



State Revolving Fund Loan Programs

Drinking Water, Wastewater, Nonpoint Source

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

JACKSON COUNTY WATER UTILITY INC. JACKSON COUNTY WATER SYSTEM IMPROVEMENTS STATE REVOLVING FUND PROJECT # DW 14123601

DATE: October 15, 2014

TARGET APPROVAL DATE: November 14, 2014

I. INTRODUCTION

The above entity has applied to the State Revolving Fund (SRF) Loan Program for a loan to finance all or part of the drinking water project described in the Environmental Assessment (EA) attached to this Finding of No Significant Impact (FNSI). As part of facilities planning requirements, an environmental review has been completed which addresses the project's impacts on the natural and human environment. This review is summarized in the attached EA, which can also be viewed at <http://www.in.gov/ifa/srf/>.

II. PRELIMINARY FINDING OF NO SIGNIFICANT IMPACT (FNSI)

The SRF has evaluated all pertinent environmental information regarding the proposed project and determined that an Environmental Impact Statement is not necessary. Subject to responses received during the 30-day public comment period, and pursuant to Indiana Code 4-4-11, it is our preliminary finding that the construction and operation of the proposed facilities will result in no significant adverse environmental impact. In the absence of significant comments, the attached EA shall serve as the final environmental document.

III. COMMENTS

All interested parties may comment upon the EA/FNSI. Comments must be received at the address below by the target project approval date. Significant comments may prompt a reevaluation of the preliminary FNSI; if appropriate, a new FNSI will be issued for another 30-day public comment period. A final decision to proceed, or not to proceed, with the proposed project shall be effected by finalizing, or not finalizing, the FNSI as appropriate. Comments regarding this document should be sent within 30 days to:

Amy Henninger
Compliance Officer
State Revolving Fund -- IGCN 1275
100 N. Senate Ave.
Indianapolis, IN 46204
317-232-6566
ahenning@ifa.in.gov

**ENVIRONMENTAL
ASSESSMENT**

I. PROJECT IDENTIFICATION

Project Name and Address: Jackson County Water System Improvements
Jackson County Water Utility Inc
1118 W Spring St
Brownstown, IN 47220

SRF Project Number DW 14123601

Authorized Representative: Ms Gloria Baughman, President of the Board

II. PROJECT LOCATION AND BACKGROUND

The Jackson County Water Utility's (JCWU) current service area generally includes all of Jackson County and fringe areas in Bartholomew County, Jennings Country, Lawrence County and Brown County. The City of Seymour, the Town of Crothersville and the Town of Medora are not served by the JCWU. There are multiple project sites included in the proposed project (figure 1.2.8). The Water Treatment Plant and Well Field are located in the Brownstone quadrangle in Township 5N Range 4E, Sections 10 & 11; the Emergency Connection project is located in the Azalia quadrangle in Township 7N Range 6E, Section 23; the Acme Water Tank is located in the Brownstone quadrangle in Township 7N, Range 4E, Section 35; The Rural Booster Station and Transmission Main East projects are located in the Brownstown and Kurtz quadrangle in Township 6N Range 4E Sections 28, 29 30 & 31 and in Township 6N Range 3E Section 36; McHargue Road water main replacement is located in the Medora quadrangle in Township 5N Range 3E, Sections 22, 23, 26 & 27 and Township 5N Range 3E Section 15; the Water Street Water Main Replacement project is located in the Brownstown quadrangle in Township 5N, Range 4E, Section 14, and the Ewing Street Water Main Replacement project is located in the Brownstown quadrangle in Township 5N, Range 4E, Section 11 (Figure 1.2.8).

III. PROJECT NEED AND PURPOSE

The Jackson County Utility Inc. system consists of a groundwater supply, storage tanks, booster stations and distribution system. The system has been satisfactorily maintained but requires upgrades to continue to meet the public health needs of the service area. The areas of need include:

- Raw Water Main Flushing – Iron, manganese and hardness in the raw water precipitate in the raw water main and accumulate over time. These deposits reduce the cross sectional area of the raw water main, causing increased friction loss and pumping costs. They can also cause slugs of deposited material to flush into the water plant periodically, which can upset the treatment systems. The existing raw water main configuration does not have good accessibility to flush and clean pipes by “pigging”. Access facilities for regular pigging and flushing of the raw water

main are needed to provide for routine maintenance needs.

- Sodium Hydroxide Facilities – Sodium hydroxide is critical to the water softening and removal of iron and manganese. Sodium hydroxide is a strong base and is very corrosive and it is important that facilities remain in good shape to protect human operators. The sodium hydroxide facilities installed in 1986 need to be rehabilitated due to the corrosion and wear on equipment over nearly 30 years of operation.
- Carbon Dioxide Tank Replacement – Carbon dioxide is delivered to a bulk storage tank, and fed from that tank into the water treatment process. The existing bulk tank was purchased as a reconditioned, used tank. The carbon dioxide supplier, Praxair Company, has threatened to discontinue delivery because the carbon dioxide tank does not have an ASME pressure vessel certification.
- Secure Operational Space – A small addition to the existing office building is needed for new data processing equipment. There is not space in the current facility to provide proper security and environmental control for customer information and billing systems. Control of temperature, humidity and dust are important for protection of the computer equipment. The data processed daily by the JCWU office is valuable and confidential. A new room would enable the equipment and data to be secured with limited public and employee access control for the purpose of improved protection of customer information. Design for proper climate control in this special use room will aid to protect equipment and documents. The design of the special use room will also help to reduce the risk of vandalism and theft.
- Pipe Storage Building Repair – The Pipe Storage Building requires repair of the roof and walls in order to extend the functional life of the building.
- Acme Tank Replacement – The Acme Tank is a critical component in the distribution system. The Acme Tank's coatings are in very poor condition and the steel is deteriorating from corrosion. The tank needs to be repainted or replaced. The tank has lead paint on the interior and exterior surfaces. Bids were received for recoating of this tank in 2013. The bid price for sandblasting, containing, recoating, and disposal of lead paint residue was \$123,500. Due to the high cost of painting, age of the tank, and need for greater storage capacity and tank height in this network, replacing the tank is the best alternative to meet JCWUs needs in the Acme Network.
- Water Transmission Main from Rural Booster Station to Clearspring Network – The existing water transmission main from the Rural Booster Station to the Clearspring Network was constructed of 8" cast iron pipe in the early 1970s. This critical transmission main to the Clearspring Tank serves approximately 1,125 customers. This segment of 27,000 linear feet of water main has experienced numerous leaks.
- Water Transmission Main on McHargue Rd to SR 235 and CR 225 South – The existing 6" cast iron water transmission main was installed as part of the original system. This water main has a history of major water leaks for the past 25 years. Approximately 15,800 feet of 6" water main needs to be replaced with new 8" PVC water main. Galvanic corrosion has significantly damaged the existing water main. Pressure rated PVC water main would be a better pipe material in this location due to the corrosive soils.
- Rural Booster Stations – The Rural Booster Station was constructed in the early 1970s and nearly all of the equipment is original. This booster station pumps to three distinct water distribution system networks designated as Freetown, Clearspring and Acme. A separate water booster pump is dedicated to each of the water distribution system networks, pumping to the

corresponding tank. The majority of the equipment is deteriorated and obsolete. The pumping and piping equipment in the Rural Booster Station are at the end of their useful life and need to be replaced. Hydraulic conditions of the distribution system have changed since original design due to growth of the utility. New pumps, valves and piping are needed to replace the existing equipment. VFD controls on pumps are needed to reduce water hammer, provide operational flexibility, and improve pumping efficiency.

- Standby Water Connection to Jennings Water, Inc. – An emergency service connection to Jennings Water, Inc., is needed to provide a back-up source of water to the Reddington Network. JCWU purchases water from Indiana American Water Company at Seymour to serve approximately 400 customers in the Reddington area. This segment of the distribution system is not currently connected to JCWU's central distribution system. Jennings Water, Inc. has a 10" PVC water transmission main at US 31 and CR 110 North, in Jackson County. JCWU has an existing 6" PVC water main at the east side of this intersection, which crosses the Jennings Water transmission main on the south side of the road. The close proximity of these water mains provides an ideal location for an emergency service connection. Jennings Water, Inc. produces soft water compatible with the soft water produced by JCWU. The water purchased from Indiana American Water Company is not softened. This emergency connection could potentially become a future point of wholesale purchase from Jennings Water, Inc.
- Water Meter Replacement - JCWU serves approximately 5,300 customers. Of those, approximately 2,000 currently have meters with automatic meter reading (AMR) capabilities. The remaining 3,300 meters are older models that require manual reading and need to be replaced with AMR meters.
- Water and Ewing Streets Water Main Replacement – JCWU has prioritized these two areas in Brownstown that have older, undersized galvanized steel lines (1-2 inches), which are plagued with frequent main breaks. In addition, the service lines in these areas have lead "gooseneck" connections to the water main that need to be replaced. Replacing the water mains must also include replacing service lines from the new water main to the existing water meter. All components are owned by the utility.

IV. PROJECT DESCRIPTION

The proposed project involves:

- Replacing the three main pumps and one standby pump, adding variable speed drives and replacing all piping and valves at the Rural Booster Station (Figure 5.4.1a);
- Replacing 27,000 linear feet of the existing 8" water main from the Rural Booster station west to the Clearspring Network with a new 10" PVC main (Figure 5.4.1a-d);
- Replacing 15,000 linear feet of existing 6" cast iron water main from the McHargue Road, south along SR 235 to CR 275 S and to Roller Road with a new 8" PVC water main (Figure 5.4.2a-c);
- Replacing approximately 3,300 meters, within existing meter pits, throughout the system with AMR meters;
- Installation of a master meter and vault to create an emergency connection from the Jackson County system to the Jennings Water Company (Figure 5.4.3);
- The construction of a new 600,000 gallon water tower to replace the existing 300,000 gallon Acme tank (Figure 5.4.4);

- Rehabilitation of the sodium hydroxide room at the water treatment plant by replacing all equipment and piping, repairing the containment pit, replacement of grating and supports, replacement of chemical feed piping, ventilation improvements, addition of spill monitoring equipment and replacement of the access doors to the room (Figure 1.2.2);
- Replacing the existing carbon dioxide bulk tank at the water treatment plant (Figure 1.2.2);
- Making improvements to the technology center at the water treatment plant (Figure 1.2.2);
- The construction of a small raw water main pipe swabbing facilities in the existing well field and at the water treatment plant (Figure 1.2.2 and 5.4.5) ;
- Rehabilitation of the pipe storage building which will include repair and replacement of the roof, masonry wall repair, replacement of doors, floor repair and building painting (Figure 1.2.2);
- Replacing 1,220 linear feet of galvanized steel water main in the Brownstown Water Street area with 6" PVC water main (Figure 1.2.7);
- Replacing 1,978 linear feet of galvanized steel water main in the Brownstown Ewing Street with 4" PVC water main (Figure 1.2.7).

V. ESTIMATED PROJECT COSTS, AFFORDABILITY AND FUNDING

A. Selected Plan Estimated Cost Summary:

DESCRIPTION	ESTIMATED COSTS
1. Rural Booster Station Rehabilitation	\$ 117,900
2. Water Main from Rural Booster to Clearspring	923,100
3. McHargue Road Water Main	434,950
4. Water Meter Replacement	897,500
5. Emergency Standby Connection to Jennings Water	45,300
6. Water Storage – Acme Tank	484,000
7. Sodium Hydroxide Room Rehabilitation	80,300
8. Carbon Dioxide Tank Replace	135,000
9. Technology Center Expansion	80,000
10. Raw Water Main Pipe Swabbing	50,000
11. Pipe Storage Building Rehabilitation	100,000
12. Water Street Water Main Replacement	118,490
13. Ewing Street Water Main Replacement	131,510
Construction Sub-Total	\$ 3,598,050
Contingency	304,805
Construction Total	\$ 3,902,855
*Non-Construction Total	\$ 897,656
Total Estimated Project Cost	\$ 4,800,511

*Non-construction costs include design engineering, construction engineering, legal and financial fees.

- B.** Jackson County Water, Inc. will finance the project improvements up to the maximum amount of approximately \$4,800,500 through a 20-year SRF loan at a fixed interest rate to be determined at the loan closing.

VI. DESCRIPTION OF EVALUATED ALTERNATIVES

The city evaluated the no-action alternative and rejected it, since the deficiencies listed above would continue and would not be corrected. The above were chosen based on cost-effectiveness, practicality, technical feasibility, ease of implementation and environmental soundness.

VII. ENVIRONMENTAL IMPACTS OF THE FEASIBLE ALTERNATIVES

A. Direct Impacts of Construction and Operation

Disturbed / Undisturbed Land: Construction will primarily occur in areas previously disturbed by construction activity. Water main installation from the Rural Booster station and along McHargue Road will include undisturbed land, as will the construction of the proposed Acme Water Storage Tank. An archaeology report on these areas was completed and provided to the DHPA for review.

Structural Resources: Construction and operation of the project will not alter, demolish or remove historic properties. If any visual or audible impacts to historic properties occur, they will be temporary and will not alter the characteristics that qualify such properties for inclusion in or eligibility for the National Register of Historic Places. The SRF's finding pursuant to Section 106 of the National Historic Preservation Act is: "no historic properties affected."

Wetlands: Wetlands will not be impacted by the construction or operation of the project.

Surface Waters: The project will not adversely affect waters of high quality listed in 327 IAC 2-1-2(3), exceptional use streams listed in 327 IAC 2-1-11(b), Natural, Scenic and Recreational Rivers and Streams listed in 312 IAC 7-(2), Salmonid Streams listed in (327 IAC 2-1.5-5(a)(3), or waters on the Outstanding Rivers list. The Booster station water main and McHargue Rd project will include seventeen stream crossings installed via open-cut and bore methods.

Floodplain: The Rural Booster Station and the Pipe Storage Building are currently located in the 100-year floodplain. The water main from the Rural Booster Station to Clearspring, the McHargue Road water main, the raw water main pipe swabbing facility and the water meter replacements will have portions of the project within the 100-year floodplain. The Utilities PER states: *the SWCD will routinely inspect the construction area to ensure that appropriate measures are taken to minimize erosion and sediment transport off-site.*

Groundwater: The project will not adversely affect groundwater and dewatering is not expected.

Plants and Animals: Minor tree removal is expected to install the Rural Booster Station water main and the McHargue Road water main. The construction and operation of the project will not negatively impact state or federal-listed endangered species and their habitat. Mitigation

measures cited in comment letters from the Indiana Department of Natural Resources and U.S. Fish and Wildlife Service will be implemented.

Prime Farmland: The project will not cause a conversion of prime farmland.

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

Open Space and Recreational Opportunities: The construction and operation of the proposed project will neither create nor destroy open space or recreational opportunities.

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

National Natural Landmarks: Construction and operation of the proposed project will not impact National Natural Landmarks.

B. Indirect Impacts

The Utility's Preliminary Engineering Report (PER) states: *The utility will ensure that future drinking water infrastructure projects connecting to the SRF-funded facilities will not adversely affect wetlands, wooded areas, steep slopes, archaeological/historical/ structural resources, or other sensitive environmental resources. The utility will require new drinking water infrastructure projects to be constructed within the guidelines of the U.S. Fish and Wildlife Service, IDNR, IDEM, and other environmental review authorities.*

C. Comments from Environmental Review Authorities

In correspondence dated May 27, 2014 the Natural Resources Conservation Service stated: *The proposed project regarding the water utility's improvements in Jackson County, Indiana, as referred to in your letter received May 23, 2014, will not cause a conversion of prime farmland.*

In correspondence dated September 23, 2014 the U.S. Fish and Wildlife Service stated: *The proposed project consists of installation of new water main, replacement of existing water main, construction of a new water tower, upgrades to an existing booster station, and various other improvements. A majority of the proposed construction is within existing right-of-ways or on previously disturbed ground. The project will require several stream crossings and work within wetland areas. We do not anticipate significant impacts on fish and wildlife resources from this project, but we recommend the following mitigation measure to minimize impacts.*

- 1. Avoid or minimize removal of mature native hardwood trees within the construction corridor.*
- 2. Use directional drilling at all stream crossings to avoid stream and riparian impacts*
- 3. If directional drilling is not feasible, construct the stream crossings during a low flow*

period and use best management practices to prevent erosion and soil runoff to the streams.

4. Establish vegetated buffer strips along stream banks after work is completed. Buffer strip widths should be at least 10 feet and preferably 25 feet.
5. Avoid disturbance within the stream channel during the fish spawning season (April 1 – June 30). Ephemeral streams, agricultural ditches and badly degraded streams can be excluded from this recommendation.

In correspondence dated September 18, 2014 the Department of Natural Resources Division of Water stated: *The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.*

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

Regulatory Assessment: *This proposal will require the formal approval for construction in a floodway under the Flood Control Act, IC 14-28-1, unless it qualifies for a general license under Administrative Rule 312 LAC 10-5 that applies to utility line crossings. Please include a copy of this letter with the permit application if the project does not meet the general license criteria.*

There were no details provided for the proposed raw water main pipe swabbing facility. The site is located within the floodway of East Fork White River. A construction in the floodway permit may be required for this portion of the project as well. Please contact the Division of Water's Technical Services Section at (317) 232-4160 if you are unsure whether or not a permit will be required.

Natural Heritage Database: *The Natural Heritage Program's data have been checked. The mussel species below have been documented in the East Fork White River within 1/2 mile northwest of the Water Treatment Plant and Well Field.*

1. Clubshell (*Pieurobema clava*); federally and state endangered
2. Fanshell (*Cyprogenia stegaria*); federally and state endangered
3. Rabbitsfoot (*Quadrula cylindrica cylindrica*); fed. threatened and state endangered
4. Round Hickorynut (*Obovaria subrotunda*); state endangered
5. Pyramid Pigtoe (*Pieurobema pyramidatum*); state endangered
6. Kidneyshell (*Ptychobranchnus fasciolaris*); state special concern

Fish & Wildlife Comments: *None of the mussel species above are still found live in this stretch of the East Fork White River; therefore, we do not foresee any impacts to these species resulting from the project.*

Avoid and minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensate for impacts. The following are recommendations that address potential impacts identified in the proposed project area:

- 1) *Directional Boring: We recommend that all creek or stream crossings be done using a trenchless method. If the open-trench method is necessary and the only feasible option at any of the planned stream crossings due to the site conditions, then the following measures should be implemented:*
 - a) *Any open-trench stream crossing should be timed to coincide with the low-water time of year (typically mid- to late-summer).*
 - b) *Restore disturbed stream banks using bioengineering bank stabilization methods and revegetate disturbed banks with native trees, shrubs and herbaceous plants. Stream bank slopes after project completion should be restored to stable-slope steepness (not steeper than 2:1). Information about bioengineering techniques can be found at <http://www.in.gov/legislative/iac/20120404-IR-312120154NRA.xml.pdf>. Also, the following is a USDA/NRCS document that outlines many different bioengineering techniques for stream bank stabilization: <http://directives.sc.egov.usda.gov/17553.wba>.*
 - c) *The cleared width through any forested area should be the minimum needed to install the line and no more than 20 feet wide through the forested area to allow the canopy to close over the line.*
 - d) *Use graded stone or riprap to protect the section of trench below the normal water level from scour or erosion (any stone or riprap fill in the streambed must remain at the existing streambed level to avoid creating a fish passage obstruction).*
- 2) *Riparian Habitat: We recommend a mitigation plan be developed (and submitted with the permit application, if required) if habitat impacts will occur. The DNR's Floodway Habitat Mitigation guidelines (and plant lists) can be found online at: <http://www.in.gov/legislative/iac/20140806-IR-312140295NRA.xml.pdf> Impacts to non-wetland forest over one (1) acre should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to wetlands should also be mitigated at the appropriate ratio. The mitigation site should be located in the floodway, downstream of the one (1) square mile drainage area of that stream (or another stream within the 8-digit HUC, preferably as close to the impact site as possible) and adjacent to existing forested riparian habitat.*

The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:

1. *Revegetate all bare and disturbed areas in the floodway with a mixture of native grasses, sedges, wildflowers, and also native hardwood trees and shrubs as soon as possible upon completion. Do not use any varieties of Tall Fescue or other non-native plants (e.g. crown-vetch).*
2. *Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.*
3. *Do not work in the waterway from April 1 through June 30 without the prior written*

approval of the Division of Fish and Wildlife.

4. *Do not cut any trees suitable for Indiana bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark) from April 1 through September 30.*
5. *Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.*
6. *Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.*
7. *Seed and protect disturbed stream banks and slopes that are 3:1 or steeper with biodegradable heavy-duty erosion control blankets (follow manufacturer's recommendation for installation); seed and apply mulch on all other disturbed areas.*

This document is the first notice to the Division of Historic Preservation and Archaeology.

VIII. MITIGATION MEASURES

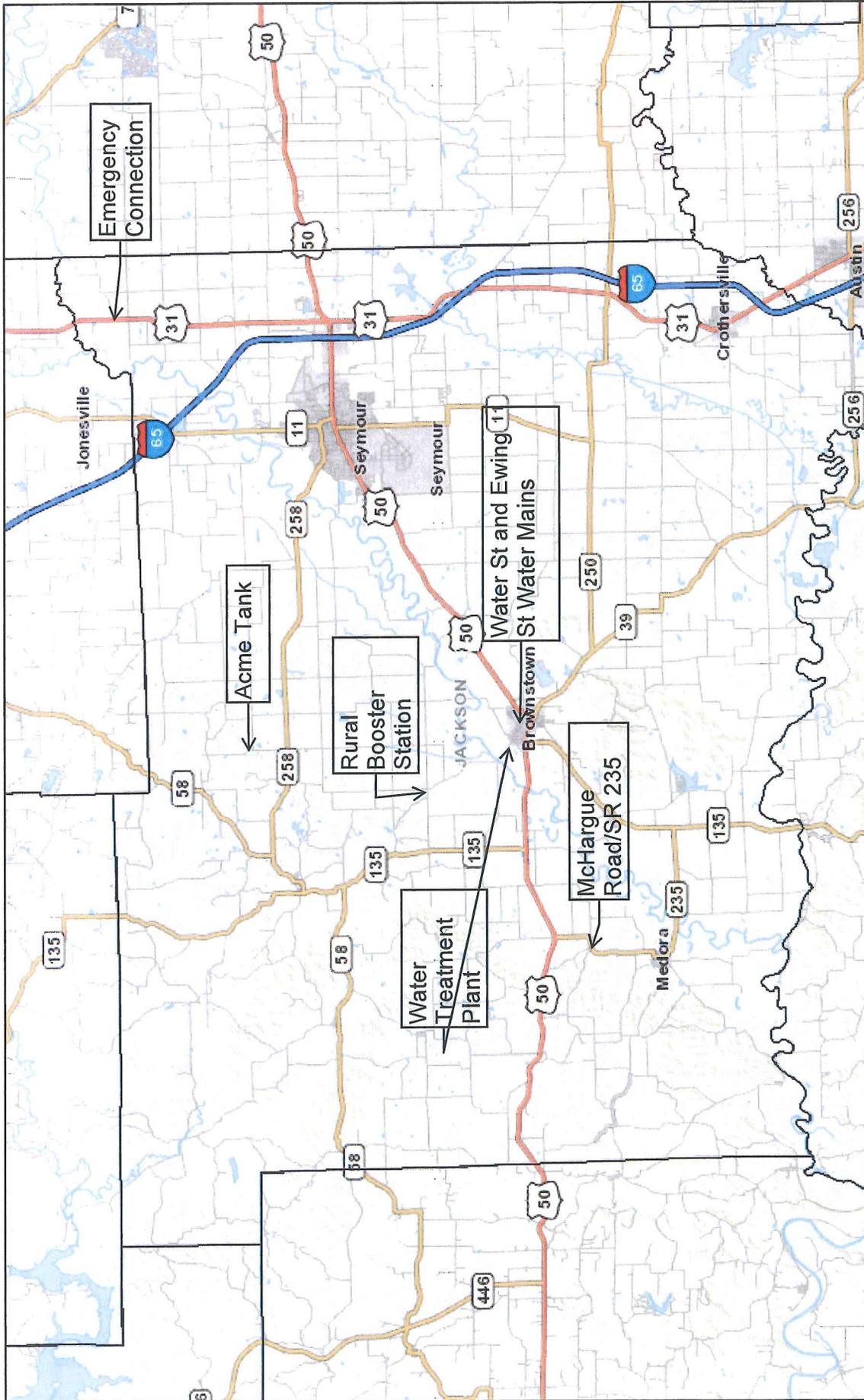
The Jackson Water Utility, Inc. states in their PER that: *Precautions shall be taken during construction to prevent erosion and sediment transport. Project plans shall include requirements for construction sequencing and both temporary and permanent erosion control measures. All disturbed areas shall 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.

IX. PUBLIC PARTICIPATION

A properly publicized public hearing was held at 7:00 p.m., on May 8, 2014, at the utility office located at 1119 West Spring St, Brownstown, IN 47220. There were no questions raised during the hearing and the utility received no written comments in the ten day post-hearing period.

Figure 1.2.8 - Jackson County Water Utility Overall Project Location Map



July 31, 2014

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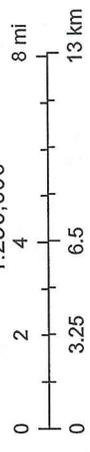
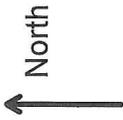


Figure 5.4.1a: Rural Booster Station and Main: Floodplain and Wetland Map



March 26, 2014

- Rivers (NHD)
- Streams (NHD)
- Streams (Local-Resolution NHD, 2013)
- Stream Features
- Wetland Lines
- Wetland Points
- Wetlands
- Rivers - Inventory (NPS)
- Rivers - Outstanding (NRC)

Revised Sept 18, 2014

Figure 5.4.1c: Rural Booster Station Main: Floodplain and Wetland Map

North

Match to Figure 5.4.1b

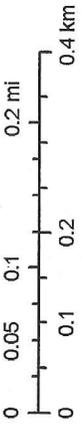


Match to Figure 5.4.1d

March 26, 2014



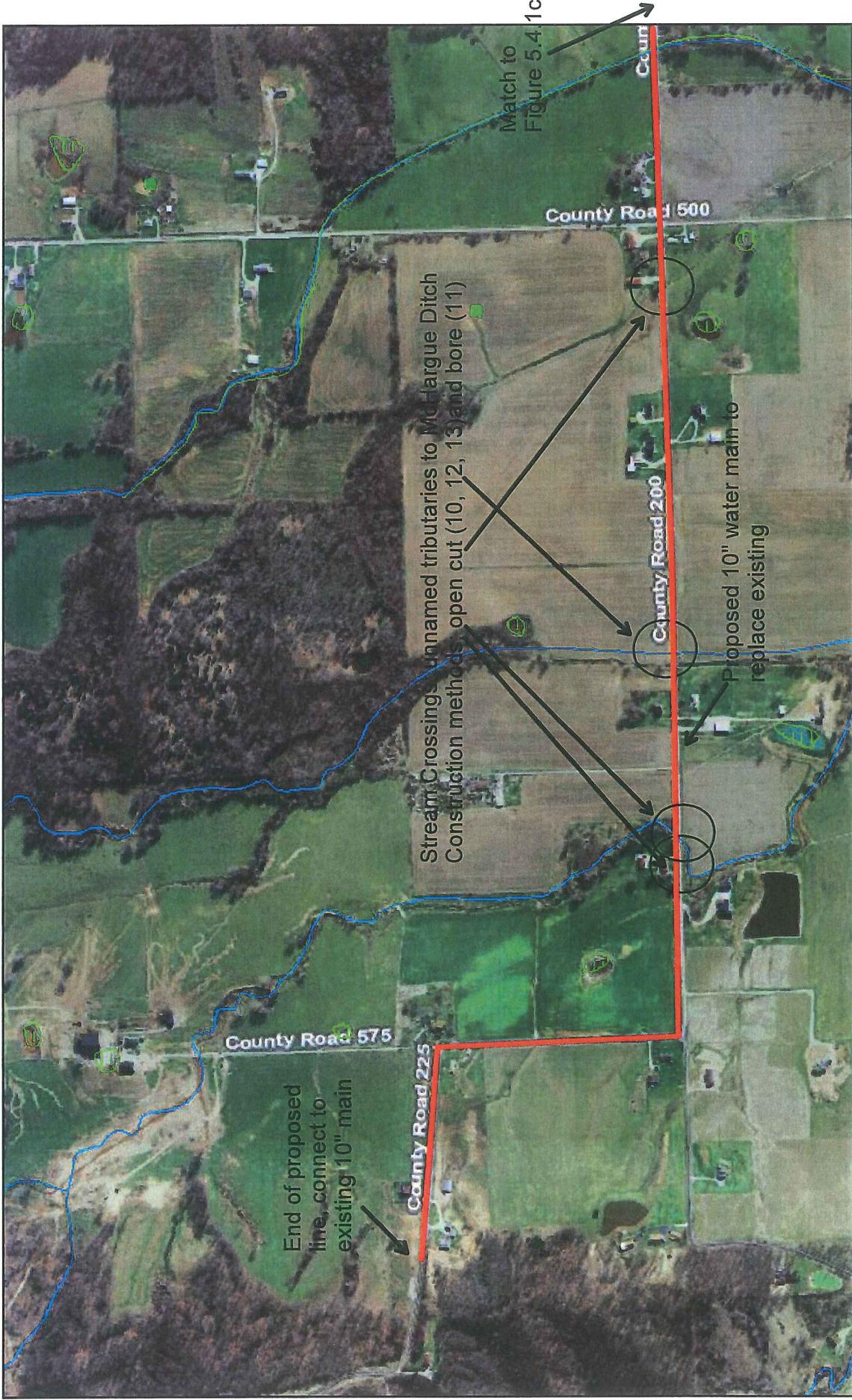
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*See Table 5.4.1

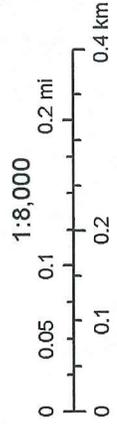
Revised Sept 18, 2014

Figure 5.4.1d: Rural Booster Station Main - Floodplain and Wetland Map



March 26, 2014

- Rivers (NHD)
- Streams (NHD)
- Streams (Local-Resolution NHD, 2013)
- Stream Features
- Rivers - Inventory (NPS)
- Rivers - Outstanding (NRC)
- Wetland Lines
- Wetland Points
- Wetlands



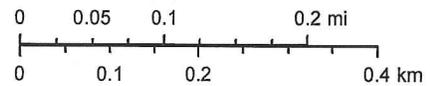
Revised Sept 18, 2014

Figure 5.4.2a: McHargue Road and SR 235 Main - Floodplain and Wetland Map



March 26, 2014

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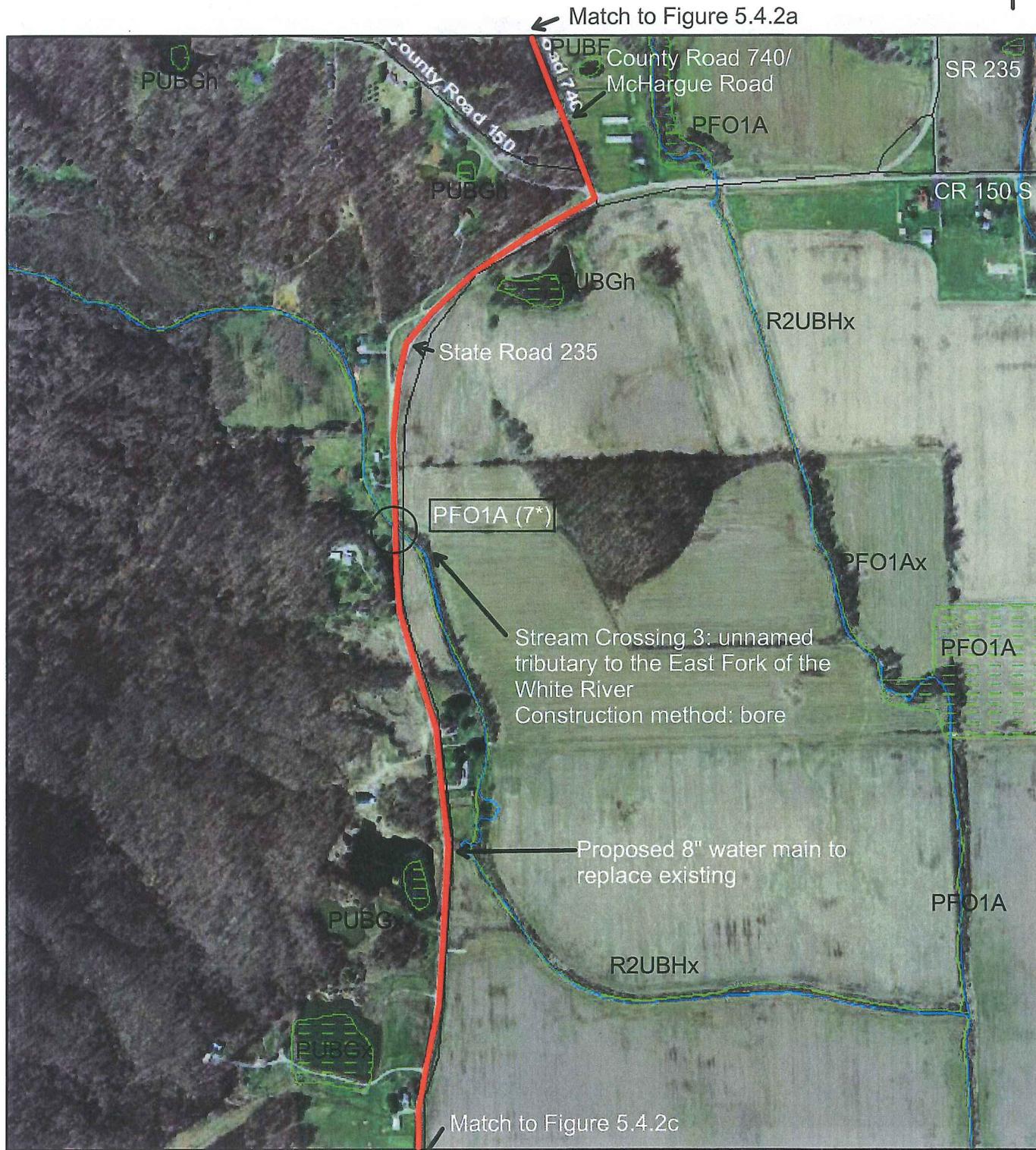


*See Table 5.4.1

Revised Sept 18, 2014

- | | |
|--|---------------------------------------|
| — Roads 2005 (TIGER - unlabeled) | — Wetland Lines |
| ■ Rivers (NHD) | ■ Wetland Points |
| — Streams (NHD) | ■ Wetlands |
| — Streams (Local-Resolution NHD, 2013) | ■ 0.2% Risk (aka 500-year Flood Zone) |
| ● Stream Features | ■ 1% Risk (aka 100-yr Flood Zone) |
| — Rivers - Inventory (NPS) | ■ Floodway |
| — Rivers - Outstanding (NRC) | |

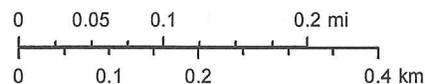
Figure 5.4.2b: McHargue Road and SR 235 Main - Floodplain and Wetland Map



March 26, 2014

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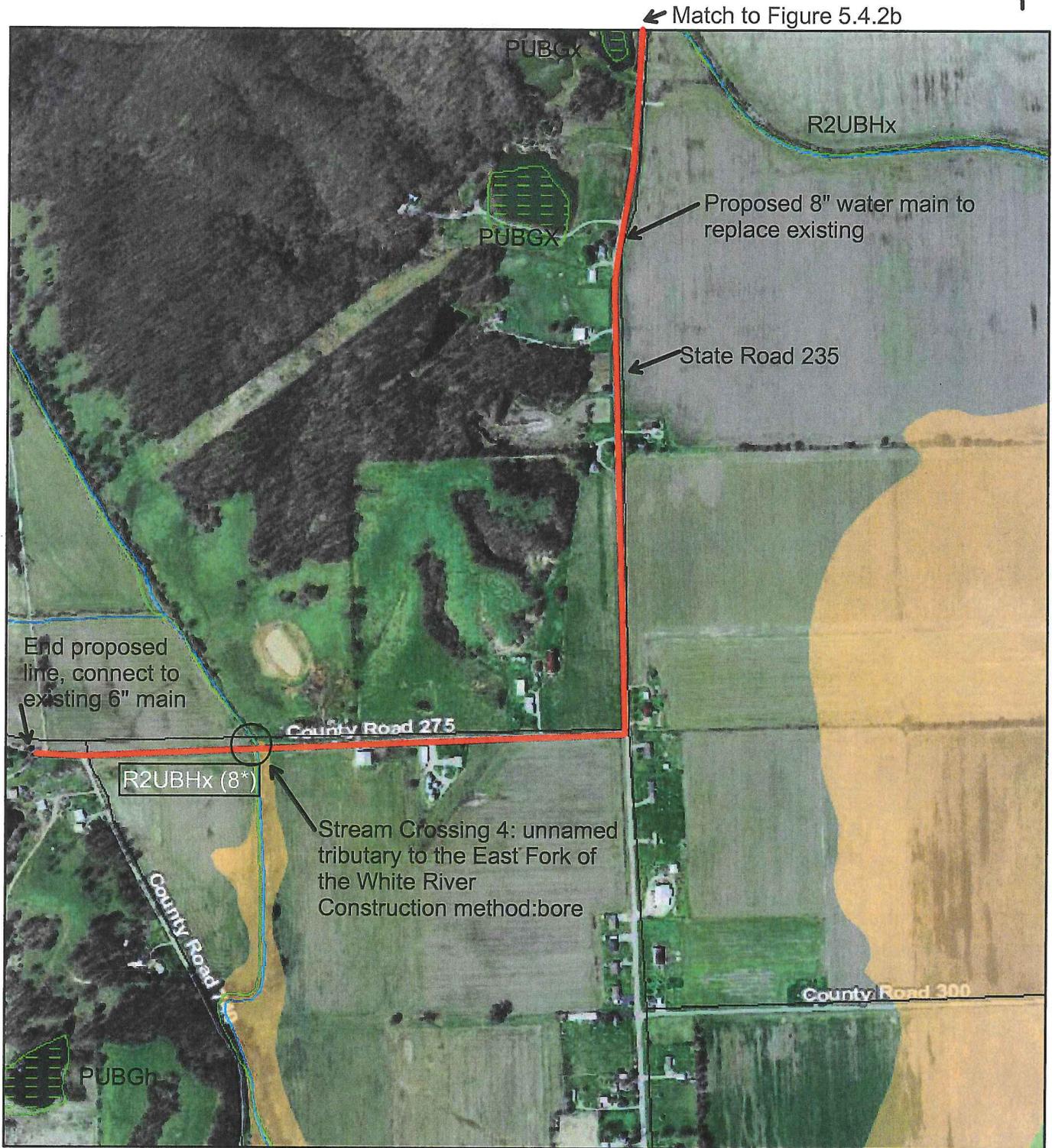
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| — Roads 2005 (TIGER - unlabeled) | — Wetland Lines |
| ■ Rivers (NHD) | ■ Wetland Points |
| — Streams (NHD) | ■ Wetlands |
| — Streams (Local-Resolution NHD, 2013) | ■ 0.2% Risk (aka 500-year Flood Zone) |
| ● Stream Features | ■ 1% Risk (aka 100-yr Flood Zone) |
| — Rivers - Inventory (NPS) | ■ Floodway |
| — Rivers - Outstanding (NRC) | |



*See Table 5.4.1

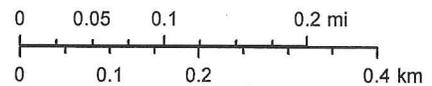
Revised Sept 18, 2014

Figure 5.4.2c: McHargue Road and SR 235 Main - Floodplain and Wetland Map



March 26, 2014

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- | | |
|--|---------------------------------------|
| — Roads 2005 (TIGER - unlabeled) | — Wetland Lines |
| ▣ Rivers (NHD) | ■ Wetland Points |
| — Streams (NHD) | ▣ Wetlands |
| — Streams (Local-Resolution NHD, 2013) | ■ 0.2% Risk (aka 500-year Flood Zone) |
| ● Stream Features | ■ 1% Risk (aka 100-yr Flood Zone) |
| — Rivers - Inventory (NPS) | ■ Floodway |
| — Rivers - Outstanding (NRC) | |

*See Table 5.4.1

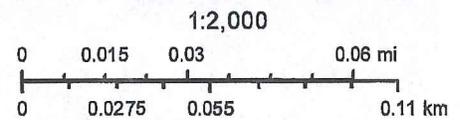
Revised Sept 18, 2014

Figure 5.4.3: Emergency Connection to Jennings Water - Floodplain and Wetland Map



March 27, 2014

- | | | | |
|---|--------------------------------------|---|----------------------------|
|  | 0.2% Risk (aka 500-year Flood Zone) |  | Rivers - Inventory (NPS) |
|  | 1% Risk (aka 100-yr Flood Zone) |  | Rivers - Outstanding (NRC) |
|  | Floodway |  | Wetland Points |
|  | Streams (Local-Resolution NHD, 2013) |  | Wetland Lines |
|  | Rivers (Local-Resolution NHD, 2013) |  | Wetlands |
|  | Stream Features | | |



North

Figure 5.4.4: Acme Water Tank Replacement - Floodplain and Wetland Map



March 26, 2014

- Rivers (NHD)
- Streams (NHD)
- Streams (Local-Resolution NHD, 2013)
- Stream Features
- Rivers - Inventory (NPS)
- Rivers - Outstanding (NRC)
- Wetland Lines
- Wetland Points
- Wetlands

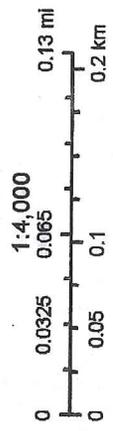
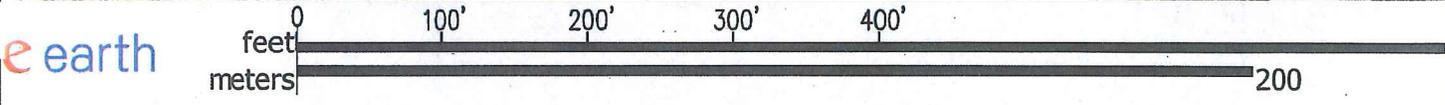


Figure 1.2.2 Site Plan for Proposed Improvements at the Water Treatment Plant

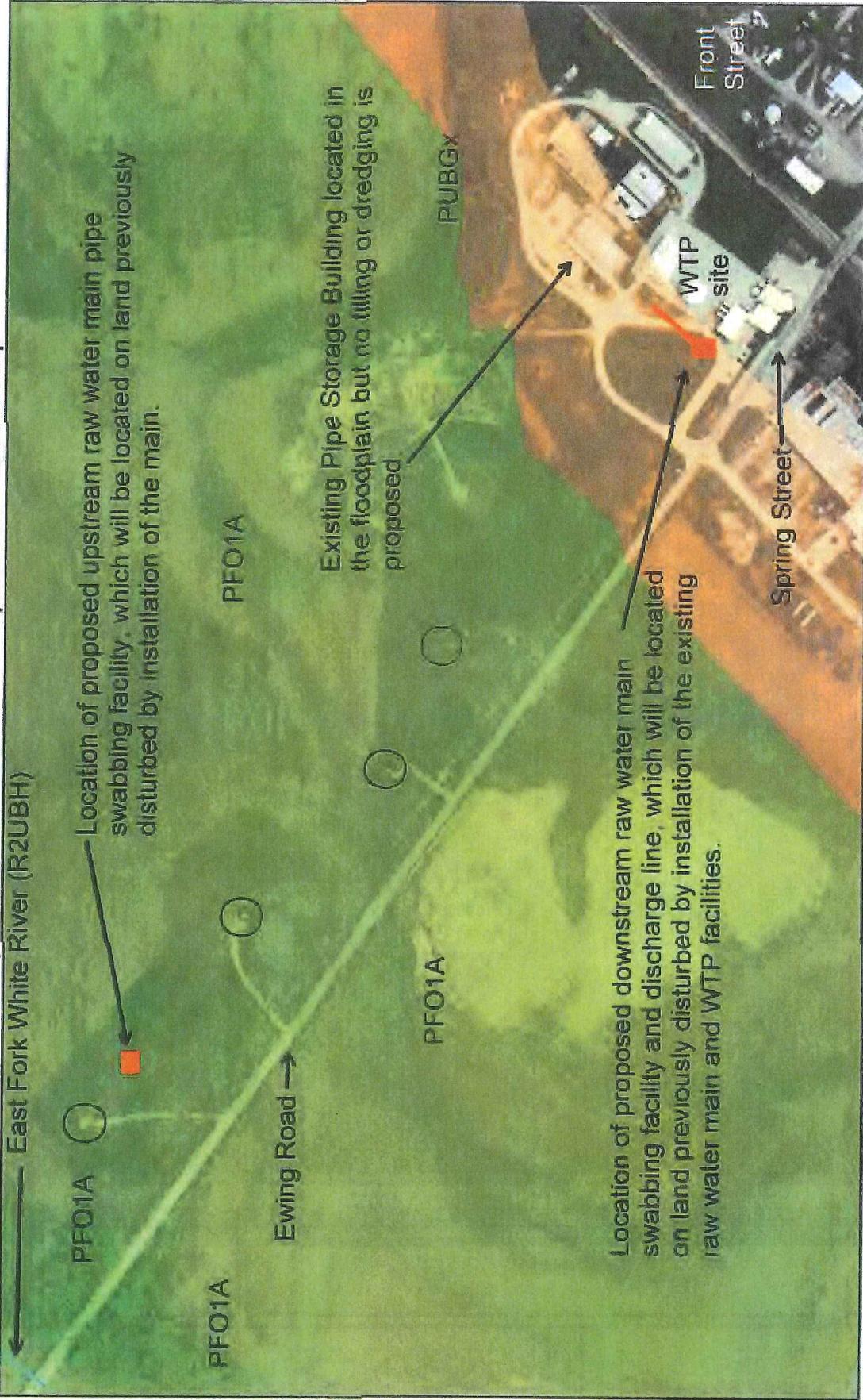


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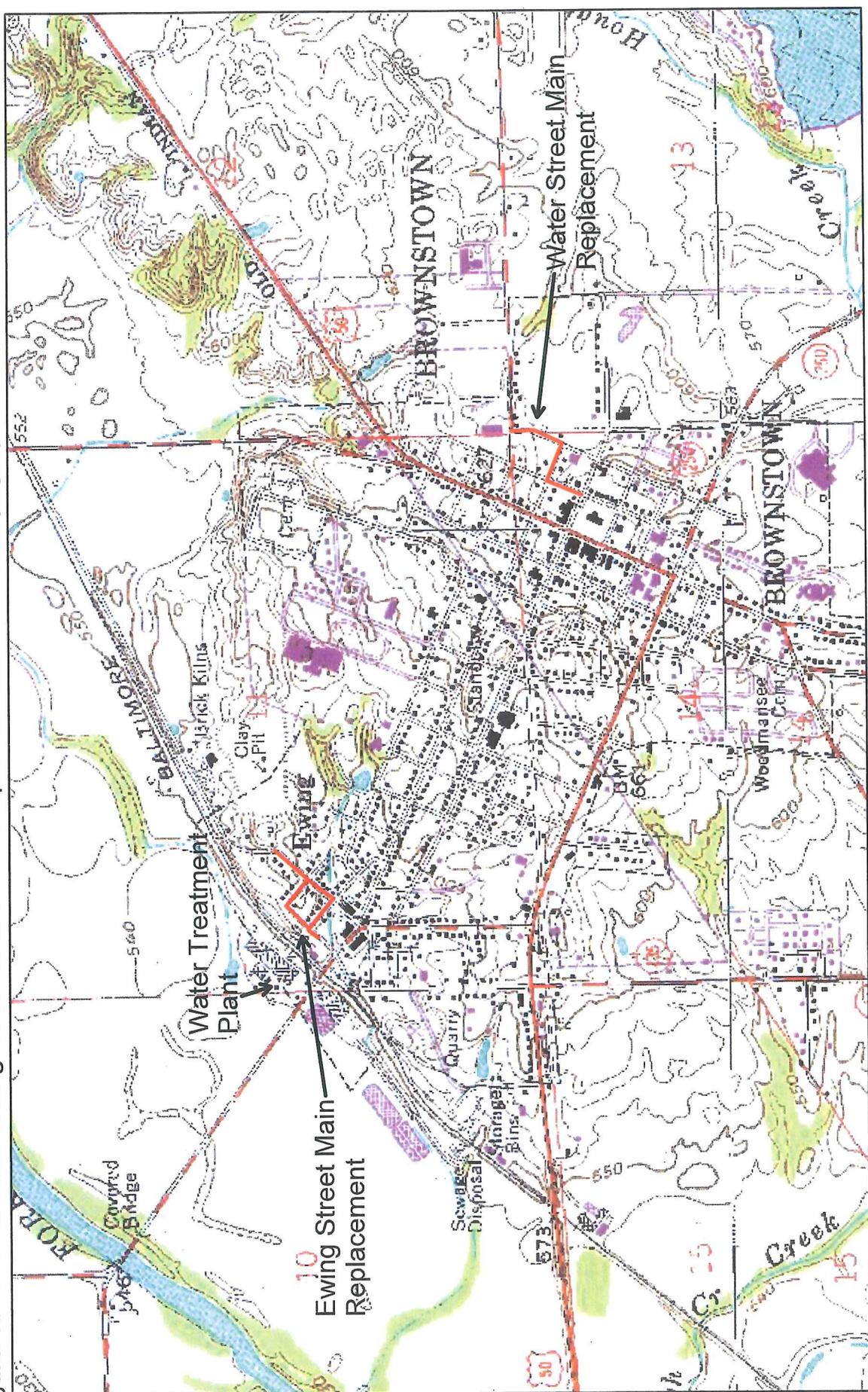
DATE:
SCALE:

Figure 5.4.5 Water Treatment Plant (WTP) and Well Field - Floodplain and Wetland Map



North

Figure 1.2.7: Water and Ewing Street Main Replacements - USGS Topographic Map



September 19, 2014

State Boundary