Ohio Environmental Protection Agency

Mike DeWine, Governor
Jon Husted, Lt. Governor
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April 30, 2021

Limited Environmental Review and Finding of No Significant Impact

City of Columbus – Franklin County
HCWP Low Head Dam & Intake Rehabilitation
Loan number: FS390274-0341

The attached Limited Environmental Review (LER) is for water treatment plant rehabilitation in Columbus 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,

Jonathan Bernstein

Jonathan Bernstein, Assistant Chief
Division of Environmental and Financial Assistance

Attachment

LIMITED ENVIRONMENTAL REVIEW

Project Identification

Name: HCWP Low Head Dam & Intake Rehabilitation

Applicant: City of Columbus
910 Dublin Road
Columbus, OH 43215

Loan Number: FS390274-0341

Project Summary

The City of Columbus in Franklin County has requested $14,189,000 from the Water Supply Revolving Loan Account (WSRLA) to make improvements to the Hap Cremean Water Plant (HCWP) raw water intake structure and adjoining low head impoundment dam to address deterioration, improve debris removal, reduce maintenance requirements, and improve worker safety.

This project will bring the facility up to current standards and ensure a reliable source of raw water supply to HCWP. All improvements will be made within Columbus-owned property, except for a temporary disturbance to the stream corridor of Big Walnut Creek.

History and Existing Conditions

The City of Columbus Division of Water operates three large municipal water plants: Hap Cremean Water Plant, Dublin Road Water Plant, and Parsons Avenue Water Plant. The three facilities are interconnected by the water distribution system, but each is unable to maintain water to the entire distribution system alone. HCWP is the largest of the three water plants. It is a lime softening surface water treatment plant that draws raw water from the Big Walnut Creek downstream of the Hoover Reservoir. It has a capacity of 125 million gallons per day (MGD) and an annual average daily flow of approximately 70 MGD. The HCWP provides water to approximately 500,000 customers across a service area generally consisting of the northern half of Franklin County and a portion of southern Delaware County that includes a mixture of residential, commercial, and light industrial users. The HCWP was originally constructed in 1954 and later expanded in 1967, doubling its size.

The intake structure and low head dam are located on Big Walnut Creek and supply raw water to HCWP for treatment and distribution to Columbus water customers and contract communities. The intake structure facility was originally constructed in the 1950s and later expanded in the late 1960s. Since this time only minor improvements have been made to the facility. Visual inspection of the low head dam and abutment walls identified surficial concrete deterioration with erosion along the adjacent stream banks that needs to be addressed. Existing wooden flashboards and metal mounting posts were observed to be in poor condition and require periodic cleaning to remove logs/debris. Several locations along the intake structure exhibited conditions which warrant structural repairs to maintain and prolong the service life of the structure. The existing debris management system consists of debris booms, debris guards, manually cleaned bar screens, and a debris conveyor. The debris booms and guards are used to direct floating debris away from the intake. Both systems are in poor condition and generally ineffective at reducing debris accumulation at the bar racks.

Project Description

The primary objectives of this project are to reduce the amounts of debris directed to the intake, to replace the manually cleaned bar racks with a mechanically cleaned system, and to eliminate the wooden flashboards to reduce maintenance activities that occur on top of the dam. This project will include modifications to the intake structure to accommodate implementation of new mechanical screening equipment. Upgrades to the electrical and controls will be provided to support the new equipment. Improvements to the low head dam will include the replacement of temporary, wooden crest boards with a permanent concrete cap. Additionally, areas exhibiting deteriorated concrete will be rehabilitated. Site improvements will include stream bank stabilization to address erosion near the facility, dredging of Big Walnut Creek upstream of the low head dam, pavement replacement, and stormwater upgrades.

After analyzing possible alternatives for the project in collaboration with staff and design professionals, the following improvements were selected:

- Automated bar screen cleaning system versus manual labor – In an effort to reduce occupational hazards and to increase the operational reliability of the HCWP intake, Columbus has chosen to proceed with the installation of an automated debris removal system.
- Flow control crest gate for debris bypass atop the low head dam versus continuous flow weirs – A pneumatically operated type crest gate will be installed to allow for seasonal bypass of floating debris (leaves, branches, etc.) and other potential water quality hazards that may adversely affect the plant operations.
- Raising top of concrete structure versus replacement of existing dam flashboards – To reduce occupation hazards for plant maintenance staff and maintain a consistent normal pool elevation at the intake, the wooden flash boards atop the low head dam will be replaced by raising the concrete dam structure.
- A pedestrian access path versus vehicular access drive to and through the Big Walnut stream corridor downstream of the low head dam– To reduce the adverse environmental impacts on stream corridor of Big Walnut Creek, it is Columbus' intent to proceed with the less invasive pedestrian access path to the downstream side of the low head dam.
- Dredging Big Walnut Creek to match elevation per original record plans versus limiting to an area immediately adjacent to the intake – To reduce the adverse environmental impacts on stream corridor of Big Walnut Creek, it is Columbus' intent to forgo efforts of returning Big Walnut Creek to its original profile elevation several thousand feet upstream of the low head dam.
- Upgrade boat launch to Big Walnut Creek upstream of the low head dam from gravel to concrete – The boat ramp will be upgraded to concrete surface in an attempt to reduce washouts of the ramp and to reduce occupational hazards for plant maintenance staff.

This project will bring the facility up to current standards and ensure a reliable source of raw water supply to HCWP for years to come. Selected improvements for this project will not alter the current HCWP approved capacities. All improvements will be made within Columbus-owned property and rights-of-way and will not impact travel or pedestrian traffic along Cherry Bottom Road. Though the project involves improvements to existing structures and no new permanent disturbance is expected, a portion of the project will require construction within Big Walnut Creek.

Maps of the project location are provided in the exhibits below.

Implementation

Project Costs
Columbus plans to borrow $14,189,000 from the WSRLA. During the 20-year loan period Columbus will save approximately $1,961,644 by using WSRLA dollars at the Standard Long-Term rate of 0.60%, compared to the market rate of 1.85%.

Local Economy
The current Columbus residential water bill associated with this system is approximately $472/year. Projected residential water bills with the implementation of this and other associated drinking water projects are expected to increase to approximately $610/year, which is 1.2% of $51,612, the median household income (MHI) of Columbus.

By using WSRLA financing for this project, Columbus has minimized the economic impact on customers.

Project Schedule
The anticipated loan award will occur in May 2021. Construction is expected to begin in the summer of 2021 and completed by the spring of 2024.

Public Participation

Funding for the project design went through the city's legislation process, which provides public notice of the project and funding amounts. A public notice was posted on the City of Columbus' Public Utilities webpage detailing the proposed construction project. Contact information was provided for any public questions or concerns regarding the project.

Reviews of the respective environmental resources were completed by Ohio EPA, Division of Environmental and Financial Assistance. The review agency does not oppose the project.

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, scroll to: "Documents Available for Review and Comment – WSRLA Documents for Review and Comment") and will provide it upon request to interested parties. Information supporting this Limited Environmental Review (LER) is available from the project contact named below.

Conclusion

The proposed project meets the project type criteria for an LER; namely, it is an action within an existing public water system, which involves improvements to existing equipment. Furthermore, the project meets the other qualifying criteria for an LER; specifically, the proposed project:

- *Has no significant environmental effect, no effect on high value environmental resources, and does not require extensive specific impact mitigation.*
  The project involves rehabilitating the existing intake structure and low head dam, therefore no new permanent disturbance is expected. Standard construction best management practices will be required to control dust, sediment runoff, noise, and maintain safety. Local traffic will not be impacted.

  Although construction will occur within the floodplain and floodway of Big Walnut Creek, no new structures will be installed above the existing grade and the contractor will commit to take all necessary precautions to protect project work and equipment against flooding

occurrences.

A portion of the project will require dredging and construction within Big Walnut Creek. Columbus has obtained a nationwide permit for this temporary disturbance and has consulted with Ohio Department of Natural Resources to perform a mussel survey prior to work to ensure no disturbance of endangered or protected species.

- *Is cost effective and not controversial.*
  The proposed project is cost-effective as it involves rehabilitation to existing equipment so that structural stability and efficiency can be improved. Operation and maintenance costs will decrease at the completion of this project from reduced labor and maintenance. DEFA is unaware of any specific opposition to or controversy about this project that will improve the treatment and distribution of Columbus' drinking water.

- *Does not create a new, or relocate an existing, discharge to surface or ground waters; will not create a new source of water withdrawals from either surface or ground waters; will not significantly increase the amount of water withdrawn from an existing water source; 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 not create a new source of water withdrawals, a new discharge, or impact pollutants discharging from the treatment facility. Additionally, the project is not intended to increase capacity.

Based upon the available planning information for this project and the materials presented within this LER, Ohio EPA concludes that the proposed project will not result in any significant adverse impacts to any environmental features. The project is expected to have no significant short-term or long-term adverse impacts on the quality of the human environment or on sensitive resources such as surface waters, coastal zones, riparian areas, floodplains, wetlands, state-designated scenic or recreational rivers, prime or unique agricultural lands, aquifer recharge zones, archaeologically or historically significant sites, or threatened or endangered species.

This project will aid in the efficiency of operation at the Hap Cremean Water Plant and ensure a continuous supply of potable water to the Columbus area population.

Contact

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Exhibit 1: Project location map

Exhibit 2: Project location map