

ENVIRONMENTAL ASSESSMENT

Project Identification

Project: Village of Bellaire - Water Treatment Plant Improvements

Applicant: Village of Bellaire
Municipal Building
3197 Belmont Street
Bellaire, Ohio 43906

Loan Number: FS390149-0008

Project Summary

The Village of Bellaire has applied for funding from the Ohio Water Supply Revolving Loan Account (WSRLA) for the Water Treatment Plant Improvements project. The project is intended to improve the existing water treatment plant (WTP), address source water contamination, replace lead service lines, and reduce excessive water losses within the water distribution system. The estimated loan amount for the project is \$947,795, with construction scheduled to begin in Summer 2021 and to be completed in 12 months.

History & Existing Conditions

The Village of Bellaire is located along the Ohio River in Belmont County, and owns and operates a drinking water treatment plant (WTP), which provides drinking water to a service population of approximately 4,106. The Bellaire WTP draws its raw water from two Ranney collector wells set at approximately 80 feet in depth adjacent to the bank of the river. The first Ranney well has been found to be contaminated with ammonia. The village treats the contamination with large amounts of chlorine prior to distribution. However, this well has also been losing capacity for many years and is producing about half of its original volume. As a result, a second well was constructed to augment water capacity. Upon initial startup and testing of this new Ranney well, Tetrachloroethylene (PCE), a potential human carcinogen, was identified from the new raw water source exceeding environmental and health regulations for the minimum contaminant levels (MCM).

The Bellaire WTP currently produces an average of 0.9 million gallons per day (MGD), though only approximately 20 percent of this water is actually paid for by its customers. The remaining 80 percent of water produced is lost or otherwise unaccounted for due to failing infrastructure, including leaking water mains and laterals, and faulty water meters.

Population and Flow Projection

Bellaire has experienced zero to negative growth in recent decades, and little population change is anticipated during the 20-year planning period.

Bellaire's WTP currently supplies the village's average daily demand of 0.9 MGD, though significant water loss impacts the amount utilized. The Water Treatment Plant Improvements project is expected to result in significant water savings, to the extent that future drinking water regionalization projects from the Bellaire WTP feasible. Therefore, the project does not require the expansion of Bellaire's water treatment facility beyond its current capacity or require the addition of a supplementary water supplier, so it will not require a change in water withdrawal.

Alternatives

Alternative 1: No Action

This alternative would choose to not perform or defer the various projects. This alternative is not viable due to compliance issues related to contamination within the raw water which need to be remedied immediately.

Alternative 2: Regionalization with Belmont County Water

Belmont County Water and Sewer District's District 3 water supply is located north of Bellaire and is the only public water system in close proximity to Bellaire. However, District 3 is supplied by a well and aquifer that do not have sufficient capacity to serve the needs of Bellaire. Therefore, this is not a viable alternative.

Alternative 3: WTP Improvements and New Valves

This alternative would include two new air stripping units, new filter valves and actuators, filter control consoles, level sensors, flow meters, and backwash and surface wash controls. Lead containing service lines identification and replacement would be performed. This alternative would also replace 60 water distribution valves within the system to reduce water loss and improve revenue and billing accuracy.

Alternative 4: WTP Improvements, New Valves, and Water Loss Program

This alternative consists of the same scope as Alternative 3, with the addition of a water loss program. The water loss program would include a water audit, leak detection, and meter replacement. This alternative would help to address the estimated 80 percent water losses within the distribution system by precisely repairing and replacing the system's weakest distribution assets. These improvements would allow for substantial water conservation and savings, and make future drinking water regionalization projects from the Bellaire WTP feasible.

Selected Alternative

Alternative 4 was selected as it will address water contamination and necessary improvements at the WTP, reduce water losses within the distribution system, remove lead drinking water lines, improve billing accuracy and revenue, and make future drinking water regionalization projects feasible. The proposed Water Treatment Plant Improvements project (see figures 1 and 2) will include the following:

- Installation of two 1,000-gallon per minute (GPM) air strippers and blowers, including a backup blower and building to house all equipment
- Repair of the WTP's oscillating flocculator

- Replacement of five butterfly valves and actuators
- Replacement of the filter control system, console, controllers, indicators, sensors, and control programming
- Rehabilitation of high service pumps numbers 2 and 3
- Replacement of approximately 60 water distribution valves and 500 customer water meters
- Elimination of lead service lines
- Restoration activities

Implementation

The total estimated construction cost of the project is \$4,450,295, and the project is expected to receive the following funding:

- \$2,502,500 WSRLA principal forgiveness funding to address human health issues present in the project area
- Up to \$1,000,000 Drinking Water Assistance Fund (DWAFF) Lead Service Line Replacement Fund principal forgiveness to address the replacement of lead service lines
- \$947,795 20-year, zero-percent WSRLA loan to address human health issues present in the project area

Borrowing \$947,795 from WSRLA at zero percent, in combination with the WSRLA and DWAFF principal forgiveness funding, will save Bellaire approximately \$4,396,779 over the life of the loan compared to financing the entire project amount at the current 20-year market rate of 1.85 percent.

Debt for the project will be repaid with revenue generated by water rates in the service area. Current monthly rates, based on calculated average usage, are \$44.92, or \$539 annually. This equates to 2.02 percent of the local median household income (MHI) of \$26,729. Rate increases are planned upon completion of the project to pay off debt for construction, with rates rising to \$53.65 per month, or \$644 annually, which is 2.41 percent of MHI.

Public Participation

This project has been discussed in Village meetings that are open to the public. Additional meetings have been scheduled specifically to notify the public of this project. This project has been discussed in numerous local newspaper and online media articles, and public notices. This Environmental Assessment will be posted on Bellaire and Ohio EPA Division of Environmental and Financial Assistance websites. The public notice for the Environmental Assessment will be open for a 30-day public comment period. Thus, there have been adequate opportunities for information dissemination and public participation.

Environmental Impacts

The project has the potential to affect the following features, but the effects will be reduced or mitigated to acceptable levels as explained below.

Surface Water: The majority of the proposed project will not have significant adverse long-term impacts on surface water resources, as there will be no in-water work, no wetlands are present in the project area, and work will primarily be performed within the existing water treatment plant facility, road rights-of-way and limited easements on private properties, in which the predominant

cover is pavement, gravel, and lawn grass. Minor, short-term impacts from the open-cut construction could occur. Excavation of the trenches and pits could be prone to erosion and deposition if construction mitigation is not followed. Dewatering of ground water to enable work below grade may be necessary, but engineering controls are part of the specifications to minimize the impacts of discharging pumped ground water to a river or stream.

Based on the above, the proposed project will not result in significant adverse impacts to surface waters.

Terrestrial Habitat and Endangered Species: The U.S. Fish and Wildlife Service (USFWS) indicates that the project is within the range of the Indiana bat (endangered) and northern long-eared bat (threatened). Trees within the project area are primarily small to large-sized street trees. Little to no tree clearing or trimming is expected as part of the project. If conditions change and tree removal is necessary, it will only be permitted to occur October 1 - March 31 or in coordination with USFWS, and tree removal is limited to only those trees necessary for completion of the project (e.g., trees within the excavation location or within the path of heavy equipment, etc.). These tree clearing restrictions will further ensure that any potential impacts to Indiana bats or northern long-eared bats are avoided.

The project is within the range of the bald eagle, a federally protected species. As the project team is not aware of any nesting locations in the area of the project, this project is not likely to impact this species.

The project is within the range of running buffalo clover, a federally endangered plant species. However, due to the location of the project and the lack of appropriate habitat present, this species is not likely to be impacted.

The project is within the range of the eastern hellbender, a federal species of concern salamander. However, as no in-water work will take place as part of this project, and project controls are expected to minimize potential impacts, these species are not likely to be impacted.

Based on this information, the project will have no significant short-term or long-term adverse effect on terrestrial habitat or endangered species.

Air Quality: Noble County air quality meets standards for the six regulated air pollutants (carbon monoxide, sulfur dioxide, nitrogen oxide, lead, particulate matter, and ozone). During construction, dust and vehicle exhaust will be insignificant sources of local air pollution. Dust due to excavation in dry weather will be controlled by good housekeeping measures (minimizing the area of disturbed soil, road sweeping, dust suppression with water or other benign dust suppressant). Because of its temporary nature and the use of emissions controls on motorized equipment, construction vehicle exhaust will be an insignificant pollution source compared to background sources of motorized vehicle exhaust in the greater project area.

Based on this information, the project should have no significant adverse short-term or long-term impacts on local air quality.

Dust, Noise, and Odors: Motorized equipment will be used for the majority of project work, generating noise, dust, and odors that will be unavoidable but temporary. Noise will be controlled by using equipment that does not generate excessive noise or vibration. Work with heavy equipment will be restricted from use within 500 feet of residential areas between the hours of 10:00 PM and

7:30 AM. Work areas will be left clean enough to minimize the generation of airborne dust, and dust suppressant will be used as needed. Emissions controls on motorized construction equipment will reduce diesel odors. Once complete, the project actions will operate with no noise, dust, or odors.

Based on this, the project will have no short-term or long-term significant adverse effects from noise, dust, and odors.

Safety and Traffic: Construction in road rights-of-way will cause temporary traffic disruption and potential threats to public safety. Contract documents require contractors to implement standard traffic controls to minimize traffic disruption and public safety problems. For example, contractors are required to maintain, at a minimum, temporary driveways, bridges, and crossings to accommodate public and private access to private driveways, and to keep the police and fire department continuously informed of intentions to close streets. With these precautions, the project is unlikely to create significant traffic disturbance or threats to public safety.

Once construction is complete, the project areas will be restored and returned to pre-construction conditions. The project will not permanently alter traffic patterns. Therefore, the project will have no long-term change or adverse impacts on safety and traffic.

Archaeological and Historical Resources: Ohio EPA has concluded that no features listed on, or eligible for listing on, the National Register of Historic Places will be adversely impacted by the proposed project based on the following: extensive pre-design review; and that the project will occur primarily in previously disturbed areas, including an existing water treatment plant and road rights-of-way, and areas with existing utilities.

Based on this information the Village of Bellaire and Ohio EPA believe that due to the extent of disturbance in the project area, unrecorded archaeological sites, or properties eligible or listed on the National Register of Historic Places are not likely to be present.

In the event that archaeological properties are found during construction, contractors and subcontractors are required under Ohio Revised Code Section 149.53 to notify the Ohio State Historic Preservation Office (and Ohio EPA) and to cooperate with those entities in archaeological and historic surveys and salvage efforts when appropriate.

Local Economy: Debt for the project will be repaid with revenue generated by water rates in the service area. Various alternatives were examined, and this project is the most cost-effective based on technical merits and the drinking water needs of the community.

Unaffected Environmental Features: The project will have no adverse secondary (development-related) environmental impacts since it is not designed to serve growth in undeveloped areas. No state or federal wild or scenic rivers are present in or near the work sites. No wetlands are present in or near the work sites. No sole source aquifers are present under the project, and residents obtain their drinking water from the Village of Bellaire.

Conclusion

Based upon Ohio EPA's review of the planning information and the materials presented in this Environmental Assessment, we have concluded that there will be no significant adverse impacts from the proposed project as it relates to the environmental features discussed previously. This is because these features do not exist in the project area, the features exist but will not be adversely affected, or

the impacts will be temporary and mitigated. This project serves the entire Bellaire service area, 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.

This project is intended to benefit local public health and the environment by improving the existing water treatment plant to address source water contamination, reduce excessive water losses, and replaced aged lead service lines within the water distribution system.

Contact information

R. Eric Schultz
Division of Environmental & Financial Assistance
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, Ohio 43216-1049
email: eric.schultz@epa.ohio.gov

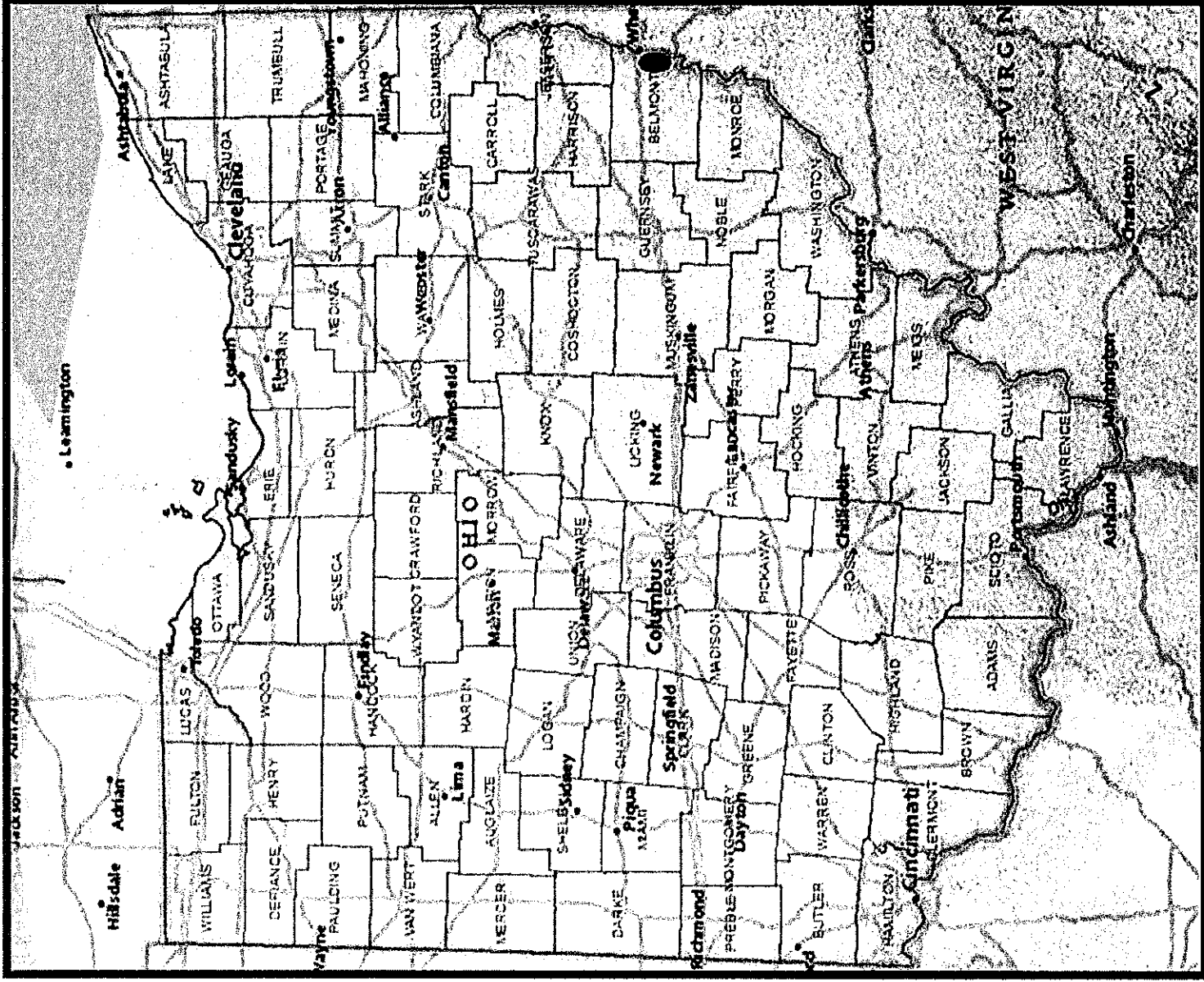


Figure 1: General project location