Ohio Environmental Protection Agency

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

**April 13, 2020**

**Limited Environmental Review and Finding of No Significant Impact**

**City of Alliance - Stark County**
**TTHM Removal System**
**Loan number: FS390099-0004**

The attached Limited Environmental Review (LER) is for a drinking water treatment project in Alliance 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 LER describes the project, its costs, and expected environmental benefits. Making available this LER 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. This project's relatively narrow scope and lack of environmental impacts qualifies it for the LER rather than a more comprehensive Environmental Assessment. More information can be obtained by calling or writing the person named at the end of the attached LER.

Upon issuance of this Finding of No Significant Impact (FNSI) determination, award of funds may proceed without further environmental review or public comment unless new information shows that environmental conditions of the proposed project have changed significantly.

Sincerely,

E-SIGNED by Jonathan Bernstein
on 2020-04-13 15:04:28 EDT

Jonathan Bernstein, Assistant Chief
Division of Environmental and Financial Assistance

Attachment

**LIMITED ENVIRONMENTAL REVIEW**

## Project Identification

Project: Alliance TTHM Removal System

Applicant: Michael Dreger, Safety Service Director
City of Alliance
504 East Main Street
Alliance, Ohio 44601

Loan Number: FS390099-0004

## Project Summary

The City of Alliance has applied for funding from the Ohio Water Supply Revolving Loan Account (WSRLA) for the TTHM Removal System project. The project is intended to reduce water disinfection byproducts (DBP) within the water treatment, storage, and distribution systems primarily by installing water mixing and aeration systems within the water treatment plant (WTP) clearwells. The estimated construction cost of the project is $932,420, with construction scheduled to begin in spring 2020 and to be completed in six weeks.

## History & Existing Conditions

Alliance is located in northeastern Ohio, approximately 55 miles southeast of Cleveland, primarily in Stark County with a small portion located in Mahoning County. Alliance's water source is entirely surface water. The primary water source is Deer Creek Reservoir, with additional storage upstream in a second impoundment, Walborn Reservoir. Both reservoirs are located on Deer Creek, a tributary of the Mahoning River that is located north of Alliance in northeast Stark County and southern Portage County.

Alliance's WTP has a design average flow of 5.5 million gallons per day (MGD) and a maximum flow of 8 MGD, with an actual average flow of 3.6 MGD. Alliance has 9,561 water service connections. The water plant utilizes several chemical feed systems. These include chlorine dioxide, powdered activated carbon (PAC), alum, caustic soda, hydrogen peroxide hydrofluosilicic acid, and chlorine. The WTP has two reactor basins, two rapid mix basins, and two treatment basins to provide coagulation and flocculation prior to filtration. All the basins may be operated in series or parallel. After filtration, there is an on-demand advanced oxidation process (AOP) that is used during microcystin or taste and odor (T&O) events.

DBP in drinking water primarily depend on parameters, such as the nature of the organic chemicals present in source water, disinfectant chemical dosage applied, water quality, and water ages. The long retention time within the extensive miles of distribution piping and storage tanks allows the disinfectants an extended contact period with the natural organics found in the finished water. The reaction between these compounds can result in DBP formation, particularly trihalomethanes (TTHM). TTHM has the potential to increase the risk of cancer, as well as potentially leading to liver, kidney, and central nervous system problems.

DBP, and specifically TTHM, are an issue of concern for Alliance. Alliance carefully monitors TTHM in the distribution system, especially in the warmer months, when TTHM concentrations can be close to the regulatory limit. The TTHM issue is related to the WTP's treatment for microcystin as well as for managing the water's T&O. Monthly hydrant flushing, combined with automatic flushing at three locations in the distribution system, have been implemented to maintain compliance with DBP regulations. However, if these microcystin and T&O events were to occur at the same time in the summer months, the current measures would not be sufficient to maintain DBP compliance and protect human health.

Alliance has been experiencing a decline in population since the 1970s and has been trying to build back up to a population of 25,000 for over 30 years. Growth from the current population of approximately 22,000 to a population of 25,000 would represent a 12 percent increase. Given the decline and long-existing goal of attaining a population of 25,000, a 12 percent increase in the average and peak flows was estimated over the next 20 years. Since the WTP's average flows (3.6 MGD) are 34 percent lower than the design average flow (5.5 MGD), no expansion is projected for the next 20 years.

## Project Description

The TTHM Removal System project (see Figures 1 and 2) includes the installation of TTHM removal systems to reduce DBP. Specifically, the project includes the following work at both Clearwell 1 and Clearwell 2:

- Installation of four 15 hp surface aerators inside the chamber, including all electrical motors, floating support systems, wiring, and guide systems
- Installation of three PPV 400 power vents, and up to two additional vents
- Installation of one VAM 400 active-mixing system within the chamber
- Pressure washing the clearwell interiors to remove all sediments
- Mounting frames, vents, and roof penetrations
- Installation of telemetry and controllers
- Testing and disinfection of clearwells and equipment

## Implementation

The total estimated construction cost of the project is $932,420. Alliance proposes to borrow the entire project amount from the WSRLA. The project service area qualifies for a zero percent, 20-year construction loan for HAB-related projects. Borrowing at zero percent will save Alliance approximately $222,000 over the life of the loan compared to the current market rate of 2.17 percent.

Debt for the project will be repaid with revenue generated by water rates in the service area, and no rate increases are anticipated as a result of this project. The local median household income (MHI) is $32,782. Under the water rates that are effective in 2020, and based on average water usage, the average residential water bill is $57.40 per month, or $688.80 per year. This represents 2.1 percent of the MHI, which is considered affordable.

## Public Participation

The TTHM Removal System project has been discussed at several City council and Water and Sewer Advisory Board meetings. No public concerns have been raised about the project. Based on the

limited environmental and economic impacts, this is considered an appropriate level of public participation.

**Conclusion**

The proposed project meets the project type criteria for a Limited Environmental Review (LER); namely, it is an action within an existing water treatment system, which involves the functional replacement of and improvements to existing infrastructure and equipment. Furthermore, the project meets the other qualifying criteria for an LER; specifically, the proposed project:

- **will have no significant adverse environmental effect**, since sensitive resources such as floodplains, wetlands, riparian areas, prime or unique agricultural lands, aquifer recharge zones, archaeological or historically significant sites, or threatened or endangered species are not present in the project area.

- **does not require extensive specific impact mitigation**, as the proposed project involves minor improvements to the existing water treatment infrastructure and equipment located within an existing WTP with extensive and repeated excavation and construction activities.

- **will have no adverse effect on high value environmental resources**, as the project area includes an existing WTP with extensive structures, access roads and utilities, so no high value environmental resources are present there.

- **is not a controversial action**, as user rates will not be increased as a result of this project, adverse impacts to environmental resources are unlikely to occur, and Ohio EPA is unaware of any public opposition to the project.

- **is cost-effective,** as improvements to the WTP infrastructure will help to improve the facility's operation, improve treatment of DBP and TTHM, and ensure continuous potable drinking water supply to residents and businesses located in the project area at a reasonable cost.

- **does not involve a new or relocated discharge to surface or ground water, involve any increase in volume of discharge or loading of pollutants from an existing source or new facilities, create a new source of water withdrawals from either surface or ground waters, or significantly increase the amount of water withdrawn from existing sources; or provide capacity to serve a population substantially greater than the existing population,** as no discharge points or pollutant loading will be part of the project. The project does not require the expansion of Alliance'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. No significant population change is anticipated during the 20-year planning period.

The planning activities for the project have identified no potentially significant short-term or long-term adverse impacts on the quality of the human environment or on sensitive resources. Implementation of appropriate construction mitigation measures is required by the contract specifications and construction activity will be limited to the existing WTP with extensive structures, access roads and existing utilities. The project will benefit the project service area by improving existing drinking water treatment and storage structures and will help improve the system's ability to treat for DBP and TTHM, protecting human health.

**Contact info**

R. Eric Schultz
Division of Environmental & Financial Assistance
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, Ohio 43216-1049
Phone: (614) 644-3713
email: eric.schultz@epa.ohio.gov


**Figure 1: General project area, in red**

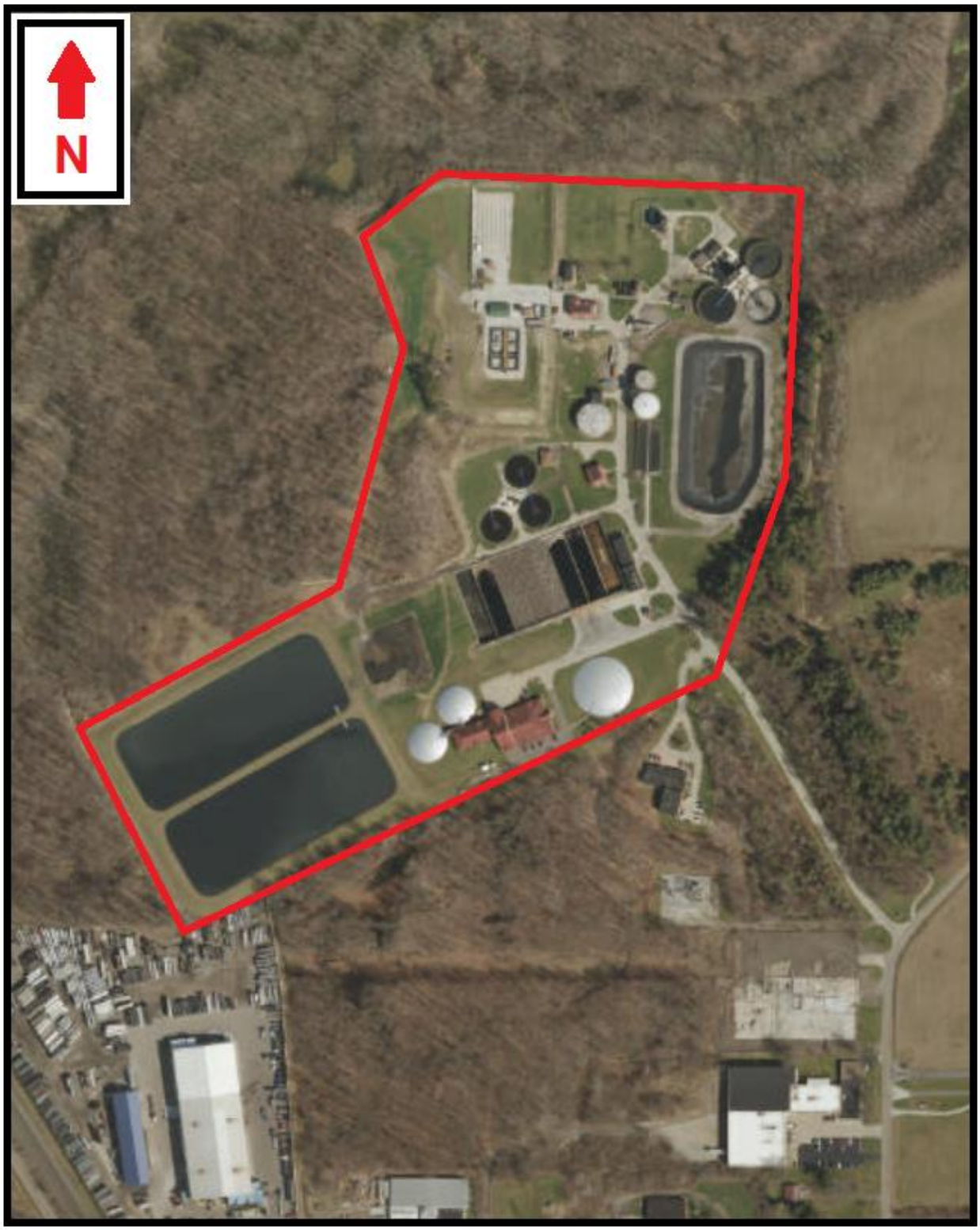


**Figure 2: Alliance Drinking Water Treatment Plant**