August 22, 2018
Limited Environmental Review and Finding of No Significant Impact
City of Toledo Ozone Treatment Facilities
Lucas County
WSRLA # FS390915-0123

The attached Limited Environmental Review (LER) is for a water supply project in your area 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 document.

Loan award will proceed without further environmental review or public comment unless new information shows that environmental conditions of the proposed project have changed significantly.

Sincerely,

Jerry Rouch

Jerry Rouch, Assistant Chief
Division of Environmental and Financial Assistance
Office of Financial Assistance

JR/LMM

attachment

DIVISION OF ENVIRONMENTAL AND FINANCIAL ASSISTANCE
OFFICE OF FINANCIAL ASSISTANCE
WATER SUPPLY REVOLVING LOAN ACCOUNT

Ohio Environmental Protection Agency

LIMITED ENVIRONMENTAL REVIEW

August 22, 2018

A. PROJECT IDENTIFICATION

1. **Project Name:** City of Toledo Ozone Treatment Facilities

2. **Project Contact:** Wade Kapszukiewicz, Mayor
Ohio Government Center, 640 Jackson Blvd., Suite 2200
Toledo, Ohio 43604-1110

WSRLA No.: FS390915-0123

B. PROJECT SUMMARY AND EXISTING NEED

The City of Toledo (Toledo) applied to the Ohio Water Supply Revolving Loan Account (WSRLA) for a $44,500,000 low-interest loan to finance the construction of new ozone treatment facilities at the Collins Park Water Treatment Plant (WTP).

In August of 2014, a large Harmful Algae Bloom (HAB) occurred near the intake for the WTP in Lake Erie, during which the microcystin (MC) concentration in the raw water increased to over 50 times the level allowed in finished drinking water. This led to a "Do Not Drink" advisory for Toledo and prompted efforts at the WTP to research and invest in better MC removal technology including optimizing the current treatment processes.

In response to widespread HABs, Ohio Administrative Code (OAC) Rule 3745-90-05 OAC was implemented. This rule requires a General Plan to address treatment deficiencies when MC levels exceed a certain threshold. Accordingly, Toledo has developed a General Plan in response to high MC levels. This General Plan documents the capabilities of the treatment in place to remove MC in the short term and how the existing treatment along with new treatment technologies will be capable of treating in the long- term.

The first step in addressing HAB control for any utility is to optimize their existing treatment process. Toledo has already enacted a program to address HAB contamination through the Collins Park WTP. The General Plan determined that the next course of action to deal with the HAB toxins is to construct new ozone treatment facilities.

C. PROJECT DESCRIPTION

Toledo has been operating the Collins Park Water Treatment Plant for over 75 years and has been providing potable water to a population of approximately 500,000 located in Toledo along with portions of Lucas, Wood, and Fulton counties in Ohio and portions of southern Monroe County in Michigan.

The source water for the WTP is the western basin of Lake Erie, which is subject to seasonal HABs that can produce algal toxins, specifically microcystin (MC). The intake is approximately three miles offshore.

The WTP is a conventional treatment plant including processes for single-stage precipitative lime softening, re-carbonation, filtration and chemical feed with a current capacity of 120 million gallons per day (mgd). Redundant capacity improvements are underway, which will provide a new rated plant capacity of 140 mgd and redundant capacity of 20 mgd. The existing chemical feed systems include potassium permanganate, alum, lime, soda ash, powdered activated carbon (PAC), carbon dioxide, polyphosphate, chlorine, chlorine dioxide, and fluoride. Following treatment, the water is stored in two 35-million gallon (MG) clearwells.

The combined West and East plants (on the same site; see Figure 2) have an average daily production of 74.65 MGD and a maximum daily demand of 123.82 MGD..

The General Plan submitted on December 21, 2017, presents many options including source protection, management, and avoidance, optimizing the existing treatment process within the WTP, and adding new technologies to prevent MC in the finished water. As the OAC rule requires a multi-barrier approach to the treatment of MC, several treatment techniques will be employed by the WTP to efficiently and effectively remove MC from the drinking water. Incorporating ozonation as proposed is another barrier to HAB toxins.

The short-term strategy is to use a PAC delivery system. The short-term HAB treatment facilities have been constructed and are currently in operation.

The long-term strategy is to utilize ozone treatment facilities in the multibarrier approach for treatment of HABs. Ozone is known to be a powerful oxidant. It is often used at water treatment plants for primary disinfection, T&O treatment, and treatment of algal toxins. Ozone has been considered and studied for its use at the WTP since the HAB event in 2014.

The WTP's particle removal processes will be optimized and treatment will consist of PAC, ozone, and chlorine addition. The treatment capability of each step in the multibarrier approach was evaluated through studies, treatment plant historical records, and available research to determine expected performance.

The plan is to install ozone facilities which will consist of the following: ozone generators in a common ozone generator building; a West Plant Building containing ozone treatment facilities; and an East Plant Building containing ozone treatment facilities.

The ozone component capacity will be 160 MGD and will be adequate for the treatment plant's approved capacity of 140 MGD.

Since design and construction of these new facilities will take some time, the existing PAC and permanganate feed systems will continue to be used in the near-term.

Ozone Process Summary

The plans propose to install liquid oxygen storage and delivery facilities for the purpose of providing gaseous oxygen to the ozone generators for production of ozone. From the generators, ozone gas will be divided between the West Plant Ozone Facilities and the East Plant Ozone Facilities. The ozone gas from the generators will be made into an ozone solution for injecting into a pipeline which will discharge into basins.

The ozone solution equipment will be located in the West and East Plant Ozone Contactor Basin Buildings.

D. ESTIMATED PROJECT COSTS

The total cost to construct the new ozone treatment facilities is $44,500,000 at an interest rate of 0% (HAB Infrastructure Improvement Discount) for 20 years. Toledo will save $29,637,000 by utilizing this 0% interest loan as compared to a 3.33% market rate loan.

The WSRLA loan will be repaid with revenue generated by water rates in the service area. Annual revenue increases of approximately 5% are expected beginning in 2020 through 2023 to support debt issuances required to complete the balance of Toledo's $500 million capital improvement program.

E. PROJECT SCHEDULE

Currently, the Collins Park WTP Ozone Treatment Facilities project is scheduled to begin construction in the fall of 2018 with final completion by December, 2021. The construction schedule of the Ozone Treatment Facilities project will be influenced by other projects occurring at the WTP.

The project's WSRLA loan award is anticipated for September 27, 2018.

F. PUBLIC NOTIFICATION

As part of its State Environmental Review Process, Ohio EPA's Division of Environmental and Financial Assistance (DEFA) will post this Limited Environmental Review (LER) and Finding of No Significant Impact to its web page located at: http://epa.ohio.gov/defa/ofa.aspx ("WSRLA Documents or Review and Comment").

Toledo maintains the Toledoh2o.com web site dedicated to the water capital improvement program. The site includes a narrative of the General Plan of improvements; project list, costs, and status, and Quarterly News & Updates. The ozone treatment project is included and updates have been provided since the site was first developed in 2015. Also, numerous presentations noting the proposed ozone facilities have been made at public, professional, and City Council meetings as listed below:

Group	Date
Stakeholder Advisory Committee	May 22, 2015
Toledo Regional Chamber of Commerce	August 19, 2015
Water Day (Home Depot)	October 26, 2015
Bay View Yacht Club	April 28, 2016
Toledo City Council - Water Quality, Streets and Infrastructure Committee	May 23, 2016
Toledo Regional Chamber of Commerce	June 28, 2016
Regional Water Advisory Board	June 30, 2016
Collins Park WTP Mayor Press Conference	August 3, 2017
Transportation Advocacy Group of NW Ohio	September 26, 2017
Collins Park WTP HAB Media Event	August 17, 2018

No public concerns have been raised about the project. The response at all public meetings has been supportive and media coverage via TV, radio, and newspapers has been positive.

Based on the limited environmental and economic impacts, this is considered an appropriate level of public participation.

G. PLANNING INFORMATION

The project site is an area that has been disturbed with the construction of several major plant improvements from 1940 to the present.

There were several alternatives initially considered to provide an additional treatment barrier for HAB events. The "Basis of Design Report of the Redundant Capacity Improvements Project" includes the complete evaluation; those alternatives have been summarized in this section.

The first alternative included enhancements to the existing permanganate, PAC and chlorination processes at the plant, which could be completed in a relatively short time frame to prepare the plant to treat MC for HAB events in the near-term.

The second alternative included the use of post-filtration use of granulated activated for treatment of MC. The life cycle cost for this alternative was much higher than the ozone alternative and was therefore excluded from the analysis.

The third alternative is ozone. The optimization of the current treatment processes within the WTP is an effective and cost- efficient measure to treat MC.

H. LIMITED ENVIRONMENTAL REVIEW (LER) CRITERIA

The proposed project meets the project type criteria for an LER; namely, it is an upgrade to an existing water treatment plant. Furthermore, the project meets the other qualifying criteria for a LER. Specifically, the proposed project:

Annual water bills in Toledo in 2016 were $262. Annual water bills will rise to approximately $319 by 2023. The state-wide average annual water bill is $620, and the new rate is 0.95 % of the $33,485 MHI which is considered affordable.

- **has no significant adverse environmental effect**, because the project is not located on or near sensitive resources such as floodplains, wetlands, state or federally-designated wild, scenic or recreational rivers, riparian areas, prime or unique agricultural lands, aquifer recharge zones, archaeologically and will not adversely impact historically significant sites, or where threatened or endangered species or their critical habitat are present. The project is not located in a coastal zone. It does not extend water service and will have no adverse secondary environmental impacts, such as the conversion of farmland to more intensive uses.

A stormwater runoff plan has been developed to convey post construction runoff from the plant site. The plan has been approved by the City of Toledo, Division of Engineering Services.

The contractor is required to submit and implement an approved site-specific erosion and sediment control plan for the construction period.

Additional electrical power will be required for ozone generation. The Collins Park Electrical Upgrade project is currently installing infrastructure to meet the additional power demand.

There are four pine trees and possibly two maple trees that will be removed. The trees will be removed between October 1 to March 31 to avoid any impact to endangered bats.

- **does not require extensive specific impact mitigation**, as the proposed project is in previously disturbed ground. Noise, dust, odors and impacts to air quality will be minimal and can be easily controlled using typical construction impact mitigation measures.

- **has no adverse effect on high value environmental resources** because none are present in the proposed work areas. The ozone facilities will not impact threatened and endangered species or sensitive environmental areas as construction activities will be limited within existing mowed grass areas and not within or adjacent to identified wetlands or sensitive environmental areas.

- **is not a controversial action** as it is supported by the citizens and is needed to ensure a safe water supply.

- **does not create a new, or relocate an existing discharge to surface or ground waters**, since it does not involve the installation of a new point source discharge or the relocation of an outfall.

- **will not result in substantial increases in the volume of discharge or loading of pollutants from an existing source or from new facilities to receiving waters**, since the proposed project does not involve a point source discharge.

- **will not provide capacity to serve a population substantially greater than the existing population,** as this project's purpose is to deal with HAB toxins to ensure a safe water supply.

I. CONCLUSION

The planning activities for the project have identified no potentially significant short- or long-term adverse impacts on the quality of the human environment or on sensitive resources such as floodplains, wetlands, surface water, coastal zones, endangered species or their critical habitat, cultural properties, farmland, raw water supplies, scenic or recreational rivers, air quality, farmland, or state and federal wildlife areas. Noise, dust and odor impacts will be minimal and temporary.

For further information, please contact:

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Figure 1 -Toledo, Lucas County, Ohio

Figure 2 – Site Plan Showing Improvements

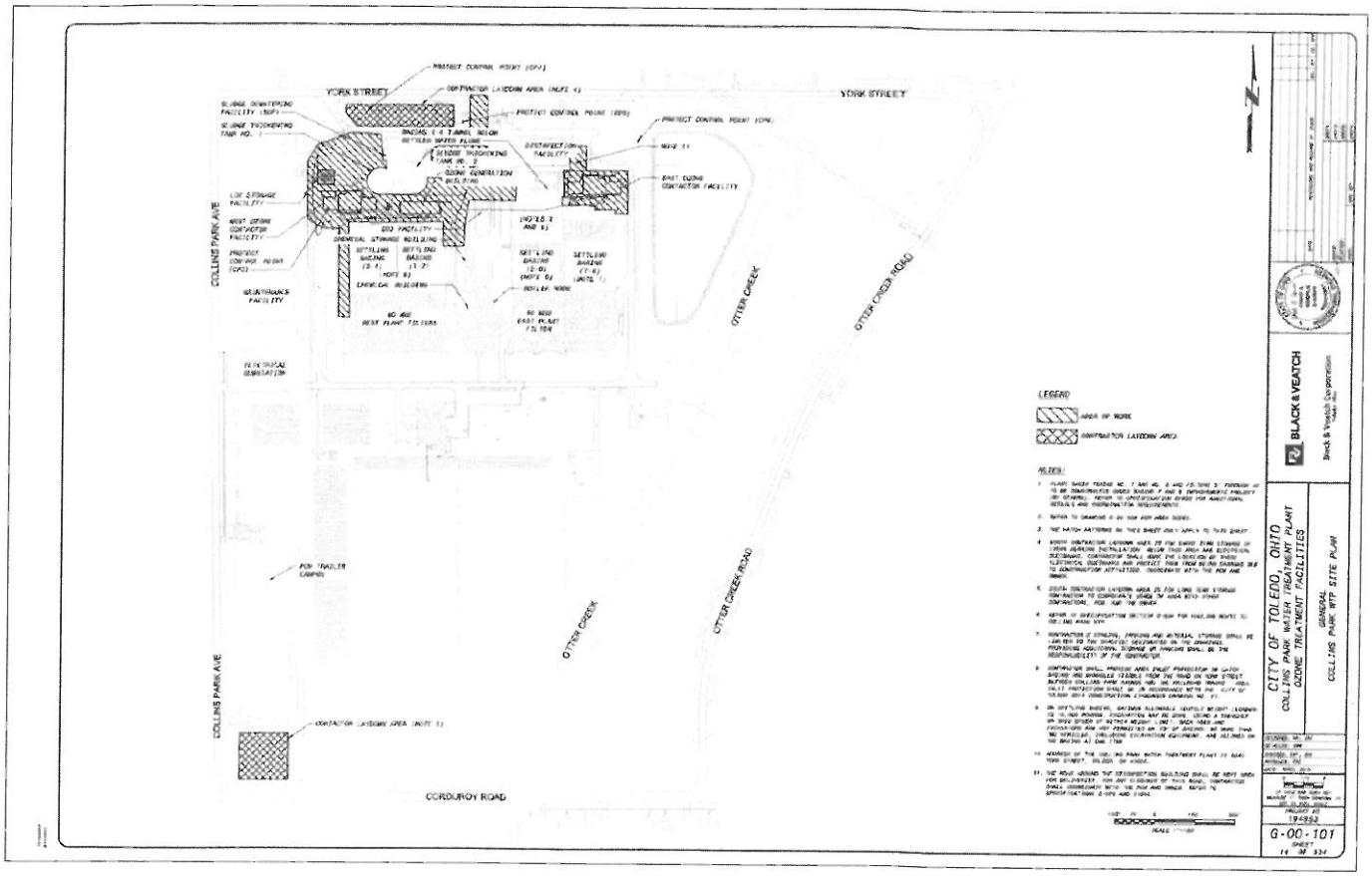
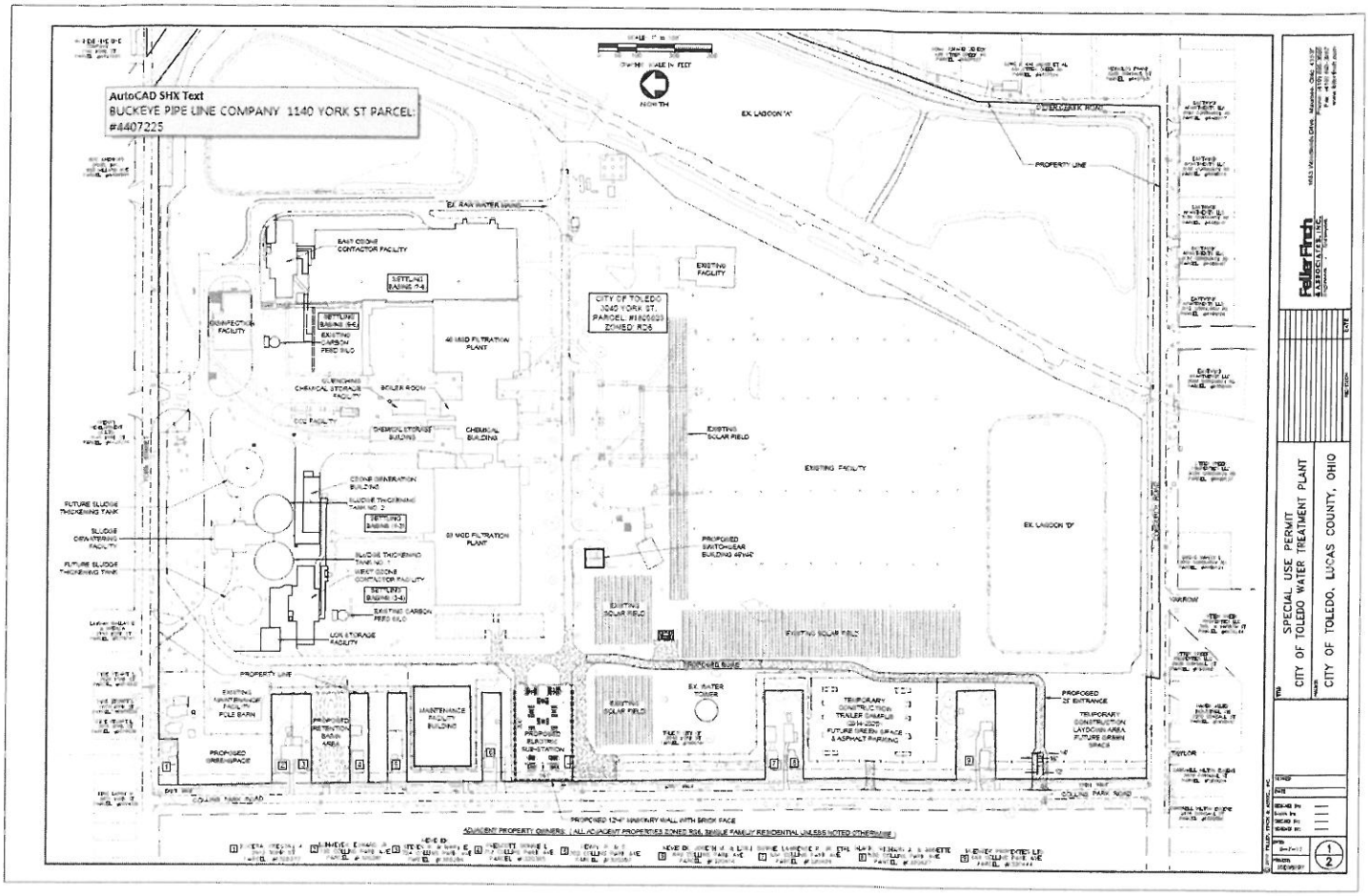


Figure 3 – Site Plan Details


AutoCAD SHX Text
BUCKEYE PIPE LINE COMPANY 1140 YORK ST PARCEL #4407225
CITY OF TOLEDO
1040 YORK ST.
PARCEL #1405603
ZONED R-6
PROPERTY LINE
EX. LAGOON 'A'
EX. LAGOON 'B'
EXISTING FACILITY
EXISTING SOLAR FIELD
PROPOSED SWITCHGEAR BUILDING 40'X40'
EX. WATER TOWER
MAINTENANCE FACILITY BUILDING
PROPOSED SUBSTATION
PROPOSED 12'H MASONRY WALL WITH BRICK FACE
ADJACENT PROPERTY OWNERS: (ALL ADJACENT PROPERTIES ZONED R06, SINGLE FAMILY RESIDENTIAL UNLESS NOTED OTHERWISE)
Feller Finch
SPECIAL USE PERMIT
CITY OF TOLEDO WATER TREATMENT PLANT
CITY OF TOLEDO, LUCAS COUNTY, OHIO