August 5, 2019

Preliminary Finding of No Significant Impact
To All Interested Citizens, Organizations, and Government Agencies

Village of Dexter City – Noble County
Wastewater System Improvements
Loan Number: CS390313-0001

The attached Environmental Assessment (EA) is for a sewer infrastructure improvement project in Dexter City 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 EA describes the project, its costs, and expected environmental benefits. We would appreciate receiving any comments you may have on the project. Making available this EA and seeking your comments fulfills Ohio EPA’s environmental review and public notice requirements for this loan program, as stated in the Ohio Administrative Code (OAC) 3745-150-06.

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. More information can be obtained by contacting the person named at the end of the attached EA.

Any comments on our preliminary determination should be sent to me at the letterhead address. We will not act on this project for 30 calendar days from the date of this notice. In the absence of substantive comments during this period, our preliminary decision will become final. After that, Dexter City can then proceed with its application for the WPCLF loan.

Sincerely,

Jonathan Bernstein, Assistant Chief
Division of Environmental & Financial Assistance

Attachment
ENVIRONMENTAL ASSESSMENT

Project Identification

Project: Wastewater System Improvements

Applicant: Jeff Blair, Mayor
           Village of Dexter City
           PO Box 56
           Dexter City, OH  45727

Loan Number: CS390313-0001

Project Summary

The Village of Dexter City, in Noble County, has requested $1,651,000 from the Ohio Water Pollution Control Loan Fund (WPCLF) to supplement other financing for construction of a sanitary sewer system and wastewater treatment plant (WWTP). This project will eliminate aged and deteriorated household sewage treatment systems (HSTS) that are a potential threat to human health. Dexter City is eligible for WPCLF Principal Forgiveness, a loan that does not have to be repaid.

History & Existing Conditions

Dexter City, population 110, dates back to 1870 and expects no significant population growth. The service area includes 62 homes and 10 commercial or institutional buildings. The calculated sanitary average flow for the 20-year planning period is 18,225 gallons per day (gpd), which includes the estimated potential 5% increase over the next twenty years.

The village is served by Pure Water Company, a regional water system.

Sampling of stormwater ditches that drain to West Fork of Duck Creek indicates ongoing discharges of raw and partially treated wastewater to waters of the state, creating unsanitary conditions and stream quality impairment.

West Fork of Duck Creek is designated Warmwater Habitat (WWH) in the Ohio Water Quality Standards Aquatic Life Use. Sampling shows elevated coliform bacteria downstream of Dexter City making West Fork of Duck Creek unsuitable for recreational use.

Feasible Alternatives

With verified unsanitary conditions, doing nothing to eliminate failing HSTS (the “no-action” alternative) is unacceptable and could result in legal action by Ohio EPA. Shallow bedrock and lot sizes too small for contemporary septic systems preclude replacement of home sewage treatment systems as a feasible alternative.
Connecting to an existing sewer system is not feasible. Caldwell’s sanitary sewer system, 6.8 miles from Dexter City, is the closest; constructing sanitary sewers that distance would not be cost-effective. The Noble County Health department has determined that the only viable option for sanitary facilities is centralized collection and treatment of sewage.

Having rejected alternatives that are not feasible (doing nothing, replacing individual systems, and regionalizing service to Caldwell), Dexter City evaluated conventional gravity sewers, septic tank effluent pump (STEP) sewers and septic tank effluent gravity (STEG) sewers, and conventional extended aeration and recirculating media filtration treatment options.

Conventional gravity sewers could be feasible with the local terrain. However, extensive excavation of the shallow bedrock would increase construction costs considerably. STEG systems include a new septic tank with pump at each service address and small diameter pipes that carry only the liquid portion of sanitary flows. Because the small diameter pipes are under pressure from the pumps and do not rely on gravity, they typically are shallower than gravity sewers and can follow the land contour and therefore may be installed less expensively than gravity sewers. STEG systems are similar to STEP systems except the liquid portion of sewage is carried in small diameter pipes by gravity. Construction cost is between that of conventional gravity sewers that use larger pipes to carry the entire wastewater flow and STEP systems, which are usually shallower than STEG pipes.

Conventional gravity sewers require larger pipes and may require one or more pump stations. STEG and STEP systems require removal of existing septic tanks and installation of new tanks at each service address as well as individual pumps and the collection system pipes. The new septic tanks are part of the system and are typically maintained and pumped by the wastewater authority.

Conventional extended aeration wastewater treatment plants typically include influent screening followed by primary settling, aeration, secondary settling, tertiary treatment with sand filters, and ultraviolet (UV) light disinfection. Sludge is digested in aerobic conditions and applied to farmland as either a liquid or solid. Extended aeration is common for sewage from gravity systems and the technology is well understood by operators. Extended aeration requires significant electrical use for the blowers. The planning estimated cost for a gravity collection system and extended aeration treatment system for Dexter City is $3,215,000.

Recirculating media filtration (RMF) treatment, sometimes referred to as packed bed media filtration, involves passing wastewater multiple times through a tank of filters followed by ultraviolet light disinfection. Sludge is digested in aerobic conditions and ultimately applied to farmland. This type of treatment is common for STEP or STEG collection systems that deliver only the liquid portion of domestic waste to treatment. RMF treatment has lower electrical demand compared to extended aeration. The planning estimated cost for a STEP/STEG collection system and RMF Treatment System was $2,910,000.

**Selected Alternative and Project Description**

Based on monetary (construction cost and life cycle cost) and non-monetary (operator training, social and environmental considerations) factors, Dexter City selected a combination STEP and
STEGL collection system throughout the village and a proprietary RMF WWTP (Figure 1). Collection system components include:

- 68 1,000-gallon concrete septic tank/effluent pump units and four 1,500-gallon units
- 6,125 linear feet of 2-inch diameter high-density polyethylene force main
- 2,325 linear feet of 4-inch diameter PVC small diameter gravity sewer
- 860 linear feet of 6-inch diameter PVC small diameter gravity sewer

WWTP components include:

- Four recirculating membrane filter tanks
- Ultraviolet (UV) disinfection system
- Alkalinity control chemical feed system

Each septic tank will be equipped with a polyethylene pump vault that will house an effluent filter cartridge, high-head effluent pump, ball valve, check valve and float switch assembly. The pump vault will allow maximum sludge and scum accumulation before pumping is required. The pump controls will include audible and visual alarms.

Local topography determines where the STEG and STEP pipes, respectively, will be installed.

The proposed WWTP will be constructed in the southern part of the village and include a gravel access drive and parking area and a control building. The WWTP, designed for 20,000 gpd average daily flow and 100,000 gpd maximum flow, will consist of a 15,000-gallon pre-anoxic tank, four Orenco AdvanTex AX-Max treatment units with chemical feed for alkalinity control, and UV disinfection. The AdvanTex technology treats the wastewater by recirculating it over hanging textile media and includes a recirculation chamber, a recirculation pump chamber and the textile media in fiberglass tanks with appropriate anchoring. The recirculation pumps convey wastewater through manifolds and distribute it over the textile media. Activated carbon controls odors. A chemical feed system will distribute soda ash slurry into the recirculation line for alkalinity control. Effluent will be pumped to a closed conduit, pressurized UV disinfection system in the control building. Emergency power will be provided by a 60-kilowatt diesel generator with an automatic transfer switch, exhaust silencer, and weatherproof enclosure.

**Implementation**

Dexter City will combine $770,000 from the Community Development Block Grant (CDBG) Water and Sewer Grant Fund with $556,000 from the Ohio Water Development Authority Unsewered Community Grant Assistance Program and $1,651,000 in a principal forgiveness loan from the WPCLF to finance this project. The WPCLF financing is a loan that does not require repayment. Dexter City will save approximately $487,000 by qualifying for the principal forgiveness funds over a 20-year loan period, compared to the market rate of 2.60%.

Construction will start in December 2019 and be completed by the end of 2020.
Public Participation

Public meetings required by the CDBG program were held on May 22 and June 5, 2019. Ohio EPA is unaware of opposition to or controversy about 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 WPCLF Documents for Review and Comment) and will provide it on request to interested parties. The following agencies reviewed this project’s planning information:

- Ohio Environmental Protection Agency
- State Historic Preservation Office
- Ohio Department of Natural Resources
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service

None of the review agencies opposes the project.

Figure 1 – Sewer Service Area and WWTP Location
Environmental Impacts

This project could directly affect environmental features. Because the project is designed to provide sanitary sewers and centralized wastewater treatment in the Village of Dexter City and provide no additional capacity in the proposed system for significant growth, the project is not expected to lead to new development or associated indirect or cumulative impacts.

Proposed construction of sewers and WWTP will not alter major landforms because the sewer system will be underground and only minor grading will be required for the WWTP.

Part of the proposed WWTP site is in the regulatory floodplain. The design meets floodplain requirements and construction will have no adverse effect on flood levels.

No wetlands or surface water resources are in the immediate project construction area, and, because the village is served by Pure Water Company, ground water is not a water supply in the project vicinity. Shallow excavation is unlikely to require dewatering that could affect ground water.

No important terrestrial habitats or aquatic habitats are in the project area. Because all excavation will be in roads, alleys, mowed lawn, no agricultural land is affected. Limited tree removal is required and will completed after September 30 or before April 1 to avoid impacts to endangered Indiana bats or threatened northern long-eared bats. The project involves no work in streams or wetlands. Stormwater quality will be protected by use of construction best management practices for erosion and sediment control. The project will result in no change of land use except for the small area of mown lawn adjacent to the village park where the WWTP will be.

The project area in Noble County meets standards for the six regulated air pollutants (carbon monoxide, sulfur dioxide, nitrogen oxide, lead, particulate matter, and ozone). Neither construction nor operation of the proposed WWTP will add significant air pollutants. Contractors will ensure fugitive dust is minimized during construction by applying water or other environmentally benign dust suppressants. The local air pollution contribution by construction vehicles will be similar to that of vehicles regularly transiting the construction area. For these reasons, the project should have no significant adverse short-term or long-term impacts on local air quality.

Construction noise will be locally audible and similar to sounds from normal traffic. Construction will involve excavation in roads and alleys. Temporary disruption to local traffic will be controlled by use of standard measures (barricades, detours, signs, barrels, flaggers) to ensure safety. Trenches will be covered or filled at the end of each workday to help protect public safety. After construction is complete and road surfaces replaced and lawns restored, local aesthetics will be little changed from pre-construction conditions. Septic odors that may have been evident for years will be eliminated. For these reasons, this project will result in no significant adverse short- or long-term impacts to noise, traffic, safety, or aesthetics are expected due to this project.

After construction is complete, this project will require modest amounts of electricity to operate the pumps at each service address and to operate the WWTP and will have no adverse effect on local or regional energy supplies.
The State Historic Preservation Office concurred with the review determination that this project will not cause a significant adverse effect to properties listed or eligible for listing in the National Register of Historic Places (cultural resources). In the event of archaeological finds during construction, Ohio Revised Code Section 149.53 requires contractors and subcontractors to notify the State Historic Preservation Office of any archaeological discoveries in the project area, and to cooperate with the Office in archaeological and historic surveys and salvage efforts when appropriate. Work will not resume until a survey of the find and a determination of its value and effect has been made, and Ohio EPA authorizes work to continue.

Dexter City implemented a modest wastewater utility fee in December 2018 to prepare residents for regular sewer bills. When the new system is operational, Dexter City residents will pay a new sewer bill of approximately $336 annually, which is 1% of local median household income (MHI; $33,393) and less than the $677 Ohio average annual bill. Sewer bills less than 1.8% of MHI are generally considered affordable. Because the STEP/STEG system will be owned by Dexter City, the new septic tanks and pumps and pipes are part of the project construction cost.

By using the WPCLF principal forgiveness financing combined with grants, Dexter City will have no debt service from this project and has minimized the financial impact on residents and the local economy.

Conclusion

Based on its review of this project’s general plans and other information, Ohio EPA concludes that no significant short-term or long-term adverse direct environmental impacts will result from the project as related to the environmental features discussed in this Environmental Assessment. This is because these features do not exist in the project area, the features exist but will not be adversely affected, or the impacts of construction will be temporary and mitigated.

This project equally serves the entire Dexter City community 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.

For these reasons, this project, alone or in combination with other projects, is not expected to result in any significant indirect or cumulative short-term or long-term adverse environmental impacts.

Ohio EPA expects the economic impact of the project on the average user to be insignificant because sewer rates are reasonable and Dexter City received a favorable financing package.

The project will eliminate failing HSTS and their risk to human health and aquatic life.

For more information, please contact:

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