



Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

June 24, 2021

**Preliminary Finding of No Significant Impact
To All Interested Citizens, Organizations, and Government Agencies**

**Village of Barnesville - Belmont County
Barnesville 16" Raw Water Transmission Main
Loan Number: FS390135-0010**

The attached Environmental Assessment (EA) is for a drinking water improvement project in Belmont County which the Ohio Environmental Protection Agency intends to finance through its Water Supply Revolving Loan Account (WSRLA) below-market interest rate revolving loan program. The EA describes the project, its costs, and expected environmental benefits. We would appreciate receiving any comments you may have on the project. Making available this EA and seeking your comments fulfills Ohio EPA's environmental review and public notice requirements for this loan program.

Ohio EPA analyzes environmental effects of proposed projects as part of its WSRLA program review and approval process. We have concluded that the proposed project should not result in significant adverse environmental impacts. More information can be obtained by contacting the person named at the end of the attached EA.

Any comments on our preliminary determination should be sent to the email address of the contact named at the end of the EA. We will not act on this project for 30 calendar days from the date of this notice. In the absence of substantive comments during this period, our preliminary decision will become final. After that, the Village of Barnesville can then proceed with its application for the WSRLA loan.

Sincerely,

Jonathan Bernstein

Jonathan Bernstein, Assistant Chief
Division of Environmental & Financial Assistance

Attachment

ENVIRONMENTAL ASSESSMENT

Project Identification

Project: Barnesville 16" Raw Water Transmission Main

Applicant: Village of Barnesville
126 E. Church Street
Barnesville, OH 43713

Loan Number: FS390135-0010

Project Summary

The Village of Barnesville in Belmont County has requested financial assistance from the Ohio Water Supply Revolving Loan Account (WSRLA) to supplement other funds to replace the inefficient pump station and deteriorated raw water transmission main that carries water from the village's major reservoir about five miles to the water treatment plant. The replacement will be constructed primarily along roads and in areas more accessible for maintenance. No significant environmental impacts are expected from construction.

History & Existing Conditions

Barnesville operates a community public water system serving a population of approximately 9,900 locally and via the Switzerland of Ohio and Quaker City satellite distribution systems (Figure 1). The Barnesville water treatment plant (WTP), with a treatment capacity of 2.5 million gallons per day (mgd) and average production of 1.1 mgd, draws from two local surface water reservoirs (Reservoir #1, Reservoir #2) and Barnesville Reservoir #3 (the Slope Creek Reservoir, approximately five miles south of Barnesville). Estimated usable raw water storage in the three reservoirs is 840 million gallons, sufficient capacity for 2.6 years of un-interrupted use by Barnesville. Treated water storage capacity is 1.3 million gallons in two tanks, the equivalent of 1.2 days of normal consumption.

Treatment involves addition of potassium permanganate, polymers, and chlorine to promote coagulation and removal of contaminants prior to filtration. Activated carbon provides final polish of filtered water for removal of organic compounds. Chlorine provides disinfection.

The 25-acre Reservoir #1 holds approximately 85 million useable gallons and feeds directly to the WTP. Reservoir #2 covers 13 acres and holds approximately 30 million useable gallons of water. Reservoirs #1 and #2 send water by gravity to the WTP. The 93-acre Slope Creek Reservoir (Reservoir #3) was created in 1964 for flood control and water supply. The Slope Creek Reservoir raw water transmission main feeds directly to either the treatment plant or to Reservoir #1 from its 650 million useable gallons.

Reservoirs #1 and #2 experience harmful algal blooms (HAB). Slope Creek Reservoir provides higher quality water and has sufficient capacity to meet the WTP demand. However, the pump station operates below and the transmission main loses approximately 30% of the water pumped and could not transmit the total demand volume of water. The alignment in its mostly cross-country route is poorly defined and some spans cannot be located to perform leak detection.



Figure 1 – Barnesville water service area

Population and Water Demand Projections

The population of Barnesville and other areas served by Barnesville water is expected to experience no significant increase for the foreseeable future. Two small, unincorporated communities, Fairview and Hendrysburg, may connect to the water system when construction can be affordable. Those villages and individual rural users along the water main routes could add 100 residential customers. Optimistic estimates of commercial and industrial use in the Barnesville industrial park, combined with modest additional residential demand, could ultimately increase water production as much as 30%.

Barnesville has sold bulk raw water directly from Slope Creek Reservoir for hydraulic fracturing (“fracking”) when water levels allow, which does not count as finished water demand but is expected to continue indefinitely and is a source of revenue to the village.

Alternatives

Barnesville officials worked with consultants to develop alternatives to continued reliance on the small reservoirs impacted by HAB:

1. Replace the Slope Creek Reservoir’s aged, deteriorated, and undersized pump station and raw water transmission main to directly supply the WTP with 100% of daily demand (estimated cost for planning comparisons, \$5,433,000). This alternative evaluated upgrading or replacing the pump station and replacing the transmission main on the same alignment or on an alignment with better maintenance access.

2. Develop a well field and modify the WTP to treat ground water – local geology and ground water availability show this alternative could not supply the daily demand and is not feasible for the Barnesville water system.
3. Sustainable “whole water system” – also called recycled wastewater, this alternative would replace and upgrade the existing Barnesville wastewater treatment plant (WWTP) and discharge highly treated effluent to Reservoir #1 for mixing with the impounded stream flow before withdrawal for drinking water treatment. Because the existing WWTP was near the end of its useful life, the replacement cost was calculated as part of the water system alternative cost, yielding a net water system estimated cost of \$3,744,000. Hydrological and water demand calculations show this system would provide sufficient raw water in years of normal rainfall but be unable to meet demand during drought years.

Selected Alternative

Barnesville selected Alternative 1, replace the Slope Creek Reservoir’s inefficient pump station and aged and deteriorated raw water transmission main to directly supply the WTP with 100% of daily demand. Under this scenario, Reservoir #1 and Reservoir #2 would remain but not supply the WTP. Alternative 2, transition to well water, is not feasible due to local geology. Alternative 3, whole water system, is not feasible because it would still require Slope Creek Reservoir water (and new transmission main and pump station) to supplement the system.

To eliminate the existing leaky, undersized, and difficult-to-maintain raw water transmission main, Barnesville will replace 25,000 linear feet (lf) of 12-inch diameter pipe asbestos cement pipe with a new 16-inch PVC pipe along a new alignment primarily along roads and in open areas on new easements (Figure 2). To ensure effective pumping capability, Barnesville will replace the existing pump station with a new, prefabricated pump station near the existing pump station below the Slope Creek dam with three 560-gallon per minute (gpm) pumps with variable frequency drive controls.

The upgraded pump station will save approximately \$25,000 in electrical costs annually by using more-efficient pumps and operating less frequently with the new transmission main eliminating significant water loss.

Implementation

The financing package for this \$5,582,000 project includes \$800,000 from the Ohio Public Works Commission, \$250,000 from the federal Appalachian Regional Commission, \$1,000,000 from the U.S. Army Corps of Engineers, and local funds of \$1,675,000, supplemented with approximately \$1,857,000 from the WSRLA. Barnesville qualifies for the special Harmful Algal Bloom (HAB) discount 0% interest rate for the WSRLA amount and will save approximately \$386,000 over the 20-year life of the loan compared to the current market rate, 1.91%. Interest rates are set monthly and may change for a later loan award and alter the estimated savings.

To ensure optimal financing, Barnesville expects to advertise for bids in late 2021 and receive the WSRLA loan award and start construction in early 2022. The new pump station and transmission main will be operational in 2023.



Figure 2 – Transmission main alignment

Public Participation

Barnesville has been developing this project for several years. Periodic local news articles and minutes of village council meetings have kept the public aware of progress. Ohio EPA is unaware of opposition to or controversy about this project.

Ohio EPA will make a copy of this document available to the public on its web page <https://epa.ohio.gov/defa/ofa#169638770-wsrla-documents-for-review-and-comment> and will provide it upon request to interested parties.

Environmental Impacts

The project will have no adverse secondary (development-related) environmental impacts. The project area is distant from and therefore will not affect any state or federal wild or scenic river, the Lake Erie coastal management area, and a sole source aquifer. The project has the potential to affect the following features, but the effects will be reduced or mitigated to acceptable levels as here explained.

The U.S. Fish and Wildlife Service concurred with Ohio EPA's conclusion that this project will not adversely affect the *federally listed species endangered* Indiana bat or *threatened* northern long-eared bat because limited tree clearing will occur between October 1 and March 31 ("seasonal

clearing”) when bats are presumed to be in winter hibernation. The *endangered* running buffalo clover known populations in Belmont County are distant from the project area and will not be affected by this project. For these reasons, this project will have no adverse effect on important *terrestrial habitat or fish and wildlife*.

No *wetlands* are along the proposed transmission main alignment. Other *aquatic habitat* in the form of small streams will be protected by implementation of standard construction erosion and sediment controls and by constructing pipe across streams using horizontal directional drilling. The three Barnesville reservoirs, *surface water resources* used for the village drinking water supply, will be unimpacted by this construction. The project’s purpose is to protect and improve the availability of *safe drinking water* in the Barnesville public water system.

Ground water resources will be unaffected by the shallow trenching required to construct the new transmission main.

The Ohio State Historic Preservation Office concurred with Ohio EPA’s conclusion that this project will not adversely affect *archaeological or historical resources*. There is no evidence of these resources existing in the project disturbance area.

Local *land use* will not change because of this project. The new transmission main will be constructed largely along road rights-of-way with some spans across pasture. Construction contract stipulations will protect livestock during construction, and the underground pipe will not affect surface use after restoration is complete, helping ensure the project will not affect important *farmland*.

No work will occur in a designated *floodplain*. The existing and proposed pump stations downstream of the Slope Creek dam are near, but not in, the floodplain.

Local *air quality* will be unaffected by this project that adds no permanent air pollution sources. Local *energy* supplies will be unaffected because the installation of high-efficiency pumps with variable frequency drives in the new pump station, and the need to pump less because the new pipe will be watertight, will result in overall decreased electrical use for moving raw water to the WTP.

Because most construction will be distant from residences and public areas, and work will be limited to daylight hours, *noise* will be audible in the work vicinity but unlikely to be a nuisance. Where construction will occur along roads, standard construction *traffic* management measures will help ensure safe transit of vehicles. Public *safety* will be further protected by covering or filling all trenches at the end of each workday. After surface restoration is complete, local *aesthetics* will be unchanged by this project.

The typical annual residential water bill in Barnesville is \$492, which is approximately 1.4% of the local median household income (MHI), \$36,590. This compares favorably to the Ohio average annual water bill of \$639 and 1.2% of MHI. The favorable financing package helps minimize the effect on the *local economy*.

Conclusion

Based on its review of this project’s general plans and other information, Ohio EPA concludes that no significant short-term or long-term adverse direct environmental impacts will result from the project as related to the environmental features discussed in this Environmental Assessment. This

is because these features do not exist in the project area, the features exist but will not be adversely affected, or the impacts of construction will be temporary and mitigated.

This project equally serves the entire Barnesville community and water system, and no particular segment of the community will be faced with additional adverse impacts or be deprived of environmental benefits, compared to any other segment.

For these reasons, this project, alone or in combination with other projects, is not expected to result in any significant indirect or cumulative short-term or long-term adverse environmental impacts.

Ohio EPA expects the economic impact of the project on the average user to be insignificant because Barnesville received a favorable financing package that minimizes the project cost and indebtedness.

The project will help protect public health by allowing Barnesville to better minimize harmful algal bloom impacts on its water supply and ensure reliable delivery of water to the water treatment plant.

Contact Information

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