	Yes	N/A	$21.98	TBD	$80,795,000	$849,298,000	
28	64	Rochester	$65,508	6,089	5225006	DW243025 01	Distribution System Improvements + Lead Service Line Replacement	$966,000	No	No	WE	$18.88	$28.32	$7,275,000	$856,573,000	
29	62	Citizens Energy Group (Indianapolis)	$39,985	936,630	5249004	DW234049 02	Distribution Improvements + Lead Service Line Replacement	$1,300,000	No	Yes	N/A	$29.08	$29.08	$16,992,000	$873,565,000	
30	62	Eaton	$76,036	1,500	5218006	DW232618 01	Source, Treatment, and Distribution Improvements (Phase 2) + Lead Service Line Replacement	$2,400,000	No	No	WE, EE	$43.65	$78.27	$14,526,000	$888,091,000	
31	61	Converse	$54,479	1,265	5252006	DW241552 02	New Water Treatment Plant and Distribution System Improvements	$0	Yes - Mn	No	N/A	$60.00	$98.33	$4,175,000	$892,266,000	
32	61	North Manchester	$63,029	5,277	5285009	DW241985 01	Distribution System Improvements + Lead Service Line Replacement	TBD	No	No	N/A	$31.84	$52.48	$13,325,000	$905,591,000	
33	58	Francesville	$71,538	969	5266001	DW245966 01	New Treatment Plant	$0	Yes - Mn	No	WE	$33.09	$55.92	$1,950,000	$907,541,000	
34	56	New Carlisle	$68,605	1,861	5271011	DW246171 02	Source, Treatment, and Distribution Improvements	$0	Yes - Mn	No	WE, EE	$21.62	$31	$15,299,000	$922,840,000	
35	54	Brookston	$60,370	1,631	5291002	DW243891 02	Source, Treatment, and Distribution System Improvements	$0	Yes - Mn	No	WE	$38.05	$48.05	$1,824,000	$924,664,000	
36	54	Turkey Creek Regional Sewer District Water Utility	$76,923	575	5243012	DW247143 01	Treatment, Storage, and Distribution Improvements	TBD	Yes - Mn	No	WE	$24.77	$37.50	$11,627,000	$936,291,000	
37	53	Winamac	$53,733	2,400	5266005	DW221466 01	Regionalization with Tippecanoe River State Park and Storage and Distribution Improvements	$0	No	Yes	TBD	$37.14	$37.14	$10,113,000	$946,404,000	
38	52	Ingalls	$70,313	7,600	5248012	DW243548 04	Source, Treatment, and Distribution System Improvements	$0	Yes - Mn	No	N/A	$38.96	$44.00	$6,386,000	$952,790,000	
39	51	Westville	$57,889	5,257	5246029	DW241646 01	Treatment, Storage, and Distribution Improvements + Lead Service Line Replacement	TBD	No	No	EE	$39.09	TBD	$24,203,000	$976,993,000	
40	50	Elkhart	$40,345	53,923	5220008	DW247220 02	Distribution System Improvements + Lead Service Line Replacement	$251,000	No	Yes	N/A	$10.20	$13.48	$2,273,000	$979,266,000	
41	49	Salem	$51,562	8,200	5288005	DW233988 01	Distribution Improvements (Phase 1) + Lead Service Line Replacement	$643,000	No	Yes	N/A	$34.92	TBD	$2,298,000	$981,564,000	
42	49	Kingman	$51,944	510	5223004	DW233823 01	Treatment, Storage, and Distribution Improvements	$0	Yes - Mn	Yes	N/A	$42.79	$124.19	$3,636,000	$985,200,000	

43	49	Kouts	$74,609	2,028	5264013	DW233664 02	Storage, Supply, and Treatment Improvements	$0	Yes - Mn	No	WE, EE, EI	$31.47	TBD	$9,400,000	$994,600,000
44	47	East Chicago	$39,434	27,457	5245012	DW224345 07	Storage, Treatment, and Distribution Improvements	$0	TBD	Yes	TBD	$7.36	$35.00	$12,850,000	$1,007,450,000
45	47	Hagerstown	$66,500	1,700	5289008	DW243739 01	Distribution System Improvements + Lead Service Line Replacement	$750,000	No	No	N/A	$31.85	$43.03	$3,326,000	$1,010,776,000
46	46	Indiana American Water - Claypool	$76,815	465	5243002	DW246743 01	New Treatment Plant	$0	Yes - Mn	No	N/A	$54.60	$54.60	$2,495,250	$1,013,271,250
47	44	Hoosier Hills Regional Water District	$71,012	8,642	5269002	DW210469 01	Storage and Distribution System Improvements	$0	No	No	TBD	$34.82	$38.95	$2,642,000	$1,015,913,250
48	43	Lynn	$43,864	1,149	5268004	DW222468 01	Storage and Distribution Improvements	$0	No	Yes	N/A	$36.26	$72.21	$2,123,000	$1,018,036,250
49	42	Mount Ayr	$49,802	117	TBD	DW234456 01	Regionalization with Newton County RWSD and Storage and Distribution Improvements	$0	No	Yes	N/A	N/A	TBD	$6,600,000	$1,024,636,250
50	41	Shoals	$31,134	1,300	5251007	DW246551 01	Source, Treatment, and Distribution Improvements	$0	No	Yes	N/A	$36.75	$77.93	$2,683,500	$1,027,319,750
51	41	Peru	$64,722	11,037	5252016	DW210251 02	Regionalization with Mississinewa Lake Recreation Area	$0	No	No	N/A	$31.23	$31.23	$31,413,000	$1,058,732,750
52	41	Nappanee	$68,750	6,800	5220016	DW244220 03	Treatment and Distribution Improvements + Lead Service Line Replacement	$735,000	No	No	N/A	$41.56	$51.59	$7,681,000	$1,066,413,750
53	41	Wakarusa	$78,583	1,800	5220029	DW223120 01	Source and Treatment Improvements	$0	Yes - Mn	No	WE	$25.00	$60.55	$14,540,000	$1,080,953,750
54	40	Hymera	$45,438	800	5277004	DW231977 01	Storage Improvements	$0	No	Yes	N/A	$48.56	$55.36	$1,478,000	$1,082,431,750
55	40	Marysville-Otisco-Nabb Water	$79,224	6,352	5210006	DW244610 01	Storage and Distribution System Improvements	$0	No	No	N/A	$28.12	$46.10	$7,316,000	$1,089,747,750
56	39	Nashville	$51,042	3,315	5207002	DW233207 02	Distribution Improvements (Phase 1)	$0	No	Yes	N/A	$51.76	$105.00	$16,800,000	$1,106,547,750
57	39	Crown Point	$86,671	30,000	5245008	DW213945 05	Distribution System Improvements + Lead Service Line Replacement	TBD	No	No	N/A	$50.04	$51.92	$2,000,000	$1,108,547,750
58	38	LaFontaine	$53,558	906	5285004	DW223085 02	Source, Treatment, and Distribution System Improvements + Lead Service Line Replacement	$0	No	Yes	N/A	$41.95	$82.15	$4,300,000	$1,112,847,750
59	38	Bloomingdale	$62,500	269	5261001	DW242061 02	Storage, Treatment, and Distribution Improvements	$0	No	No	N/A	$42.23	$58.23	$2,746,000	$1,115,593,750
60	38	Angola	$70,568	8,612	5276001	DW231376 01	Regionalization with Pokagon State Park and Trine State Recreational Area	$0	No	No	TBD	$26.11	$26.11	$7,359,000	$1,122,952,750
61	37	Lewisville	$46,250	337	5233006	DW233733 03	Source, Treatment, and Distribution Improvements	$0	No	Yes	N/A	$53.18	$65.00	$1,622,000	$1,124,574,750
62	37	Camden	$53,750	593	5208001	DW234808 02	Treatment and Distribution System Improvements	$0	No	Yes	WE	$32.92	$65.50	$2,280,000	$1,126,854,750
63	37	Daviess County Rural Water	$64,113	7,969	5214002	DW230414 01	Storage Improvements	$0	No	No	N/A	$45.16	$53.16	$4,667,000	$1,131,521,750
64	37	Perrysville	$77,015	470	5283009	DW242583 02	Storage and Distribution Improvements	TBD	No	Yes	WE	$49.00	$102.46	$2,006,000	$1,133,527,750
65	37	St. Joe	$79,193	460	5217006	DW242717 03	Distribution System Improvements	TBD	No	No	N/A	$31.00	$91.76	$1,615,000	$1,135,142,750
66	36	Earl Park	$62,750	370	5204003	DW242404 02	Distribution System Improvements	$0	No	No	N/A	$35.00	$54.60	$1,424,000	$1,136,566,750
67	36	Swayzee	$67,500	918	5227020	DW222227 03	Treatment and Distribution Improvements	$0	No	No	TBD	$34.13	$67.16	$2,382,000	$1,138,948,750
68	36	Loogootee	$70,143	3,915	5251005	DW210251 01	Storage, Distribution System, and Treatment Improvements + Lead Service Line Replacement	TBD	No	No	N/A	$31.54	$46.35	$2,705,000	$1,141,653,750
69	36	Markle	$79,290	1,095	5235006	DW240290 01	Source, Treatment and Distribution Improvements + Lead Service Line Replacement	$264,000	No	No	N/A	$21.58	TBD	$5,400,000	$1,147,053,750
70	34	Spiceland	$62,292	940	5233016	DW222633 04	Source and Treatment Improvements	$0	Yes - Mn	No	EE, EI	$52.20	$101.40	$6,541,000	$1,153,594,750
71	34	Cynthiana	$68,750	699	5265004	DW244365 01	Storage and Distribution System Improvements	$0	No	No	WE	$67.96	$67.96	$1,131,000	$1,154,725,750
72	34	Ingalls	$70,313	7,600	5248012	DW221148 03	Storage and Distribution Improvements	$0	No	No	N/A	$38.96	$45.00	$2,093,000	$1,156,818,750
73	34	Salt Creek Estates	$82,634	180	5253006	DW242853 01	Source and Treatment Improvements	$0	No	No	N/A	$315.48	$406.00	$3,458,000	$1,160,276,750
74	33	Elwood	$60,117	8,586	5248007	DW245648 02	Distribution System Improvements	$0	No	No	WE	$19.78	$24.70	$2,215,000	$1,162,491,750
75	33	B&B Water Project, Inc	$76,136	5,075	5253001	DW245353 04	Distribution System Improvements	TBD	No	No	N/A	$49.50	TBD	$6,901,000	$1,169,392,750
76	33	Princes Lakes	$78,642	4,095	5241007	DW241307 02	Storage and Distribution System Improvements	$0	No	No	N/A	$29.11	$39.67	$7,782,000	$1,177,174,750
77	32	South Whitley	$62,727	1,709	5292007	DW240392 02	Distribution Improvements + Lead Service Line Replacements	TBD	No	No	N/A	$48.19	$150.00	$13,270,000	$1,190,444,750
78	32	Tipton	$64,167	5,200	528004	DW230380 01	Treatment and Storage Improvements	$0	No	No	N/A	$37.15	$37.15	$2,541,000	$1,192,985,750
79	32	Churubusco	$67,273	1,798	5292003	DW240192 02	Storage and Distribution Improvements	$0	No	No	WE	$43.78	$59.02	$5,065,000	$1,198,050,750
80	32	Middlebury	$78,056	3,572	5220014	DW231120 02	Treatment and Storage Improvements + Lead Service Line Replacement	TBD	No	No	N/A	$36.66	$76.43	$18,238,000	$1,216,288,750
81	31	Logansport	$51,958	18,369	5209012	DW245709 03	New Source	$0	No	Yes	N/A	$32.61	$35.75	$5,420,000	$1,221,708,750
82	30	Cloverdale	$46,354	2,060	5267003	DW223267 01	Distribution Improvements	$0	No	Yes	WE	$38.86	$53.38	$4,970,000	$1,226,678,750
83	30	Shirley	$61,250	960	5233013	DW223930 01	Source and Treatment Improvements	$0	No	No	TBD	$50.67	$93.15	$3,384,000	$1,230,062,750
84	29	Reelsville	$69,722	2,800	5267006	DW221167 04	Distribution Improvements (Phase 2)	$0	No	No	N/A	$69.23	TBD	$25,000,000	$1,255,062,750
85	27	Dublin	$56,641	709	5289005	DW245589 01	Source, Treatment, Storage, and Distribution Improvements	$0	No	No	N/A	$41.03	$225.66	$19,652,000	$1,274,714,750
86	26	Hebron	$89,940	3,724	5264009	DW242364 02	Storage and Treatment Improvements	$0	No	No	N/A	$51.56	TBD	$6,143,000	$1,280,857,750
87	21	Elkhart County Regional Sewer District	$93,123	3,849	TBD	DW230720 01	New Water Utility	$0	No	No	N/A	N/A	$56.33	$13,120,000	$1,293,977,750
88	20	Citizens Energy Group (Indianapolis)	$92,188	334,652	5249004	DW246949 04	Ohio Street Main Replacement	$0	No	No	N/A	$29.08	$29.08	$2,500,000	$1,296,477,750
--	48	Jasonville	$37,866	3,660	5228004	DW247311 03	Emergency WTP Rehab	$0	No	Yes	N/A	$43.01	$49.98	$3,828,583	$1,300,306,333

TOTAL REQUESTED FUNDS															$1,300,306,333	
								$78,148,000								
PPL Rank [1]	PPL Score	Participant	MHI [2, 3]	Population Served	PWSID No(s).	SRF Project No.	Project Description	Lead Service Line Replacement Cost	Emerging Contaminants?	Disadvantaged Community?	Green Project Reserve Category [4]	Current User Rate (per 4,000 gallons) [2]	Estimated Post-Project User Rate (per 4,000 gallons) [2]	Estimated Total Project Cost	Cumulative Total
Application Only		Crothersville	$44,900	1,524	5236001	DW231736 01	Storage and Distribution Improvements + Lead Service Line Replacements	TBD	TBD	Yes	TBD	$57.30	$60.00	$10,647,000	$10,647,000
Application Only		Knightstown	$55,000	2,223	5233005	DW231833 01	Storage and Distribution Improvements	$0	TBD	No	TBD	$35.86	$43.00	$15,608,000	$26,255,000
Application Only		Lapel	$69,028	2,442	5248013	DW247548 03	Distribution Improvements	$0	TBD	No	TBD	$48.02	TBD	$300,000	$26,555,000
Application Only		Palmyra	$33,077	4,425	5231004	DW232331 02	Treatment and Distribution Improvements	$0	TBD	Yes	TBD	$73.85	$73.85	$4,528,000	$31,083,000
Application Only		Switz City	$38,500	887	5228009	DW247628 02	Distribution Improvements	$0	TBD	Yes	TBD	$46.37	TBD	$400,000	$31,483,000
Application Only		Valparaiso Lakes Area Cons. District	$67,273	2,565	5264033	DW222064 01	Distribution Improvements	$0	TBD	No	TBD	$41.00	$43.24	$340,000	$31,823,000
TOTAL REQUESTED FUNDS - APPLICATIONS ONLY								$0						$31,823,000	
TOTAL REQUESTED FUNDS - PERs & APPLICATIONS								$78,148,000						$1,332,129,333	

Footnotes:

[1] A community must submit a complete Preliminary Engineering Report to the DWSRF Loan Program by April 1, 2024 in order for the project to be scored and ranked on the Project Priority List (PPL).

[2] Additional subsidization may be provided to participants who have a low Median Household Income (MHI) and/or high post-project user rates as outlined in the Intended Use Plan (IUP). The amount of the additional subsidization shall be determined and set forth in the financial assistance agreement.

[3] The Indiana DWSRF Loan Program defines a Disadvantaged Community in Section VII of the IUP.

[4] Emerging Contaminants funds are reserved for DWSRF eligible projects whose primary purpose must be to address emerging contaminants, with an emphasis on PFAS, using the broad CCL 1 - 5.

[5] Disadvantaged Community determinations in this PPL are based on MHI and rates provided at the time the PPL was posted for public notice. Additional information on populations positively impacted by the project may be submitted and considered prior to loan closing.

[6] EE = Energy Efficiency, EI = Environmentally Innovative, GI = Green Infrastructure, WE = Water Efficiency, CR = Climate Resiliency.

[7] All scores are out of a maximum of 200 points.

*The SFY 2025 1st Quarter Project Priority List Draft was published on June 17, 2024 for a 3-week public comment period.