LIMITED ENVIRONMENTAL REVIEW

For
Mahoning Valley Sanitary District
Trumbull County

Distribution System Valve Replacement
FS 391400-0007

Applicant: **Matthew J. Blair, Esq., President**
Board of Directors
Mahoning Valley Sanitary District
1181 Ohltown-McDonald Road
Mineral Ridge, OH 44440

Summary of Need

The Mahoning Valley Sanitary District (MVSD) is seeking funding from the Ohio EPA Water Supply Revolving Loan Account (WSRLA, the state revolving fund in Ohio for qualifying drinking water supply projects) to replace the valves in its distribution system and the internal sluice gates at the dam gate house.

MVSD owns and operates the Water Purification and Pumping Works, located at 1181 Ohltown-McDonald Road in Mineral Ridge, Trumbull County. The Purification and Pumping Works (herein, the plant) draws water from the Meander Reservoir, which is an impoundment of Meander Creek formed by the Mineral Ridge Dam. The plant treats the raw water by chemical softening. It is designed to treat 60 million gallons per day (MGD) and at present treats approximately 26 MGD. Treated water is pumped from the plant to Niles, Youngstown and McDonald, the member cities of the MVSD, through force mains that are owned and operated by MVSD. The member cities in turn distribute the water to their own customers and to other municipalities.

The plant, much of MVSD's distribution system, and the Mineral Ridge Dam were constructed from 1926 to 1928. Over the last two decades, MVSD has undertaken the modernization of various parts of its treatment and distribution system to increase overall efficiency, operability and reliability. This year part of the modernizing effort will involve replacing worn, outdated valves in the distribution mains that serve Niles and Youngstown and replacing the sluice gates and stop logs within the Mineral Ridge Dam which control the entry of raw water into the plant.

Valve Replacement: Niles is served by two 20-inch lines and one 24-inch line which extend north from the plant to Niles' distribution system. The Youngstown mains consist of two 36-inch mains and a 48-inch line which extend southeast from the plant to the Webb Road Pump Station. From the Webb Road Pump Station, the 36-inch force mains extend to the Distributing Reservoir near Dunlap Avenue. From the Distributing Reservoir two 42-inch feeder mains extend to Youngstown's water distribution system at West Avenue. This system is shown in the Project Location Map.

The distribution mains are equipped with valves ranging up to 48 inches in diameter to control the flow of water. The valves are original to the construction of the distribution mains. MVSD proposes to replace the valves at nine locations in Youngstown and Niles in and in unincorporated parts of Mahoning and Trumbull counties as shown on the Project Location Map.

Valves will be replaced at Belmont Avenue and Robbins Avenue in Niles (Site 1), Water Street and Franklin Alley in Niles (Site 2), Second Street and Main Street in Niles (Site 3), two locations near SR 46 and Salt Springs-Youngstown Road (Site 4), State Route 46 in Mineral Ridge (Site 5), Mulberry Run Road and Mahoning-Trumbull County Line Road (Site 6), Interstate 680 and Mahoning-Trumbull County Line Road (Site 7), North

West Avenue and Dennison Tod Avenue in Youngstown (Site 8), and North West Avenue and West Rayen Avenue in Youngstown (Site 9).

The valves are housed in concrete encasements and valve vaults below ground. The work will generally involve excavating and removing the valve vaults or concrete casings, installing new components, backfilling, and restoring the sites to their original conditions. In cases where the vaults are in good condition, the valves will be replaced within the vaults. All the work sites except 4, 5 and 7 are in roads or shoulders in urban areas. Both locations at Site 4 are off-road in vacant areas. Site 5 is within MVSD's aqueduct easement. Site 7 is at the Webb Road Pump Station.

Stop Log/Sluice Gate Replacement: Water from the reservoir enters the plant through two intake conduits which run from the interior of the Mineral Ridge Dam to the first treatment processes in the plant. At the plant end of the conduits are sluice gates which control the entry of water to treatment. At the dam end of the conduits are two cast iron sluice gates, one on each conduit, which serve as backups to the interior sluice gates; and two cast iron sluice gates in series which allow the emergency discharge of water from the reservoir. Also within the dam are spacers and one hundred and ninety wooden stop logs. These are used to set the depth in the reservoir from which water is drawn and to isolate the backup sluice gates for maintenance. Thirty removable trash racks screen debris from the incoming water.

The above mentioned components are set within concrete shafts that extend sixty feet down into the dam. The shafts are equipped with guides that allow the vertical movement of the sluice gates and allow the insertion of stop logs and spacers. A superstructure known as the gate house sits atop the dam and provides access to the shafts through metal hatches in the floor.

The sluice gates, stop logs, spacers and trash racks are original to the construction of the dam. Over the years the emergency release sluice gate and the backup sluice gates have not been used on a regular basis due to their age and condition. Consequently, they have seized up within the guides. The emergency release gate is stuck in the closed position and the backup sluice gates are operable only with difficulty. The wooden stop logs are soaked through and get jammed in the guides, making them difficult to work with. The trash racks are corroded.

The MVSD proposes to replace all the existing sluice gates, stop logs and trash racks with new stainless steel components. This will entail lifting the old components out of the shafts, bringing them out of the gatehouse and disposing of them. The new ones will be installed in their places, again bringing them in through the gatehouse. Concrete repairs will be done as needed, although the concrete seems to be in good condition.

Implementation

The combined as-bid cost to replace the sluice gates and distribution valve is $5,337,854. Of this amount, $2,300,000 will be paid for by a "principal forgiveness" loan

through the American Recovery and Reinvestment Act of 2009 (ARRA)[1]. MVSD does not need to repay ARRA principal. MVSD will borrow the rest, $3,037,854, from the Water Supply Revolving Loan Account in an interest-free loan payable over 20 years. This funding will save MVSD $5,057,620 in interest and principal payments over twenty years.

The WSRLA loan will be repaid from rates charged to the member cities. In turn, the member cities will recover the debt under their own rate structures. An estimated average water usage of 1,038 cubic feet per month generates an annual bill of $250 in Niles (which is 0.7 percent of Niles' census MHI of $35,615), $302 in Youngstown (1.2 percent of Youngstown's MHI of $24,201), and $228 in McDonald (0.54 percent of McDonald's MHI of $41,738).

Public Participation and Governmental Oversight

No specific public participation is considered necessary for these projects. The sluice gate/stop log replacement will be done within the dam and will have no external effects. The valve replacement will involve small areas in pavement, road shoulders, and vacant utility easements. They will not directly affect residents or businesses except for occasional traffic routing around work areas. This Limited Environmental Review (LER) will be posted on MVSD's website. Public comment to the LER may be addressed to the contact person listed at the end of the document.

The following agencies have commented on the project:

Ohio Historic Preservation Office
Ohio Department of Natural Resources – Divisions of Natural Areas and Preserves, Wildlife, and Dam Safety
Ohio EPA – Divisions of Drinking and Ground Water and Environmental and Financial Assistance

Conclusion

The proposed project constitutes a general project type (replacement of stationary equipment) that qualifies for a Limited Environmental Review (LER). Specifically, it meets the following criteria:

It will have no significant environmental effect, nor will it affect any special resource type. The sluice gate/stop log replacement within the Mineral Ridge Dam will involve no natural features. Of all the valve replacement work sites in the distribution system, only Sites 4 and 5 are in unpaved or off-shoulder areas. The design does not call for tree removal at either site, so endangered species such as the Indiana bat, which depend upon a specific type of wooded habitat for propagation, will not be affected. Site 5 is situated in Wadsworth silt loams, zero to six percent slopes. These are not listed as

[1] Principal forgiveness functions essentially as a grant, although, technically, it is a loan in which no interest is charged, and the principal is "forgiven" (i.e., it is not repaid).

hydric soils. Both work locations of Site 4 are in Ellsworth silt loam two to twelve percent slopes. These are not listed as hydric soils. One of the work areas in Site 4 involves the replacement of a blowoff valve in a 20-inch force main which runs parallel to a dirt drive. The replacement of this valve will also involve the replacement of a corrugated metal pipe which runs under the dirt drive. The pipe will be excavated and lifted away to allow contractors to reach the valve. A new RCP will be installed the same place. Ohio EPA has determined that because the pipe replacement is maintenance activity for an existing utility, it meets the criteria for a non-notification Nationwide Permit Number 3.

The Ohio Department of Natural Resources Division of Wildlife indicates that the project areas are within the ranges of the Indiana bat (federally endangered species), the bald eagle (state threatened species), the clubshell mussel (state and federally endangered species), the eastern massassauga (state endangered and federal candidate species), the snuffbox mussel, the mountain brook lamprey (fish), the black bear, the bobcat, the trumpeter swan, the yellow-bellied sapsucker (bird), and the northern harrier (bird) (all state endangered). ODNR is being consulted for an updated status on bald eagle activity in the project areas. If nests are noted within ½ mile of any of the work areas, DOW will be consulted for advice on how to minimize disturbance. The project as designed will not affect the other listed species due to lack of suitable habitat, mobility and the type of work proposed.

The Ohio Historic Preservation Office (OHPO) has made a determination that the valve replacement work will affect no cultural resources. The plant is eligible for listing on the National Register of Historic Places. Although it is not known whether the Mineral Ridge Dam is also eligible, the dam and its gate house were treated as such in the environmental review because of their association with the plant. The Ohio Historic Preservation Office has determined that limiting the work to stationary equipment replacement within the shafts will not affect the integrity of the facility as a historic property.

It will not require extensive general or specific impact mitigation. The work within Mineral Ridge Dam has no erosive potential. What little erosive potential there is in the distribution valve replacements can be controlled using catch basin protections in the streets and silt fence and strict work limits around the valve vaults that are in the vacant areas.

It is clearly cost-effective. The feasible alternative is to do nothing. This would leave the plant with no backup for the internal sluice gates. The stop logs will only become less operable over time, and MVSD requires the flexibility to adjust intake elevations.

It is noncontroversial. The rates charged by the member cities are affordable. The work is limited in physical scope and has no components, such as neighborhood disruption or damage to special environmental features, which could generate controversy.

It does not involve a new or relocated discharge to surface or ground water, involve any increase in the volume of discharge or the loading of pollutants from and existing source or new facilities, or provide capacity to serve a design population substantially (thirty percent) greater than the current design population. The distribution system valves and pipes will remain at their current permitted capacities. The sluice gate/stop log replacement is not associated with an increase in plant capacity. In fact, the plant currently operates at less than half of its permitted capacity.

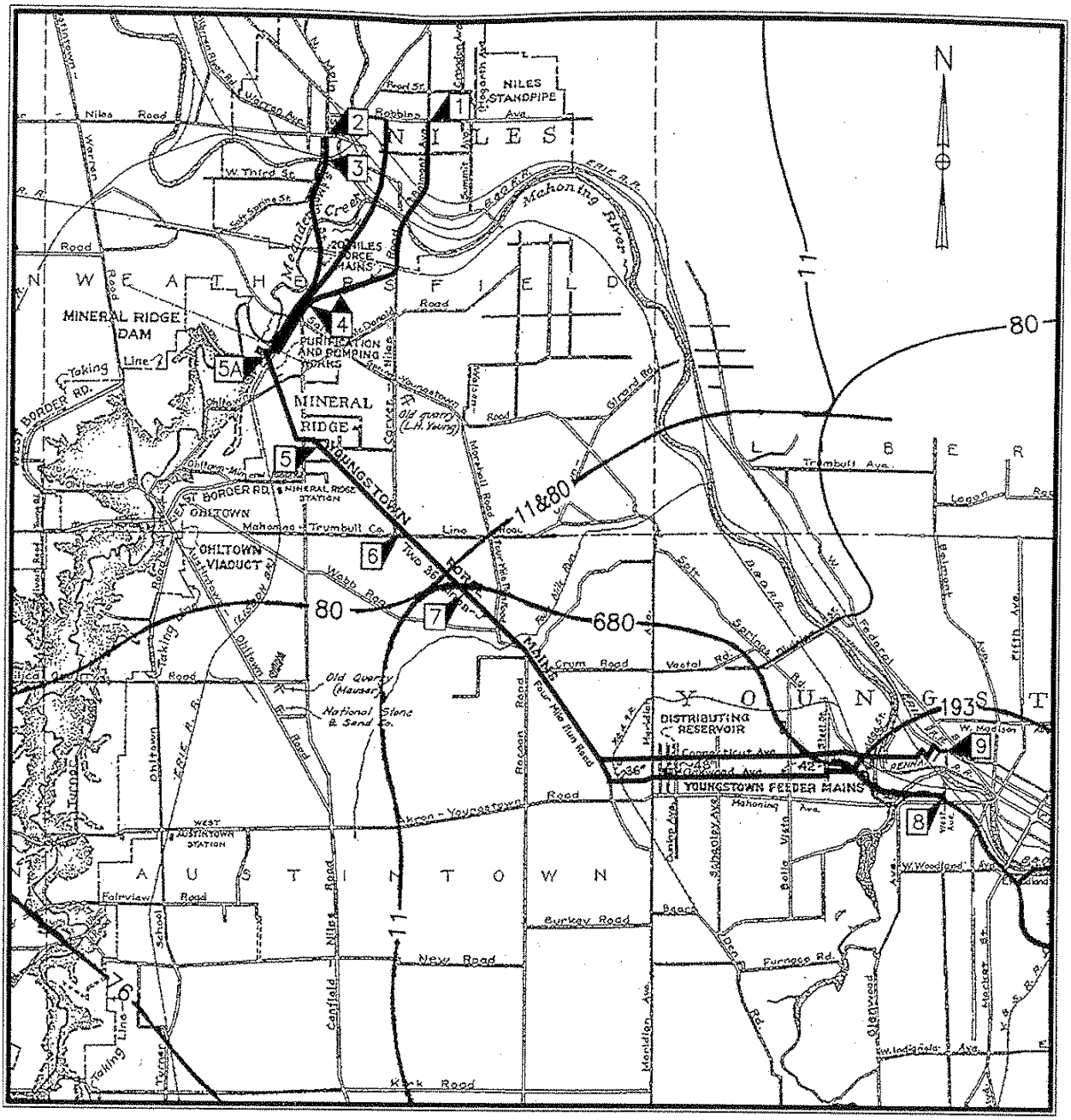
In addition, Executive Order 12898, "Federal Action to Address Environmental Justice in Minority Populations," requires proposed federal actions to identify, address and avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations. Due to a lack of environmental impacts and due to the short duration of the project, no particular segment of the community will face additional adverse impacts or be deprived of environmental benefits, compared to any other segment. Based on the scope of the project, no significant adverse impacts with respect to minority or low-income populations will occur due to the project.

The planning activities for the proposed project have identified no potentially significant adverse impacts. Specifically, the action is expected to have no significant short or long-term adverse impacts on the quality of the human environment or on sensitive resources such as: floodplains; wetlands; riparian areas; prime or unique agricultural lands; aquifer recharge zones; archaeologically or historically significant sites; or threatened or endangered species. The proposed project will improve the overall reliability of water service.

For further information, please contact:

Judy Buckinger, Project Planner
Ohio EPA - Division of Environmental and Financial Assistance
50 West Town Street, Suite 700
Columbus, OH 43215

Telephone: (614)-644-3662
Email: Judith.buckinger@epa.state.oh.us



PROJECT LOCATION MAP