September 5, 2019

Limited Environmental Review and Finding of No Significant Impact

City of Defiance – Defiance County
WPC UV Disinfection Improvements Project
Loan number: CS390305-0037

The attached Limited Environmental Review (LER) is for a wastewater treatment improvement project in Defiance, which the Ohio Environmental Protection Agency intends to finance through its Water Pollution Control Loan Fund (WPCLF) 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, as described in Ohio Administrative Code (OAC) 3745-150-05.

Ohio EPA analyzes environmental effects of proposed projects as part of its WPCLF 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, as described in OAC 3745-150-06. 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,

Jonathan Bernstein, Assistant Chief
Division of Environmental and Financial Assistance

Attachment
LIMITED ENVIRONMENTAL REVIEW

Project Identification

Project: Defiance – WPC UV Disinfection Improvements Project

Applicant: Jeff Leonard, City Administrator
City of Defiance
631 Perry Street
Defiance, Ohio 43512

Loan Number: CS390305-0037

Project Summary

The City of Defiance in Defiance County (Figure 1) has requested a loan from the Water Pollution Control Loan Fund (WPCLF). Defiance wants to replace their current disinfection system, which utilizes chlorine gas disinfection and sulphur dioxide dechlorination to treat or blend with wastewater discharge, with ultraviolet (UV) disinfection. The city has determined there is great value in eliminating the potential health and safety hazards to employees and neighboring residents related to chlorine gas. The amount requested is $2,544,300.

History & Existing Conditions

Defiance has a water pollution control (WPC) facility that was constructed in 1956 and a collection system which serves approximately 16,676 residents. The WPC facility is an advanced treatment facility with a design flow of 6.0 million gallons per day (MGD) and an average daily flow of 3.2 MGD. The receiving waterbody is the Maumee River, which is a modified warmwater habitat.

The city experiences intermittent industrial dye discharges into the collection system from an industrial user. The city's collection system is a combined sewer system with significant turbidity during wet-weather events. UV disinfection offers health and safety benefits, as well as operational advantages, over chlorine gas disinfection. The city completed a pilot study of UV disinfection to evaluate wastewater characteristics on UV transmittance (UVT). The pilot study demonstrated that UV disinfection can provide adequate disinfection over a wide range of flow conditions/wastewater characteristics, including industrial dye events and wet-weather events, which occur in the city's wastewater system.

Project Description

This project will include the installation of a UV disinfection system in the existing West Chlorine Contact Tank (see Figure 2) within a metal-framed enclosure. A separate enclosure will be provided for control panels. A review of the WPC facility's existing electrical system indicates that there is adequate power available to accommodate the proposed system.
Figure 1 – Location of Defiance, OH

Figure 2 – Project Site Location
**Implementation**

Defiance proposes to borrow the entire cost from Ohio's WPCLF at the rate of 1.22%, compared to the market rate of 2.47%.

Annual sewer rates paid by Defiance’s customers will be about $735/year in 2020, assuming a planned rate increase takes effect. This represents 1.6% of the median household income (MHI) of $43,855, which is considered affordable.

The City expects loan awards in September 2019 and construction is anticipated to reach completion within eight months.

**Public Participation**

Defiance discussed this project during village council meetings in 2017 through 2019.

Ohio EPA will make a copy of this document available to the public on its web page: http://epa.ohio.gov/defa/ofa.aspx under the “What’s New” tab in the “WPCLF Documents Available for Review and Comment” list.

**Conclusion**

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

**Will have no significant environmental effect, will require no specific impact mitigation, and have no effect on high-value environmental resources** - The new UV disinfection system will replace an existing treatment system within the wastewater treatment facility, so will not impact any high-value environmental resources.

**Is cost-effective and not a controversial action** - The project involves replacing chlorine gas disinfection and sulphur dioxide dechlorination with UV disinfection. UV disinfection offers health and safety benefits, as well as operational advantages, over chlorine gas disinfection.

Defiance customers will pay approximately $735 annually for water in 2020, which is 1.6% of local median household income (MHI: $43,855). Annual water bills less than 1.8% of MHI are generally considered affordable.

Ohio EPA is unaware of controversy about or opposition to this project.

**Does not create a new, or relocate an existing discharge to surface or ground waters, will not result in substantial increases in the volume of discharge or the loading of pollutants from an existing source or from new facilities to receiving waters; and will not provide capacity to serve a population substantially greater than the existing population** - The project will replace chlorine gas disinfection and sulphur dioxide dechlorination with UV disinfection.
Contact info

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