June 29, 2017

FINDING OF NO SIGNIFICANT IMPACT
TO ALL INTERESTED CITIZENS, ORGANIZATIONS,
AND GOVERNMENT AGENCIES

CITY OF PIQUA, WASTEWATER PLANT EXPANSION NRD
WPCLF #CS390755-0009

The purpose of this notice is to seek public input and comments on Ohio EPA's preliminary decision that a Supplemental Environmental Study is not required to implement the recommendations discussed in the attached Environmental Assessment of a wastewater facilities plan submitted by the City identified above.

How were environmental issues considered?

The Water Pollution Control Loan Fund program requires the inclusion of environmental factors in the decision-making process. Ohio EPA has done this by incorporating a detailed analysis of the environmental effects of the proposed alternatives in its review and approval process. Environmental information was developed as part of the facilities plan, as well as through the facilities plan review process and during site inspections. The Agency's preliminary Environmental Assessment found that the project does not require the preparation of a Supplemental Environmental Study.

Why is a Supplemental Environmental Study not required?

Our environmental review concluded that significant environmental impacts will not result from the action. Any adverse impacts have either been eliminated by changes in the facilities plan or will be reduced by the implementation of the mitigative measures discussed in the attached Assessment.
How do I get more information? A map depicting the location of the project is included as part of the Environmental Assessment. The Environmental Assessment presents additional information on the project, alternatives that were considered, impacts of the action, and the basis for our decision. Further information can be obtained by calling or writing the contact person listed in the back of the Environmental Assessment.

How do I submit comments? Any comments supporting or disagreeing with this preliminary decision should be submitted to me at the letterhead address. We will not take any action on this facility’s plan for 30 calendar days from the date of this notice in order to receive and consider any comments.

What happens next? In the absence of substantive comments during this period, our preliminary decision will become final. The C will then be eligible to receive loan assistance from this agency.

Please bring any information that you feel should be considered to our attention. We appreciate your interest in the environmental review process.

Sincerely,

Jerry Rouch, Assistant Chief
Division of Environmental & Financial Assistance - OFA

Attachment
ENVIRONMENTAL ASSESSMENT

Project Identification

Name: Piqua Wastewater Plant Expansion NRD

WPCLF#: CS390755-0009, AIMS #5945

Contact: Gary Huff, City Manager
City of Piqua
201 Water Street
Piqua, OH 45356

Proposed Project

1. Summary

The City of Piqua in Miami County has requested $50,070,000 from the Ohio Water Pollution Control Loan Fund (WPCLF) to improve its wastewater treatment plant (WWTP), eliminate a sanitary sewer overflow (SSO), and increase treatment capacity.

2. Background

History and existing conditions

Piqua owns and operates a wastewater collection system which is comprised of separate sanitary and storm sewers. Sanitary sewer overflows (SSO)s occur when the sanitary sewer’s capacity has been exceeded and untreated, raw sewage is discharged directly into a body of water. This discharge releases flow to prevent sewage backups into basements or streets, causing property damage and threatening public health. If flows entering a wastewater treatment plant (WWTP) exceed the hydraulic or treatment capacity, flow “bypasses” the WWTP, discharging directly, untreated, into the receiving stream.

The collection system is subject to excessive infiltration and inflow (I/I) and contains two SSOs: West Interceptor SSO 300 which periodically discharges sewage upstream of the WWTP and Hemm Road SSO 301 which has never been activated or used. Infiltration is groundwater that enters through cracks and/or leaks in the sanitary sewer pipes which are often caused by age-related deterioration, loose joints, or installation or maintenance errors. Inflow is stormwater that enters sanitary sewers through direct connections such as downspouts or sump pumps.

Piqua’s WWTP is located south of the city, east of and adjacent to the Great Miami River, at 121 Bridge Street (see Figure 1). Originally completed in 1958, the facility uses a conventional activated sludge treatment process designed for an average daily design flow (ADDF) of 4.5 million gallons per day (MGD) and peak daily design flow (PDDF) of 8.3 MGD.

In 2009, Piqua constructed an equalization basin to capture and temporarily hold up to 1 million gallons of excess flow during wet weather for later treatment. In 2011, the City re-lined an aging 36-inch West Interceptor Sewer which bisects the Great Miami River, enters the WWTP from the north, and was
identified as a major source of I/I during higher river water levels. While the sewer re-lining eliminated heavy root intrusions which restricted flow and allowed significant infiltration, Piqua recognized that more improvements were necessary to eliminate the I/I and that existing equipment at the facility has reached or exceeded its useful life. To ensure that the existing plant will operate consistently, efficiently, and without significant maintenance issues for the next 20 years and beyond, most of the existing equipment needs to be replaced or upgraded.

Figure 1: Piqua WWTP location

Population and Flow Projections
The WWTP serves approximately 20,000 residents, industry, some unincorporated portions of Miami County, and the Village of Fletcher. Over the 20-year planning period, the City’s sewer service area is projected to develop with new residential and commercial/industrial growth which will increase wastewater flow. Piqua expects its sewer service area to expand with continued development.

To treat additional flow and eliminate SSO bypass events, Piqua will expand its WWTP onto a 10-acre site, immediately adjacent to the existing WWTP, increasing treatment capacity from the current 4.5 MGD to 8.7 MGD and allowing for treatment of wet weather flows up to 21.5 MGD. All portions of the treatment process must be able to handle the design peak hourly influent flow rate.
**Water Quality**

The WWTP expansion will eliminate future West Interceptor SSO 300 discharges into the Great Miami River which is currently in attainment of Warmwater Habitat aquatic life use as reported in the Ohio 2014 Integrated Water Quality Monitoring and Assessment Report. However, pollutant loadings will increase and water quality may be lowered as a result of the WWTP’s expansion. Due to this net increase, an antidegradation analysis was completed and an NPDES permit modification was issued in draft on September 19, 2016. This draft was advertised for a 30-day public notice and no public comments were received, therefore the proposed NPDES permit was not be subject to public hearing requirements under the applicable antidegradation rules. The interim NPDES permit was issued on October 19, 2016. In accordance with the antidegradation rule, OAC 3745-1-05, the Ohio EPA Director has determined that a lowering of water quality in the Great Miami River is necessary to accommodate social or economic development in the area.

The final effluent limits for the WWTP are as follows (30-day average):

<table>
<thead>
<tr>
<th></th>
<th>Summer</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBOD₅</td>
<td>10 mg/l</td>
<td>10 mg/l</td>
</tr>
<tr>
<td></td>
<td>725 lb/day</td>
<td>725 lb/day</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>12 mg/l</td>
<td>12 mg/l</td>
</tr>
<tr>
<td></td>
<td>870 lb/day</td>
<td>870 lb/day</td>
</tr>
<tr>
<td>Ammonia-Nitrogen</td>
<td>1.0 mg/l</td>
<td>3.0 mg/l</td>
</tr>
<tr>
<td></td>
<td>72 lb/day</td>
<td>217 lb/day</td>
</tr>
<tr>
<td>E. Coli</td>
<td>126 #/100 ml</td>
<td></td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>6 mg/l (min.)</td>
<td>6 mg/l (min.)</td>
</tr>
<tr>
<td>pH – S.U.</td>
<td>6.5 – 9.0</td>
<td></td>
</tr>
</tbody>
</table>

* Effluent loadings are based on average design flow of 8.7 MGD.

The existing WWTP consists of a flow equalization basin, influent pump station, screening, grit and grease removal, 3 primary clarifiers, 4 aeration tanks, 4 final clarifiers, chlorination/dechlorination (gaseous chlorine/sulfur dioxide), post aeration, effluent pumping, an outfall to the Great Miami River and a backup generator. Additionally, the WWTP uses anaerobic sludge digestion (primary digester and secondary digester), heat treatment, sludge dewatering using belt filter press, gravity thickening, digester gas utilization, and land application of treated sludge.

3. **Discussion of Feasible Alternatives**

Alternatives were developed and compared in terms of facility and regulatory requirements including current and impending future discharge limits, construction, annual operation and maintenance (O&M) costs, and present worth/life cycle costs. Advantages and disadvantages of each alternative related to cost and non-cost parameters were identified. A no-action alternative was not considered viable as it would not address the underlying problems noted earlier in this document. Additionally, the City’s National Pollutant Discharge Elimination System (NPDES) Permit required the elimination of the constructed West Interceptor Sewer SSO 300 by February 28, 2020.

In 2006, the City conducted an I/I investigation, or sewer system evaluation, and in 2013, completed the Final Report of the WWTP Facility Plan, which recommended WWTP improvements to enable the City to meet regulatory requirements established by the Ohio Environmental Protection Agency (Ohio EPA) and provide treatment for increased wastewater flows anticipated from residential, industrial, and commercial growth.
The 2013 WWTP Facility Plan included evaluations of several wastewater and solids treatment processes. After initially considering multiple treatment technologies, upgrades to the existing WWTP were recommended to reliably treat up to 7.0 MGD of wastewater during average-day flows and some wet-weather events, and the addition of a high-rate treatment process to treat up to an additional 6.0 MGD of wastewater during wet-weather events, contingent on successful completion of pilot testing. Following completion of a Basis of Design report which reevaluated the liquid treatment processes that had been considered in the 2013 WWTP Master Plan and Piqua amended its WWTP Facilities Plan in 2014 to include an expansion of treatment capacity to successfully treat flows and loads conveyed to the treatment plant and to meet current and anticipated future regulatory mandates.

4. **Selected Alternative**

The existing treatment plant will be converted from a conventional activated sludge to an extended aeration/oxidation ditch plant. This expansion encompasses the existing plant site but is mostly situated on a new parcel, approximately 10-acres, adjoining city-owned property. The new plant is designed to treat an average daily design flow of 8.7 MGD and capable of treating a peak hourly flow of 21.5 MGD. Oxidation ditches, secondary clarifiers, and a secondary control building will be constructed east of the current WWTP site. Both the existing equalization basin and the existing wastewater treatment facilities will continue to be used until they are upgraded or replaced.

The capacity of the solids handling processes will be increased to correspond to a wastewater influent flow of 8.7 MGD. This increase will be accomplished with the addition of a sludge dewatering centrifuge and conversion of the three existing aeration tanks to aerobic digesters. A new biosolids dewatering and storage building will be constructed to house the biosolids dewatering equipment and store the dewatered biosolids before being hauled for land application or landfilled. An overall schematic of the treatment plant is shown in Figure 2.

The existing chlorine disinfection and dechlorination processes will be replaced with an UV disinfection process. Final effluent limits for dissolved oxygen, total suspended solids, summer and winter ammonia and CBOD5 are based on best available demonstrated control technology (BADCT).
5. Project Implementation

The City will borrow approximately $50,070,000 from the Water Pollution Control Loan Fund (WPCLF) during the month of July 2017; using the Standard Interest Rate of 2.13% during the month of June 2017 (rates are set monthly and may change for a later loan award), the City will save approximately $10,700,000 over a 25-year term by using WPCLF loan monies in comparison to the June market rate of 3.51%. Additionally, costs associated with the installation of equipment to reduce nutrient discharges are eligible for the 0% Nutrient Reduction Discount (NRD) interest rate, which will reduce Piqua’s actual WPCLF interest rate even further. Actual interest saving realized by the City through the NRD will be calculated when the final costs associated with NRD related equipment are available.

The capital costs of this project will be funded by user fees collected through a user charge system. On January 17 2017, an ordinance was passed by the Piqua City Council to set a series of rate increases which will increase rates by 20% over the next four years. Budgets and rates will be reviewed annually.

According to the 2014 American Community Survey, Piqua’s annual median household income (MHI) is $37,699. After the proposed 2017 rate increase, Piqua’s average annual user charge of $345 will equal 0.9 percent of the MHI for the project area, which is well below the statewide average for sewer rates (1.3 percent of the MHI).
6. **Environmental Impacts of Selected Alternative**

Because of the nature of both the project and location of work, no significant adverse environmental impacts are anticipated to occur as a result of this project. All work will occur within the confines of the existing WWTP boundaries and immediately adjacent 10-acres which is currently a limestone quarry lacks important environmental features. Specifically, no adverse impacts to major landforms, land use or farmland, wetlands, or air quality will result, either because they are not present in the work area or the project is not of a type that will affect them. The Great Miami River is not a state or federal scenic or recreational river. No federal or state-designated wildlife areas overlap with the construction area. Further, standard construction best management practices will minimize impacts of noise, dust, traffic and storm water runoff.

Project construction has the potential to adversely affect the following environmental features, but the adverse effects have been reduced or mitigated to acceptable levels as described below.

**a. Surface Water and Ground Water**

The WWTP and expansion site falls within the boundaries of the Great Miami Buried Aquifer (see Figures 3-4), a USEPA-designated sole source aquifer (SSA). SSAs are defined as aquifers which supply at least 50 percent of the drinking water for its service area and have no other reasonably available alternative drinking water sources should the aquifer become contaminated. Because of this, SSAs are subject to specific review criteria. With the City’s contractors working in compliance with spill prevention and containment provisions in contract documents, and being informed of the SSA’s regional significance, Ohio EPA expects that the City’s underlying aquifer will be adequately protected from any spills which may occur during this proposed project.

Given the project location, Ohio EPA anticipates that ground water will be encountered during construction. As a result, temporary site dewatering may be necessary. In order to avoid adverse direct impacts, all dewatering flows will be filtered before discharge to any storm sewers or other stabilized sites. Any variations from this proposed dewatering plan may require additional review and approval by Ohio EPA. All dewatering activities must conform to all relevant parts of the contract documents (such as erosion control), as well as the Stormwater Pollution Prevention Plan and any NPDES permit (pretreatment) requirements. As a result, all discharge of dewatered flows will be monitored so as to avoid any adverse environmental impacts from the release of contaminated ground water, sediment laden water, or colder than ambient temperature water to surface water. Once construction is successfully completed, the dewatering activities will cease, and ground water levels will begin to return to their pre-construction levels.

Based on the above, the proposed project should not result in significant, short-or long-term, direct adverse environmental impacts to ground water quality or quantity.

In addition to no direct effects on ground water, the proposed project should also not indirectly affect any ground water resources through either related infrastructure improvements or property development. The main reason for this conclusion is that the city already provides potable water to the project area, and so any future development that this proposed project helps facilitate should not result in any corresponding increase in ground water use or noticeable change in its quality. Overall, no adverse effects on ground water quality or quantity are expected to result from this proposed project.
Figure 3: Greater Miami Buried Valley Aquifer

Figure 4: Greater Miami Buried Valley Aquifer - WWTP Location Overlay
b. **Aquatic, Terrestrial, and Critical Habitat, including Floodplains and Wetlands**

The WWTP construction contract documents call for the contractor to complete a Stormwater Pollution Prevention Plan (SWP3). This will ensure that appropriately timed site restoration activities occur and that aquatic and terrestrial habitats experience no significant, short-or long-term, direct adverse environmental impacts.

The City received a Nationwide Permit No. 3 from the U.S. Army Corps of Engineers (USACE) for the discharge of riprap (fill material) in conjunction with the replacement of an existing outfall structure. This permit is contingent upon compliance with the 401 Water Quality Certification issued by the Ohio EPA on March 17, 2017. As stated by the Piqua WWTP General Notice of Intent, an individual 401 Water Quality Certification is not required for this project.

The project area is within the range of the Indiana bat, a federally-listed endangered species, the northern long-eared bat, a federally-listed threatened species, the rayed bean and snuffbox (both endangered) and the bald eagle (species of concern). Several trees to the north and south of the outfall will be cleared in conjunction with the structure’s repair. Any trees with a trunk diameter 3” or greater will be cut only between October 1st and March 31st. Potential impacts to state- or federally-listed mussels will be avoided or mitigated through coordination with the Ohio Department of Natural Resources and the U.S. Fish and Wildlife Service. No trees large enough to host bald eagle nests are in the project area. Section 7 obligations under the Endangered Species Act must be reconsidered if new information reveals impacts of the project which may affect federally listed species. No designated critical habitat is in the project area.

Flood elevations at the WWTP were determined using the Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) for the Great Miami River. To protect against the 100-year flood event, all new structures will be constructed with the top of the tank or finished floor at a minimum of 2-ft above the 100-year flood elevation. This exceeds the Flood Protection Elevation by 1-ft as described in the City’s Code of Ordinances Chapter 155: Floodplain Regulations.

c. **Archaeological and Historic Resources**

Immediately adjacent to the WWTP, the Piqua Nuclear Power Facility is potentially eligible for listing in the National Register of Historic Places. Due to the fact that the newly constructed facilities will be similar to those already adjacent to the power facility and construction will occur in previously disturbed areas lacking potential archaeological or historical features, the State Historic Preservation Office concurred with Ohio EPA’s 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.

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.

7. **Public Participation**
The City convened an open meeting on January 17, 2017, during which Ordinance 20-16 was approved to amend sewer rates. Additionally, the project’s description has been readily available at [http://piquaoh.org/city-departments/wastewater-department/history/](http://piquaoh.org/city-departments/wastewater-department/history/). Information has been available on an ongoing basis with the ability for public comments on the City’s website located at [http://piquaoh.org/city-departments/wastewater-department/wastewater-system-engineering-reports/](http://piquaoh.org/city-departments/wastewater-department/wastewater-system-engineering-reports/).

As part of its State Environmental Review Process, Ohio EPA will post this Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) to the Division of Environmental and Financial Assistance’s (DEFA) web page located at [http://epa.ohio.gov/defa/ofa.aspx](http://epa.ohio.gov/defa/ofa.aspx) “WPCLF Documents for Review and Comment.”

Ohio EPA is unaware of any public opposition to this project.

8. **Reasons for a Preliminary Finding of No Significant Impact**

Based upon Ohio EPA’s review of the planning information and the materials presented in the Environmental Assessment, it is concluded that there will be no significant adverse impacts resulting from Piqua’s proposed WWTP upgrades as it relates to the environmental features discussed previously. Through the use of standard construction mitigative measures, any adverse impacts from construction should generally be short-term and insignificant.

The proposed upgrades will allow the WWTP to meet both its current effluent discharge permit limits and nutrient criteria that will be established in the facility’s updated NPDES permit.

9. **For further information, please contact:**

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