



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

November 9, 2020

Limited Environmental Review and Finding of No Significant Impact

**Dayton – Montgomery County
Phosphorus Removal Treatment Project
Loan number: CS390302-0020**

The attached Limited Environmental Review (LER) is for a phosphorus control facilities improvement project in Dayton 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.

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. 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

Project: Dayton Phosphorus Removal Treatment

Applicant: City of Dayton
101 West 3rd Street
Dayton, Ohio 45402

Loan Number: CS390302-0020

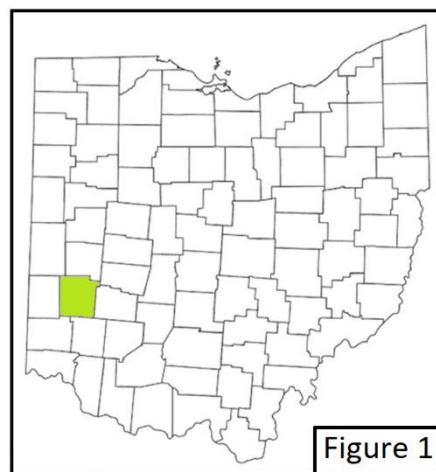
Project Summary

The City of Dayton has applied to the Water Pollution Control Loan Fund (WPCLF) for the Phosphorus Removal Treatment project. The work includes improvements to the existing phosphorus control facility at the Dayton Water Reclamation Facility (WRF). The total project cost is \$6,790,000. The project will result in reduced phosphorus loading to the Great Miami River to comply with a new National Pollutant Discharge Elimination System (NPDES) discharge limit beginning in July 2022. The project is scheduled to begin in late 2020 and be complete by 2022. Environmental impacts will be minimal as this project involves improvements to the existing Dissolved Air Flotation (DAF) building at the existing Dayton WRF.

History & Existing Conditions

The City of Dayton is located in Montgomery County (Figure 1), along the Great Miami River. Dayton owns and operates a Wastewater Reclamation Facility (WRF) on the southeast end of the City (see Figure 2) that discharges into the Great Miami River. Dayton's WRF has a design flow of 72 million gallons per day (mgd) to serve its population of approximately 140,939 people.

Ohio EPA has established a seasonal phosphorus loading limit for the City of Dayton and Montgomery County of 131.64 kg, or 1 mg/L, from July 1 through October 31 each year that will go into effect in July 2022. The discharge limit regulations will be updated in 2022 and Dayton will not be permitted to continue discharging phosphorus at the current rate of 2.33 mg/L.



Project Description

The City of Dayton's WRF without Total Phosphorus Treatment would be exceeding the Total Phosphorus Discharge limits set by Ohio Environmental Protection Agency (OEPA) in 2022, which this project will address. This project involves the construction of new polymer storage tanks for sludge thickening and ferric chloride storage and feed systems to control phosphorus amounts. Equipment was sized to accommodate the highest demand for phosphorus control during high

dissolved solids and low flow rate conditions. These improvements will occur within the existing DAF building (see Figure 3). Four rotary drum thickeners will be installed, and the old dissolved-aeration flotation tanks currently being used for thickening waste activated sludge will be demolished. Two of the existing tanks will remain in service during the construction sequence until the new system is online.

The rotary drum thickeners will require the waste activated sludge to be dosed with a polymer for flocculation before thickening. The bulk polymer storage tanks will be sized for a storage volume of 5000 gallons, divided into two tanks. Spill containment the bulk storage tanks will be provided for the area as a whole, with containment volume for 1 bulk storage tank, plus 20 minutes of fire sprinkler water. A recirculation pump will be provided to draw polymer out of the polymer discharge.

Currently Dayton feeds ferrous chloride for hydrogen sulfide control and will replace ferrous chloride with ferric chloride for this project. Chemically, ferric chloride can precipitate more hydrogen sulfide than ferrous chloride per volume, so ferric chloride is more efficient. The proposed ferric chloride tank arrangement is to have six large 9,100-gallon bulk tanks and one smaller 5,300-gallon bulk tank to store and age the Polymer for 10 days.

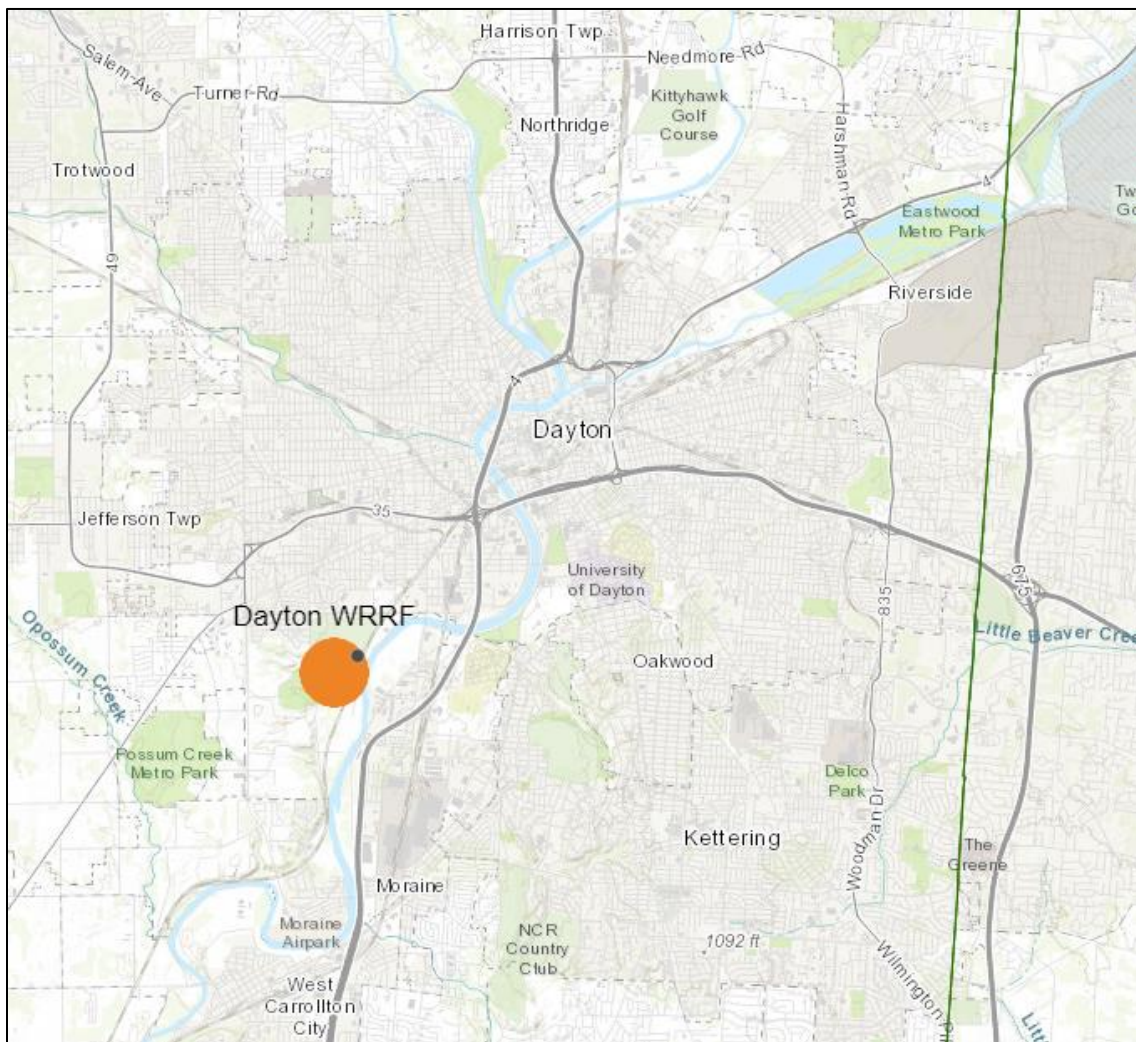


Figure 2. Map of Dayton and location of the Dayton wastewater reclamation facility on the south side of the city, along the Great Miami River.

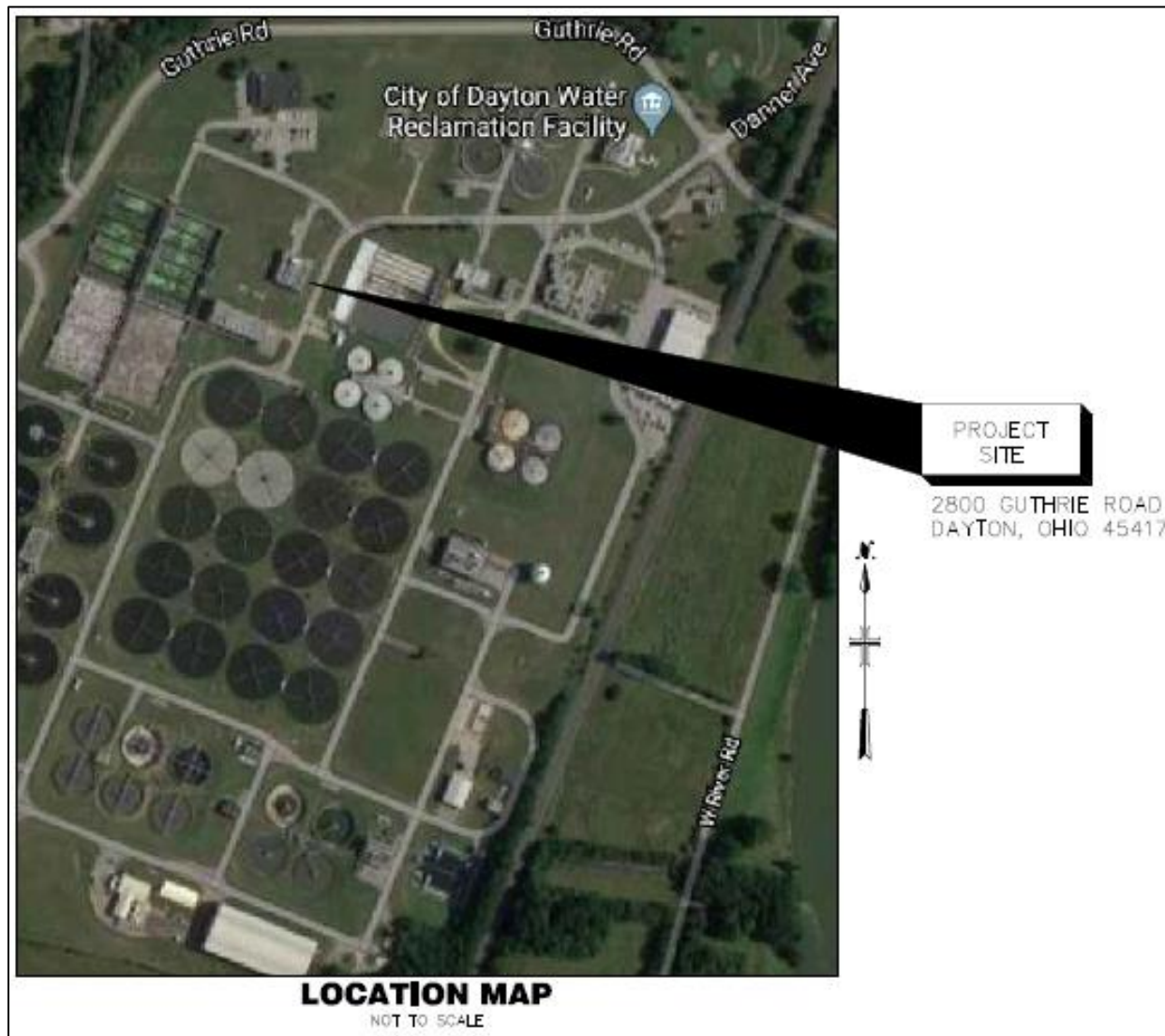


Figure 3. Map of Dayton WRF with Dissolved Air Flotation building marked.

Implementation

Dayton will borrow approximately \$8,333,445 from WPCLF. The City qualifies for a 0% nutrient reduction discount interest rate. During the 30-year loan period, Dayton will save approximately \$2,758,631 by using WPCLF dollars at this rate, compared to the market rate of 2.19%.

Local Economy

A typical residential customer living in Dayton is currently paying \$81 quarterly for sewer service. The previous sewer rate increase was 7% in January 2020, and the City plans to increase sewer rates 7% in 2021 and 2022. According to the 2013-2017 American Community Survey, the estimated median household income (MHI) for a resident of Dayton is \$30,128. The average yearly sewer costs amount to \$342 year, which is 1.1% of the MHI and is generally considered affordable.

Project Schedule

Anticipating loan award in December 2020, construction will be complete by June 2022.

Public Participation

The city has held public meetings where the project was discussed in October 2017, January 2018, April 2020, and September 2020. Ohio EPA is unaware of controversy about or opposition to the project. Ohio EPA will make a copy of this document available to the public on its web page epa.ohio.gov/defa/ofa#169638769-wpclf-documents-for-review-and-comment and will provide it on request.

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 improvements to treatment. 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, has no effect on high-value environmental resources, and is cost-effective and not a controversial action because this project will occur within the existing Dayton WRF, and involve improvements and changes to the existing DAF building. The WRF is a site that has been previously disturbed and graded. Changes to the DAF building will be sequentially constructed in a manner that allows the WRF to continue treatment throughout the project. This project is cost effective because this phosphorus removal project is a necessary improvement to allow Dayton's WRF to meet upcoming NPDES phosphorus discharge limits in July 2022. is Ohio EPA is unaware of any opposition to this project.

Does not create a new, or relocate an existing discharge to surface or ground waters, and 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 because this project will be improving the existing phosphorus control facilities to more efficiently and effectively remove seasonally high concentrations of phosphorus present in the wastewater in preparation to comply with upcoming phosphorus load limits in 2022. These improvements will allow Dayton to comply with the new limits, resulting in a decreased discharge of phosphorus from the Dayton WRF.

Will not provide capacity to serve a population substantially greater than the existing population because the project is improving the existing DAF building at the existing wastewater treatment plant and will not change sewer service connections.

The planning activities for the project have identified no potentially significant adverse impacts. 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 (surface waters, coastal zones, floodplains, wetlands, state-designated scenic or recreational rivers, prime or unique agricultural lands, aquifer recharge zones, archaeologically or historically significant sites, threatened or endangered species, or state and federal wildlife areas).

Contact information

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