Draft Environmental Assessment

Mineral Ridge Dam Rehabilitation

Trumbull County, OH

November 2022

Prepared by

Mahoning Valley Sanitary District
1181 Ohltown-McDonald Road
Mineral Ridge, OH 44440

Gannett Fleming, Inc.
207 Senate Avenue
Camp Hill, PA 17011

Prepared for

FEMA Region 5
536 South Clark Street, Sixth Floor
Chicago, IL 60605
Disaster #DR-4507-OH, Project # 4507.31-R

List of Acronyms and Abbreviations

ACB	Articulated concrete block
APE	Area of Potential Effect
ARC	Appalachian Region Commission
ATSDR	Agency for Toxic Substance and Disease Registry
BCC	USFWS Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
BMP(s)	Best Management Practice(s)
CAA	Clean Air Act
CBRS	Coastal Barrier Resources System
CDBG	Community Development Block Grant
CDC	Center for Disease Control
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
C.F.R.	Code of Federal Regulations
CO	Carbon monoxide
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DHS	U.S. Department of Homeland Security
DOW	ODNR Division of Wildlife
DSW	Division of Surface Water
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
HMGP	Hazard Mitigation Grant Program
IPaC	Information for Planning and Consultation
LOD	Limits of Disturbance
MBTA	Migratory Bird Treaty Act
MVSD	Mahoning Valley Sanitary District
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLCD	National Land Cover Dataset
NO2	Nitrogen dioxide
NOx	Nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resource and Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NWP	Nationwide Permit
O3	Ground-level ozone
Ohio Rev. Code	Ohio Revised Code
ODGS	ODNR Division of Geological Survey
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
OEMA	Ohio Emergency Management Agency
OEPA	Ohio Environmental Protection Agency
OSHA	Occupational Safety and Health Administration
Pb	Lead
PFM	Potential failure mode
PM	Particulate matter
PWS	Professional Wetland Scientist
RCC	Roller-compacted concrete
RCRA	Resource Conservation Recovery Act
SHPO	Ohio State Historic Preservation Office
SO2	Sulfur Dioxide
SVI	Social Vulnerability Index
SWPPP	Stormwater Pollution Prevention Plan
TIMS	Transportation Information Mapping System
TMDL	Total Maximum Daily Load
TRI	Toxic Release Inventory
TRP	Technical Review Panel
TSCA	Toxic Substance Control Act
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	Volatile Organic Compound
WQC	Water Quality Certification
WWH	Warmwater habitat

Table of Contents

Appendices

List of Figures

List of Tables

1 BACKGROUND

1.1 Project Authority

The Mahoning Valley Sanitary District (MVSD) proposes the rehabilitation of Mineral Ridge Dam and its spillways in Trumbull County, OH, to address deficiencies in safety criteria and potential failure modes of the water supply dam. MVSD applied to the Federal Emergency Agency (FEMA) through the Ohio Emergency Management Agency (OEMA) for grant assistance under the Hazard Mitigation Grant Program (HMGP). The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5170c. The key purpose of FEMA's Hazard Mitigation Grant Program is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. The Mineral Ridge Dam Rehabilitation project reviewed herein is related to Federal disaster declaration DR-4507-OH, Covid-19 Pandemic beginning January 20, 2020, and continuing. The disaster was declared on March 31, 2020, and designated the entire state as eligible for public assistance. The declaration was later amended to make HMGP assistance available statewide to fund hazard mitigation measures.

This environmental assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §§4321 - 4370h; President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [C.F.R.] Parts 1500 to 1508); U.S. Department of Homeland Security (DHS) Directive No. 023-01, rev. 1, *Implementation of the National Environmental Policy Act* (Oct. 31, 2014); DHS Instruction Manual No. 023-01-001-01, rev. 1, *Implementation of the National Environmental Policy Act* (Nov. 6, 2014); FEMA Directive No. 108-01, *Environmental Planning and Historic Preservation Responsibilities and Program Requirements* (Oct. 10, 2018); and FEMA Instruction 108-01-1, *Instruction on Implementation of the Environmental and Historic Preservation Responsibilities and Program Requirements* (Oct. 10, 2018).

The purpose of this EA is to meet FEMA's responsibilities under NEPA and to analyze the potential environmental impacts of the proposed project. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement (EIS) for the proposed action or to issue a Finding of No Significant Impact (FONSI).

In accordance with federal laws and FEMA regulations, the EA process for a proposed federal action must include an evaluation of alternatives and a discussion of the potential environmental impacts. As part of this NEPA review, the requirements of executive orders and other environmental laws are addressed.

1.2 Project Location

The proposed action is located at Mineral Ridge Dam, (41.153333, -80.779167) within Weathersfield Township, Trumbull County, Ohio. Meander Creek is impounded by the Mineral Ridge Dam to form the Meander Creek Reservoir which is managed and operated by the MVSD. **Figure 1.1** shows the

vicinity of Mineral Ridge Dam in relation to Meander Creek Reservoir, and **Figure 1.2** depicts the proposed action site location within Weathersfield Township and Trumbull County.

The project area consists of Mineral Ridge Dam, its principal spillway, auxiliary spillways, and associated infrastructure. The dam's earth embankment is 3,480 feet long. The principal spillway consists of a 260-foot-long concrete ogee spillway, and the twin auxiliary concrete-lined spillways are both 375-feet long. A masonry gate house is located at the east abutment of the principal spillway and houses the controls for the inflatable rubber dam located on the crest of the spillway. The concrete encased 84-inch raw water conduit exits to the east side of the gate house and continues to the MVSD water treatment plant immediately downstream.

The source of water supply for MVSD's 60 million gallon per day capacity water treatment plant comes from the existing Meander Creek Reservoir. The reservoir is seven miles long, covers 2,010 acres with 40 miles of shoreline, and has a capacity of 11 billion gallons.

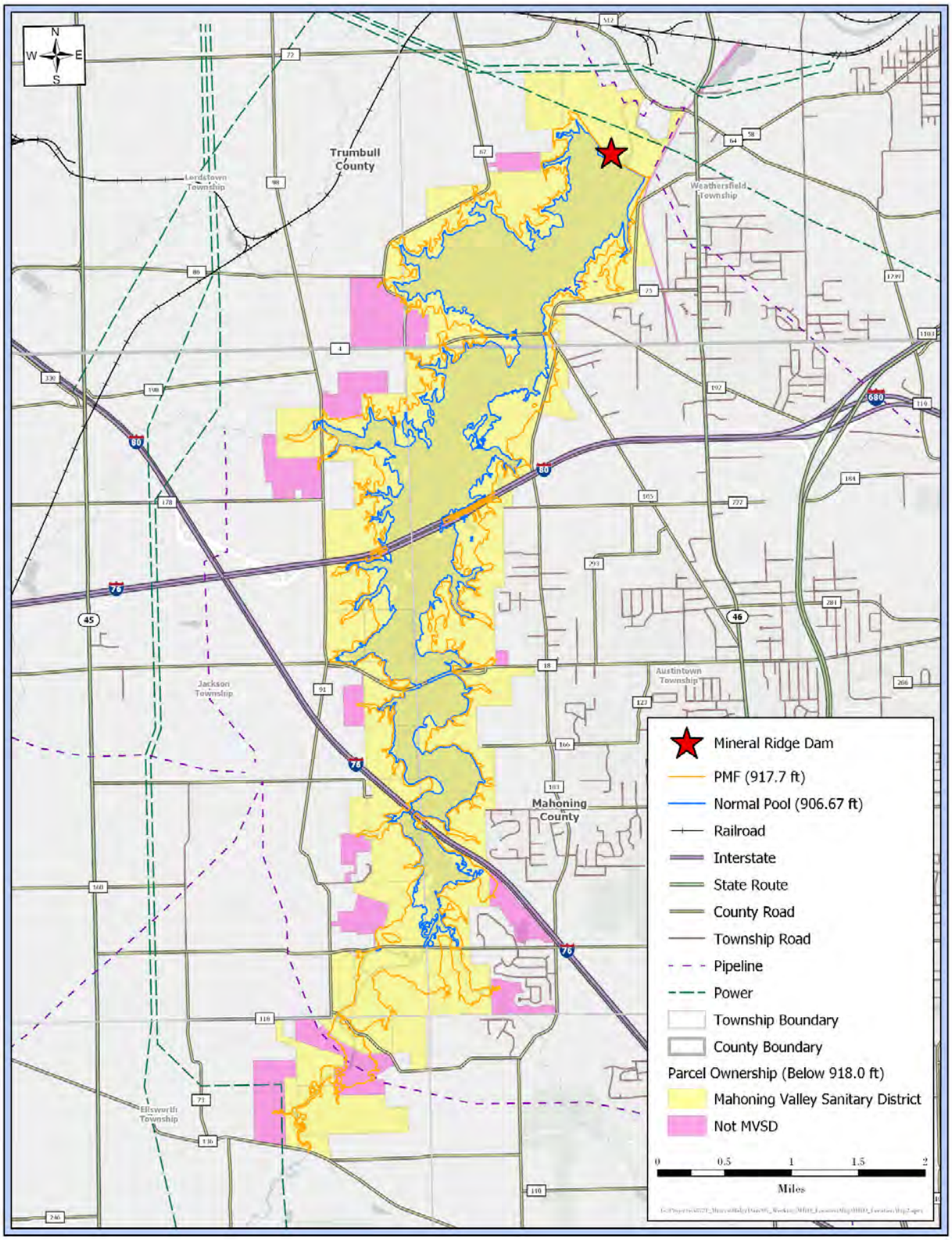


Figure 1.1 Vicinity Map of Mineral Ridge Dam and Meander Creek Reservoir

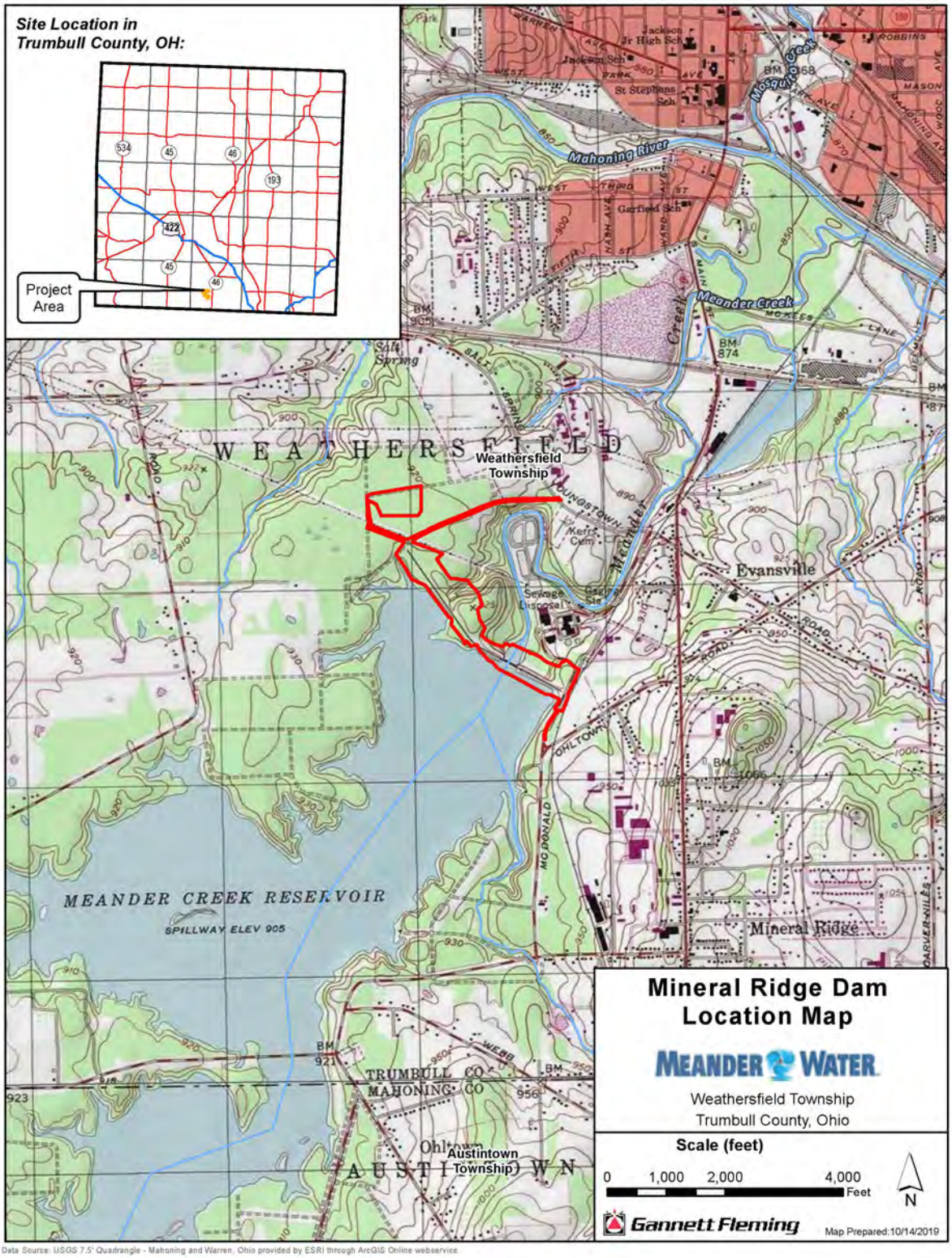


Figure 1.2 Site Location

1.3 Purpose and Need

The purpose of the proposed action is to maintain the public health and safety of Mineral Ridge Dam's downstream area and to continue providing a safe and reliable drinking water supply source to MVSD's community customers.

MVSD is a political subdivision recognized by the State of Ohio under Ohio Revised Code (Ohio Rev. Code) 6115 as a not-for-profit government water supply district. MVSD utilizes the Meander Creek Reservoir, Mineral Ridge Dam, and their downstream water treatment plant to furnish water to two member cities of Youngstown and Niles, and to the Village of McDonald as agent of these member cities. These entities then supply water to the surrounding metropolitan area including Girard, Canfield, Mineral Ridge, the Village of Lordstown, Craig Beach, and portions of ten townships in Trumbull and Mahoning Counties. The population served is approximately 220,000 people. There is currently no alternative drinking water supply system available, therefore, maintaining the current system is critical.

Mineral Ridge Dam is classified as a Class I structure by the Ohio Department of Natural Resources (ODNR). This high-hazard classification indicates that a failure of the dam would result in the probable loss of human life. Construction of the 90-year-old dam was completed in 1932, and major modifications and repairs were made to the dam in 1995.

In 2014, MVSD requested that Gannett Fleming, Inc. (Gannett Fleming) perform a comprehensive assessment of the dam to determine if it meets current dam safety design requirements, and to develop needed repairs. As reported in the Preliminary Analysis and Evaluation Report (March 2016, **Appendix E: Supporting Documentation**), Gannett Fleming inspected Mineral Ridge Dam and its appurtenances, reviewed associated documentation, and prepared detailed studies and analyses to evaluate the dam for potential failure modes. Gannett Fleming's assessment of the dam identified deficiencies related to deterioration of the structure over time, deficiencies related to more conservative dam design criteria, increased hydraulic and seismic loads relative to when the dam was designed, and deficiencies related to potential failure modes not previously identified.

Rehabilitation of the Mineral Ridge Dam is needed to address potential failure modes identified at the dam, bring the facility into compliance with current ODNR and federal dam safety criteria, and address necessary upgrades and repairs. If the dam were to fail, nearly 110,000 persons in the downstream inundation area would be at risk of flood hazards including Environmental Justice (EJ) communities (as defined in **Section 3.5.6**) who would be disproportionately impacted in the event of a dam breach. Similarly, economic damages to downstream structures and infrastructure would be extensive, and disaster relief efforts would be complicated by the number of communities simultaneously affected. Furthermore, Meander Creek Reservoir impounded by Mineral Ridge Dam is the sole drinking water supply source for MVSD's approximate 220,000 community customers. By rehabilitating the dam, the Proposed Action will also prevent future losses of water supply to the population MVSD serves. If the dam were to fail, these communities would lose access to their current source of potable water supply for an indeterminate amount of time.

2 ALTERNATIVE ANALYSIS

NEPA requires FEMA to evaluate alternatives to the proposed project and describe the environmental impacts of each alternative. NEPA also requires an evaluation of the No Action alternative, which is the future condition without the project. This section describes the No Action alternative, the Proposed Action, and alternatives considered but eliminated from further consideration.

2.1 Methodology

A potential failures modes (PFMs) analysis for Mineral Ridge Dam was performed by Gannett Fleming (**Appendix E: Supporting Documentation**), which identified PFMs for the structure under existing conditions, assessed factors that contribute to the credibility of each PFM, and identified remediation features to address the PFMs. As a result of the PFM analysis and subsequent investigations, it was determined that multiple features at the dam do not meet current dam safety criteria to continue providing a safe and reliable water supply source and maintain the safety of the downstream population. Additionally, the existing structure does not meet the requirements of the state dam safety regulator, ODNR Division of Water Resources.

Five major PFMs were identified at the high hazard potential Mineral Ridge Dam by Gannett Fleming in 2016:

1. Principal Spillway - Failure by sliding at the bottom of the concrete cutoff during extreme events due to low rock strength, ineffective foundation drains, and relatively flat bedrock bedding;

2. Existing Twin Auxiliary/Emergency Spillways - Failure by surface erosion and breaching due to high velocities in the vegetated and riprapped portions of the discharge channel;

3. Dam Embankment - Failure by uncontrolled seepage and internal erosion due to the absence of an internal drainage system, high pore pressures measured in downstream embankment, and dispersive soils identified during testing;

4. Top of Dam – Failure by seepage, surface erosion and downstream slope instability due to a seepage window between the concrete curb at top of dam and concrete core wall, and the absence of an internal drainage system in the embankment; and

5. Inadequate Spillway Capacity (Marginal) – Failure by overtopping and surface erosion of the earth embankment due to inadequate spillway capacity during the Probable Maximum Flood and a low area present at the east abutment.

The above PFMs along with other dam safety deficiencies and remediation solutions developed by Gannett Fleming were reviewed by an Independent Technical Review Panel (TRP) convened by the MVSD in 2017 (**Appendix E: Supporting Documentation**). The TRP concluded that major and permanent remedial efforts would be required to bring dam components into compliance with contemporary standards.

Alternatives analyses were performed during conceptual-level investigations to develop and screen rehabilitation alternatives for Mineral Ridge Dam. A total of nine conceptual dam modification alternatives were initially developed to address the known PFMs and bring the dam into compliance with current dam safety standards. Based on discussions with MVSD, two of the nine alternatives were eliminated as they were not considered feasible from a water supply standpoint due to the significant lowering of pool level that would be required during construction and/or during flood events. The remaining seven alternatives shared common rehabilitation features, including: maintaining the normal pool level; increasing the top of dam; stabilizing the principal spillway; flattening the downstream embankment; rehabilitating two access roads, redirecting surface runoff, and repairs to the gate house. A comparison of the seven feasible alternatives and their varying key features was performed to determine a preferred alternative in consideration of project cost, schedule, and meeting project purpose and need. The preferred alternative is described herein as the Proposed Action.

2.2 Alternative 1 – No Action

The No Action Alternative is used as a baseline for comparison to estimate the benefits and impacts presented in the Proposed Action Alternative. Under the No Action Alternative, the existing Mineral Ridge Dam would not be modified and would remain in its current state. Considering the dam safety deficiencies identified at the dam, this alternative would result in an unacceptable risk to public health and safety of the downstream population and reliability of the water supply storage for MVSD's member cities of Youngstown, Niles, and the Village of McDonald. If the dam were to fail, there would be a loss of water supply service to MVSD's approximate 220,000 community customers, potential for loss of life due to flood risks, and potential physical damage to downstream communities and critical infrastructure.

2.3 Alternative 2 – Proposed Action

The proposed action consists of the implementation of a dam rehabilitation project to address dam safety deficiencies identified at Mineral Ridge Dam, bring the facility into compliance with current ODNR and federal dam safety criteria, and address needed upgrades and repairs (**Figure 2.1**). The major components of the dam rehabilitation project are listed below. Additional plan views of the existing and proposed damsite are provided in **Appendix E**: **Supporting Documentation**.

- Abandon the existing twin auxiliary spillways and replace with a new roller-compacted concrete (RCC) auxiliary spillway, grass-lined channel, and riprap lined channel.
- Extend the existing embankment concrete core wall up to Elevation 918.0 feet, which is approximately 0.3 feet above the computed Probable Maximum Flood spillway design flood peak reservoir level, and modify the top of dam roadway.
- Flatten the downstream embankment slope from 2.0 Horizontal to 1.0 Vertical (2H:1V) to between 2.5H:1V and 3H:1V to improve stability, and install internal filter drains to safely collect and convey potential seepage.

- Modify and repair the principal (or primary) spillway, including raising and buttressing the existing training walls with new reinforced concrete walls to accommodate the flattened embankment slopes, lining the ogee surface and stilling basin with a new reinforced concrete liner slab, installing rock anchors in the stilling basin slab to improve stability and concrete surface repairs.
- Install post-tensioned anchors into the dam's foundation to improve the stability of the principal spillway concrete ogee structure and the gate house structure.
- Replace the existing inflatable rubber dam and controls at the principal spillway.
- Replace the stairway on the east embankment slope.
- Remove the existing spoil pile to improve surface drainage adjacent to the downstream toe of the east embankment slope.
- Upgrade dam-related instrumentation, electrical and lighting systems on the gatehouse and road.
- Improve the existing east and west access roads leading to the dam.
- Re-grade the low area at the east abutment of the dam to eliminate the area of overtopping during the Probable Maximum Flood.
- Install temporary erosion and sediment controls, diversion of water and excavation dewatering features to facilitate rehabilitation construction.

The fixed crest elevation of the ogee spillway, the fully inflated crest elevation and the auto deflation elevation of the replacement inflatable rubber dam, the crest elevation of the ungated auxiliary spillway, the peak 100-year reservoir level and 100-year outflow, and the peak Probable Maximum Flood reservoir level would be unchanged from existing conditions under the proposed alternative.

Value engineering and independent peer review was performed during the design process to minimize construction costs, verify constructability, and minimize impacts to environmental and cultural resources.

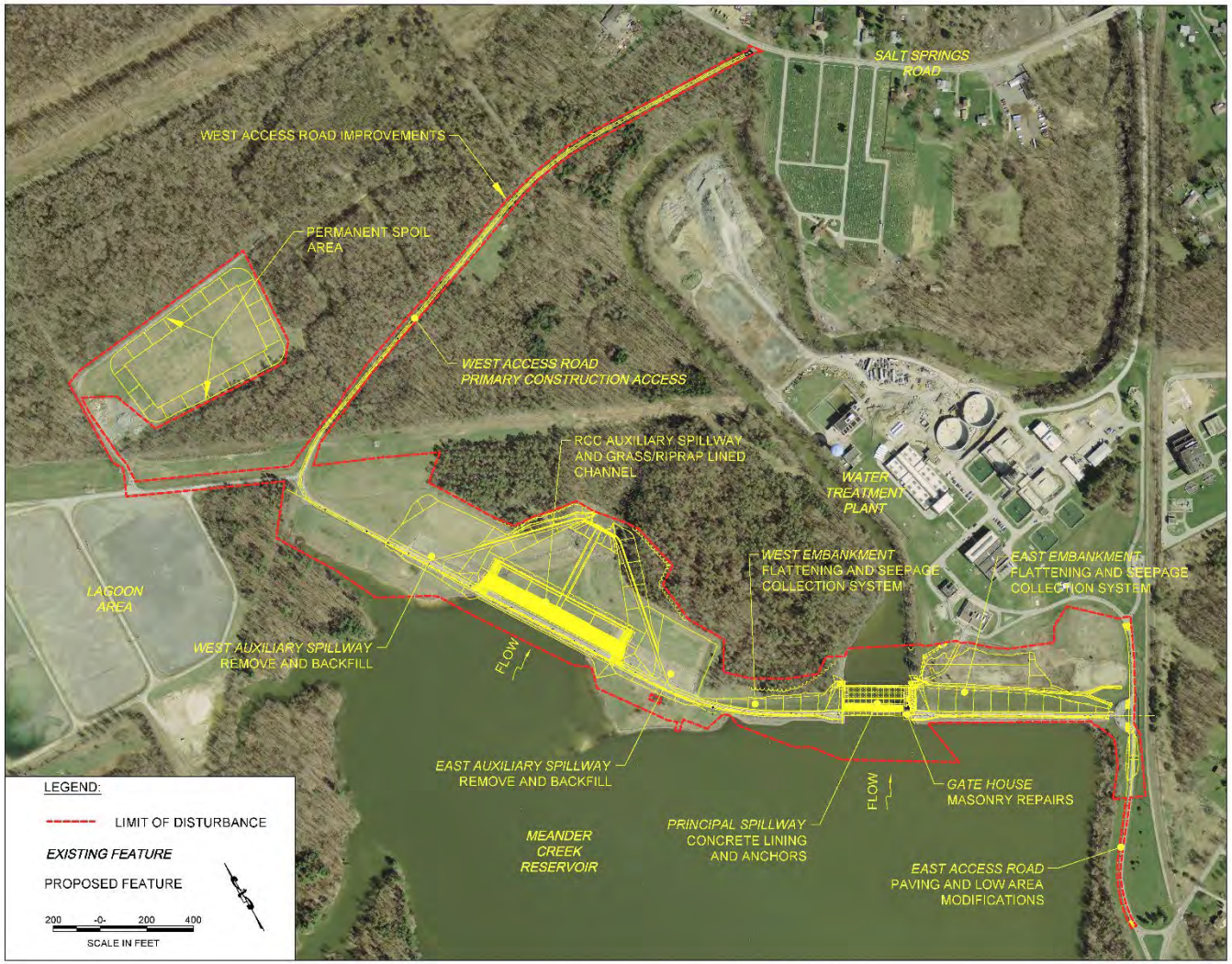


Figure 2.1 Mineral Ridge Dam Existing and Proposed Features

2.4 Alternatives Considered and Eliminated from Further Consideration

As described in **Section 2.1**, the seven alternatives analyzed shared several common features. This resulted in similar overall environmental impacts at Mineral Ridge Dam, since these impacts are in project areas that require rehabilitation and modification to improve the safety and reliability of the dam. Due to their similarities, alternatives were further considered and eliminated based on key variations to the principal spillway and new auxiliary spillway. The overall least cost alternative for the project included replacing the existing bladder on the existing principal spillway crest and not changing the fixed crest elevation or the normal pool elevation.

2.4.1 Principal Spillway Alternatives Not Selected

Principal spillway alternatives that were considered but not selected included lowering the fixed crest elevation and eliminating the inflatable rubber bladder and raising the fixed crest elevation.

In addition to increasing overall dam modification alternative cost, removal of the inflatable rubber bladder and permanently raising the crest was not selected because it would result in raising of the normal pool and need for a larger auxiliary spillway structure.

Lowering of the fixed principal spillway crest and installation of large gates at the principal spillway was considered in an effort to eliminate the need for an auxiliary spillway. This principal alternative was eliminated due to the potential for loss of significant water supply storage during gate activation and did not offer a reduction in overall dam modification alternative cost.

2.4.2 New Auxiliary Spillway Alternatives

Each of the auxiliary spillway alternatives that were considered included a downstream RCC drop structure. Seven of the auxiliary spillway alternatives included removal of the existing twin auxiliary spillways and two included modifying the existing auxiliary spillways to augment the discharge capacity of the new auxiliary spillway. Modifying the existing twin auxiliary spillways was eliminated due to seepage, uplift, and erosion concerns that were identified during the PFM analysis of the existing structure, and which could not be addressed or corrected in a cost-effective manner.

Three alternatives that included a new labyrinth-type conventional concrete spillway with articulated concrete block (ACB) armored downstream channels were considered but not selected due to higher overall construction costs relative to the selected alternative. The higher construction costs were primarily associated with foundation constraints and relatively large amount of conventional concrete required for construction of the labyrinth.

One alternative that included replacing the existing twin auxiliary spillways with new twin conventional concrete broad-crested weir spillways with an ACB-armored downstream channel

was considered but not selected due to higher overall construction costs relative to the selected alternative.

Three alternatives included a new, stepped RCC control structure. The RCC control structure was determined as the most feasible alternative due to overall construction cost and elimination of foundation concerns. The RCC control structure was optimized during design to consist of a conventional concrete ogee-crested weir with an RCC chute, training walls, and stilling basin, and downstream riprap apron. The stilling basin invert elevation was lowered to eliminate the downstream steep channel slope and to allow for energy dissipation to occur in the stilling basin prior to entering the grass-lined/riprap-lined channel. Lowering of the stilling basin resulted in elimination of a downstream RCC drop structure.

2.4.3 Dam Decommissioning

Decommissioning (removal) of the dam was not considered to be a technically feasible alternative. Removal of the dam would result in permanent draining of the reservoir, which would eliminate the hazard to downstream population. However, this alternative would also result in the permanent loss of critical water supply storage benefitting downstream communities and the loss of potential flood protection benefits.

2.5 Cost Effectiveness of the Preferred Alternative

The decision-making process under NEPA allows for consideration of economic factors including a benefit cost analysis. To demonstrate that a project is cost effective, project sponsors prepare a benefit cost analysis (BCA) in accordance with standard procedures. The BCA is prepared separately from FEMA's Environmental/Historic Preservation (EHP) Compliance but is a component of any NEPA analysis.

In a BCA, the future benefits of a mitigation project are determined and compared to the project costs. The outcome of a BCA is a benefit-cost ratio (BCR). A project is considered cost effective when the BCR is 1.0 or greater, meaning that the net benefits exceed the costs.

MVSD completed a BCA for the proposed project in 2021 using FEMA's BCA Toolkit (Version 6.0). The BCA report will be included in any project application materials submitted for the project and summarized below.

2.5.1 Benefits

Quantified benefits for the proposed project were based on the avoidance of future damages from a potential breach of Mineral Ridge Dam and the resulting loss of service of potable water supply from Meander Creek Reservoir, as operated by MVSD, to a population of approximately 220,000. Other benefits, consisting of life loss risk reduction and avoidance of physical damage to downstream communities, are described qualitatively.

To estimate loss of service damages, a Damage Frequency Assessment (DFA) was conducted. DFA establishes a relationship between how often natural hazard events occur and how much damage and losses occur as a result of the events. GPD Group Engineers developed an estimate of cumulative risk at the dam based upon the age of the dam and the PFMs due to documented structural conditions. Using the cumulative risk estimate, the time until total failure of the Mineral Ridge Dam was projected to be 25 years. Therefore, a breach of Mineral Ridge Dam was assumed to occur 25 years into the future from the analysis year of 2021.

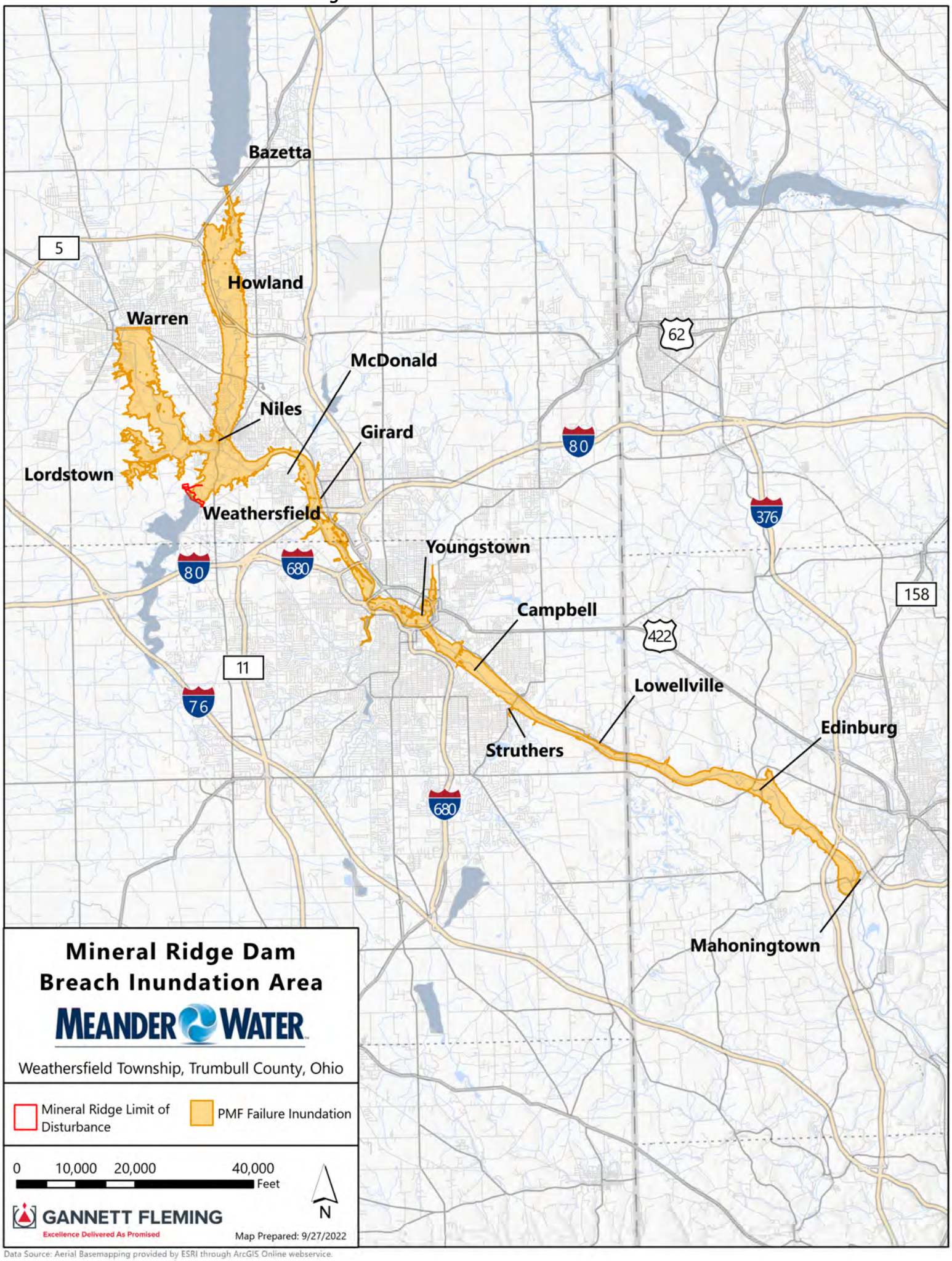
2.5.2 Breach Inundation Area

The breach inundation area for Mineral Ridge Dam, a total of 15,176 acres downstream, is shown in **Figure 2.2**. The inundation area was originally delineated in the *Dam Breach Analysis and Inundation Report for Mineral Ridge Dam*, completed by Gannett Fleming in 2011. According to the 2011 report, the peak flow due to the failure of Mineral Ridge Dam would travel quickly downstream to the confluence of Meander Creek with Mahoning River. The high energy of the flood wave and the flat topology of the area would cause the flood wave to push upstream as well as downstream of the confluence. The flood wave would continue a significant distance up both the Mahoning River and Mosquito Creek, before gradually decreasing in magnitude.

Due to the large extent of the breach inundation area, communities that might require evacuation by local authorities or might be subject to flooding include:

- Weathersfield, OH
- Niles, OH
- McDonald, OH
- Girard, OH
- Youngstown, OH
- Campbell, OH
- Struthers, OH
- Lordstown, OH
- Warren, OH
- Howland, OH
- Bazetta, OH
- Lowellville, OH
- Edinburg, PA
- Mahoningtown, PA

Figure 2.2 Dam Breach Inundation Area



2.5.3 Life Loss and Economic Damage Risk Reduction

The cumulative population of communities in the breach inundation area is 109,513 persons, based on census tracts that fall within the inundation boundaries (Census Bureau 2020). The potential for life loss in a flood event is based on flood depths, velocities, warning time, and the population at risk's potential for evacuation. Due to its large storage capacity and downstream hazard potential, ODNR has classified Mineral Ridge Dam as a Class I (High Hazard) structure. While life loss damages were not quantified as part of the BCA, the proposed project's reduction of life loss risk to these downstream communities, including Environmental Justice (EJ) communities, represents a significant benefit of the project.

Similarly, economic damages to downstream structures and infrastructure would be extensive. The number of communities simultaneously affected in the region would complicate disaster relief efforts and likely result in delays in rebuilding and restoring critical infrastructure. Flooding from the dam failure would also result in interruptions to school and business activities, transportation delays and detours, a lack of emergency access routes or delayed response times, and temporary displacement of flood affected residents. By implementing the proposed project, a considerable benefit is created for the affected communities by reducing the risk of physical damages to downstream structures and infrastructure and the associated social cost of flooding.

2.5.4 Loss of Service for Potable Water Supply

As described in Chapter 1, the Meander Creek Reservoir is the sole drinking water supply source for MVSD's approximately 220,000 community customers. A dam breach that drains the reservoir would result in the loss of this water supply.

In the BCA, the duration of impact of a dam failure breach on potable water supply was expected to persist for two years. This functional downtime estimate was based on an assumption of one year for re-construction of the reservoir and a second year for dam filling. Documentation was provided demonstrating that when the dam was originally constructed, it took one year for the dam to fill to normal pool. FEMA standard values were used to estimate the daily water supply benefit to customers (in 2021 dollars per person per day).

MVSD's 60 million gallon per day capacity water treatment plant is located immediately downstream of the dam. During a dam breach, it is assumed that the treatment plant would be destroyed by flood water and would need to be rebuilt. While the rebuilding cost was not included in the BCA, it would represent another substantial barrier to reestablishing potable water supply in the future.

2.5.5 Costs and BCR

FEMA BCA guidance requires that all anticipated project costs be included in the BCA, including, as relevant:

- Construction costs

- Maintenance costs over the project life
- Environmental remediation or historic property treatment measures
- Survey permitting, demolition and relocation costs
- Site preparation/maintenance/assessment costs
- Legal costs and material disposal
- Other acquisition costs

The cost estimate for the preferred alternative is based on the original estimated mid-point of project construction, which in the year 2021 was estimated as January 2024. It is anticipated that the project construction start will not occur at the time estimated in 2021, therefore opening the project to potentially higher costs based on inflation and increases to material costs. The cost represents a planning level estimate and will be refined during the design phase if the preferred alternative is selected for implementation.

The Project Useful Life (PUL) is expected to be 100 years. The PUL establishes the timeframe to calculate benefits to compare against the cost. Benefits and costs were annualized within the BCA Toolkit using a discount rate of 7% set by the US Office of Management and Budget.

The BCA demonstrated that the BCR for the project is overwhelmingly positive, indicating that the net benefits of the proposed project greatly exceed the project costs.

3 AFFECTED ENVIRONMENT AND CONSEQUENCES

This chapter identifies the project study area's natural and human environment that may be affected by project alternatives and evaluates potential impacts to each. Both quantitative and qualitative information are included to provide a holistic understanding of potential impacts. Potential impacts are qualitatively based on the criteria listed in **Table 3.1**.

While the term "project study area" encompasses the Proposed Action's limits of disturbance (LOD) as depicted in **Figure 2.1**, consideration was also given to the project's greater vicinity and downstream areas to provide further context within certain resource analyses. If the study area for a particular resource category is different from the project study area, the differences will be described in the appropriate subsection.

Table 3.1 Evaluation Criteria for Potential Impacts

Impact Scale	Criteria
None/Negligible	The resource area would not be affected, or changes or benefits would be either nondetectable or, if detected would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable.
Minor	Changes to the resource would be measurable, although the changes would be small and localized. Impacts or benefits would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects.

Moderate	Changes to the resource would be measurable and have either localized or regional scale impacts. Impacts would be within or below regulatory standards, but historical conditions would be altered on a temporary basis. Mitigation measures would be necessary, and the measures would reduce any potential adverse effects
Major/Significant	Changes would be readily measurable and would have substantial consequences on a local or regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, but long-term changes to the resource would be expected.
Temporary	Impacts that do not cause a permanent alteration of the physical, chemical, or biological properties of the resource. Temporary impacts include activities in which the previous functions and values of the resource are restored.
Permanent	Activities in which the previous function and/or value of the resource is not restored. Mitigation measures would be implemented to the extent feasible.

3.1 Preliminary Screening of Assessment Categories

Based on a preliminary screening of resources and the Proposed Action's geographic location, the following resources do not require a detailed assessment.

- *Coastal Barrier Resources System (CBRS).* The Coastal Barrier Resources Act, 16 U.S.C. §§ 3501-3510, is not applicable because the project is not within or near a CBRS unit (U.S. Fish and Wildlife Service [USFWS], 2019). Note, the full citations to reference documents are listed in **Section 7.2** of this Environmental Assessment, identifying source documents by author or agency, and year. The above parenthetical reference is to a resource document of the USFWS, published in 2019.
- *Coastal Zone Management.* The Coastal Zone Management Act (CZMA), 16 U.S.C. §§ 1451-1467, is not applicable because the project is not near a coast.
- *Prime and Unique Farmland:* Prime and unique farmlands are protected under the Farmland Protection Policy Act (FPPA) (7 C.F.R. Part 658, 7 U.S.C. §§ 4201-4209). The FPPA applies to prime and unique farmlands and those that are of state and local importance. Pursuant to 7 C.F.R. Part 659, ''farmland'' does not include land already in or committed to urban development or water storage. The FPPA is not applicable because the project is located within land used for water storage purposes, per consultation with the Natural Resource Conservation Service.
- *Seismic Risks*. Executive Order (EO) 13717 Establishing a Federal Earthquake Risk Management Standard does not apply because there is a low seismic risk in the project study area based on 2018 long-term seismic hazard maps developed by the U.S. Geological Survey (USGS, 2018).

- *Sole Source Aquifers.* There are no sole-source aquifers regulated by the Safe Drinking Water Act of 1974, 42 U.S.C. §§ 300f et seq., in the vicinity of the project study area (EPA, 2019).

3.2 Physical Environment

3.2.1 Geology, Soils, and Topography

Affected Environment

Bedrock geology was identified using the Ohio Department of Natural Resources (ODNR) Division of Geological Survey Bedrock Geologic Map of Ohio (ODGS, 2006) and the Ohio Geology Interactive Map (ODGS, 2022). The project study area is underlain by bedrock of the Mississippian age (about 322 to 359 million years ago), specifically the Cuyahoga Formation (Mc). The Cuyahoga Formation is comprised primarily of shale with interbedded sandstone and siltstone. This formation typically varies in thickness ranging from 0 to 180 feet and is gray to brown in color. Faults are rare in Cuyahoga rocks and generally have displacements of less than 1 meter. No known faults are located beneath the dam site (Gannett Fleming, 2021).

The surficial geology at Mineral Ridge Dam consists of Wisconsin-age glacial drift deposits (ODGS, 2006). The glacial drift sediments are composed of an unsorted mixture of clay, silt, sand, gravel, and boulders that were deposited by ice and melt water. According to the Ohio Geology Interactive Map (ODGS, 2022), surficial geology layers within the project study area include:

- Till – made up of a variable mix of silt, clay, sand, gravel, and boulders
- Sand and Gravel – Intermixed sand and gravel with thin layers of silt, clay, and till dispersed throughout
- Complexly Interbedded Deposits of Clay, Silt, Sand, Gravel – this layer may also include till in deeper, buried deposits
- Sandstone and Shale – bedrock layer comprised of interbedded shale, siltstone, and sandstone

Soils within the project study area were identified and analyzed utilizing the U.S. Department of Agriculture (USDA) Natural Resource and Conservation Service (NRCS) Web Soil Survey (NRCS, 2019). The proposed project study area is underlain by the following soil units found in the **Table 3.2** below. The data were collected for Trumbull County, Ohio for the Meander Creek Reservoir's project study area. A Soils Summary of the project study area is provided as **Figure 3.1**.

Table 3.2 Soils Summary

Map Unit Symbol	Map Unit Name	Hydric Rating
CnB	Chili loam, 2 to 6 percent slopes	No, 0% Hydric
EhC2	Ellsworth silt loam, 6 to 12 percent slopes, eroded	No, 0% Hydric

MgA	Mahoning silt loam, 0 to 2 percent slopes	Yes, 10% hydric inclusions
MgB	Mahoning silt loam, 2 to 6 percent slopes	Yes, 5% hydric inclusions

There are no soils listed as "hydric" found within the project study area. Soils listed as having "hydric inclusions" include the Mahoning silt loam (MgA, MgB). The remainder of the soil units are listed as non-hydric in nature.

Another of the features of soils is their suitability for farming. The purpose of the Farmland Protection Policy Act of 1981, 7 U.S.C. §§ 4201 et seq., is to minimize the extent that federal programs contribute to the unnecessary and irreversible conversion of prime and important farmland to non-agricultural uses. The conversion of prime or unique farmland must be considered whenever Federal funding or time is used in the direct or indirect conversion of prime farmland unless an exemption exists. Land committed to urban use or used for water storage is exempt from the FPPA.

Topography of the project study area was evaluated utilizing U.S. Geologic Survey (USGS) Topographic Map 7.5' Quadrangles, Mahoning and Warren, Ohio. Elevation across the project study area ranges between 870 and 925 feet above mean sea level. Mapping depicts one perennial stream within the proposed project study area, Meander Creek, flowing through the Meander Creek Reservoir and through the project study area.

Alternative 1 – No Action

Under the No Action alternative, construction would not occur and no impacts to geology, soils, or topography would occur. If dam failure were to occur, it is possible that soils, topography, or geological resources downstream of the site could be drastically altered.

Alternative 2 – Proposed Action

The Proposed Action will require excavation, grading, and ground disturbance to rehabilitate the spillway structures, properly grade the dam embankments, and improve access roads to the site. The LOD encompasses approximately 55 acres.

According to the Final Design Report (**Appendix E: Supporting Documentation**) bedrock within the excavation limits would likely be impacted by the Proposed Action (Gannett Fleming, 2021). Bedrock may need to be stripped with large excavators or dozers in accordance with the Final Design Report. Depth and composition of the bedrock varies within the excavation zone and is referred to as "Unclassified Excavation" in the specifications and drawings without distinguishing between soil and rock materials. Portions of the training wall, wingwall, and footings will be founded on bedrock.

Soils within the LOD will also be disturbed through earthwork associated with this project. Excavation and grading will lead to impacts to soils within the LOD. Best Management Practices (BMPs) would be implemented to minimize impacts related to erosion and sedimentation. Upon

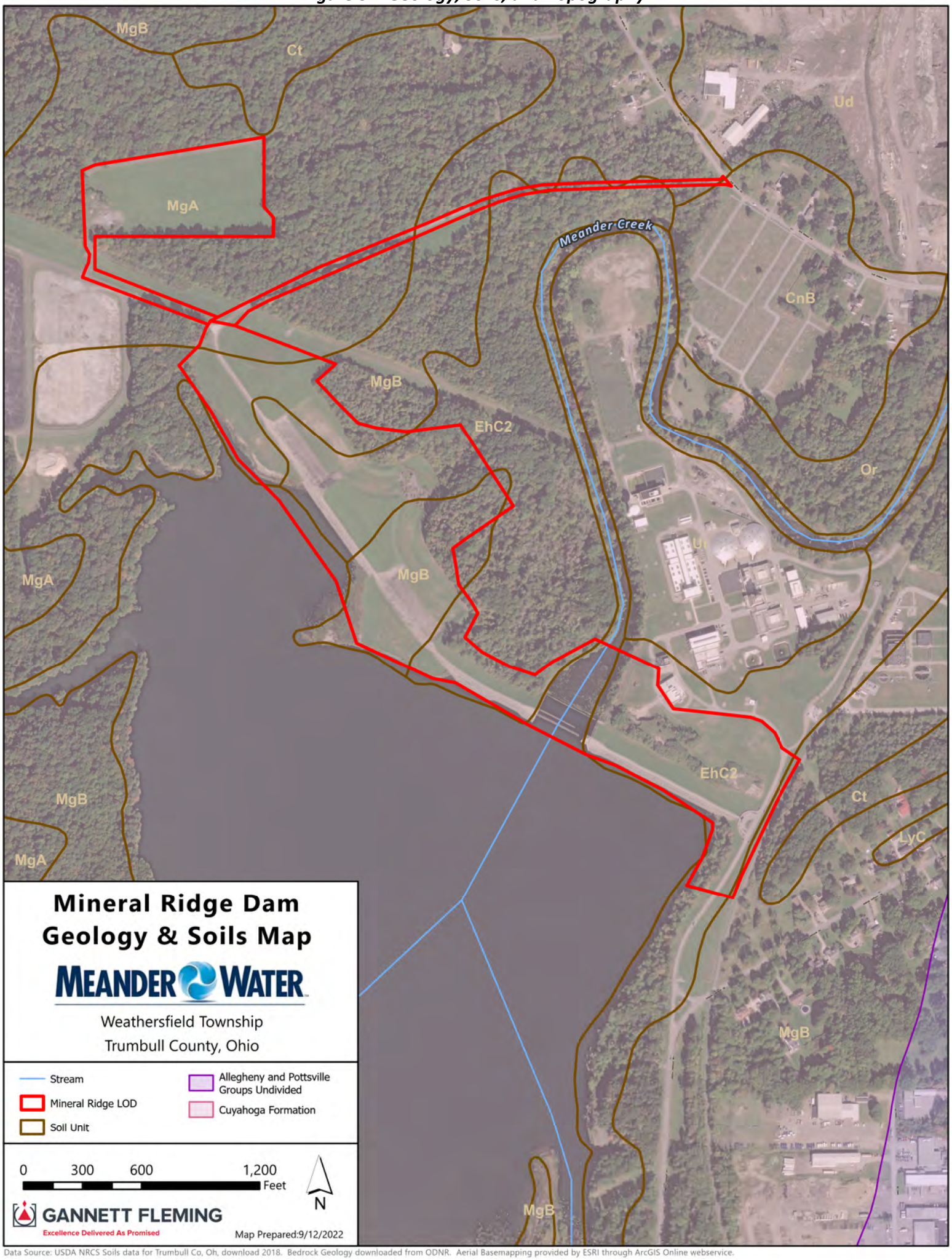
final grading, soils will be permanently stabilized and revegetated in accordance with the Stormwater Pollution Prevention Plan (SWPPP).

According to the Final Design Report, the construction specification for earth fill includes requirements for the soil and aggregate types anticipated during construction (Gannett Fleming, 2021). The contractor will be responsible for obtaining borrow material from on-site and commercial off-site sources as necessary to complete the work in accordance with the project specifications. Potential on-site borrow sources include the required excavation for the auxiliary spillway and other excavations required to complete the dam modifications. The contract documents include requirements for excavation and spoiling of the existing spoil pile material located downstream of the east embankment.

The Proposed Action also includes minor, permanent impacts to topography. Project plans call for flattening of the downstream embankment slope from 2.0 Horizontal to 1.0 Vertical (2H:1V) to between 2.5H:1V and 3H:1V to improve stability. This would minimally alter topography in the project study area but create a more stable slope downstream of the Meander Creek Reservoir. As such, these impacts are anticipated to be beneficial in nature.

The FPPA states that land committed to water storage is exempt from the regulations of the act. NRCS also responded to a scoping request on August 31, 2022, noting that “land used for water storage is not subject to the FPPA” and did not express any further concerns.

Figure 3.1 Geology, Soils, and Topography



Data Source: USDA NRCS Soils data for Trumbull Co, Oh, download 2018. Bedrock Geology downloaded from ODNR. Aerial Basemapping provided by ESRI through ArcGIS Online webservice.

3.2.2 Water Resources and Water Quality

Water resources include surface water, groundwater, stormwater, and drinking water (wetlands are evaluated in **Section 3.3.2**). The Clean Water Act (CWA) of 1977, 33 U.S.C. §§ 1251 et seq., regulates the discharge of pollutants (including fill material) into water, with various sections falling under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA). Section 404 of the CWA establishes the USACE permit requirements for discharging dredged or fill materials into waters of the United States and traditional navigable waterways. The USACE regulation of activities within navigable waters is also authorized under the Rivers and Harbors Act of 1899, 33 U.S.C. §§ 403 et seq., ch. 425 (Mar. 2, 1988, 20 Stat. 1151. Under the National Pollution Discharge Elimination System (NPDES), the EPA regulates both point and nonpoint pollutant sources, including stormwater and stormwater runoff. Activities in waters of the state are also regulated under Ohio law (Chapter 6111 of the Ohio Rev. Code).

Affected Environment

The Meander Creek Reservoir and Meander Creek are located within the project study area, and portions are within the project's LOD (**Figure 2.1**). Meander Creek is a tributary to the Mahoning River located within Mahoning and Trumbull Counties. Meander Creek and the Mahoning River are part of the Ohio River watershed. Meander Creek is impounded by the Mineral Ridge Dam to form the Meander Creek Reservoir. The Meander Creek Reservoir is approximately 7 miles long and spans 2,010 acres. The Meander Creek Reservoir provides safe drinking water to a population of approximately 220,000 individuals in its two member cities of Youngstown and Niles, and to the Village of McDonald as agent of these member cities.

Due to the potential for impacts to wetlands and waterways associated with the project, a wetland and waterways delineation was carried out by Gannett Fleming. The primary site investigation activities for the Mineral Ridge Dam Rehabilitation were conducted on September 10 - 12, 2018, by Jillian Arnold, Professional Wetland Scientist (PWS), and Corey Myers. Eleven (11) stream segments were delineated in the designated area of investigation. A wetland and waterways map is provided as **Figure 3.2.**

The Ohio Environmental Protection Agency (OEPA) manages the list of Impaired Waters pursuant to Section 303(d) of the CWA and Total Maximum Daily Load (TMDL) list. Lower Meander Creek is listed as Category 1: Unimpaired by the "2022 Integrated Water Quality Monitoring and Assessment Report" prepared by the OEPA, Division of Surface Water (OEPA DSW, 2022). Upper Meander Creek and Middle Meander Creek are both listed as "Not Meeting Criteria" for *E. coli* and are listed as "high" TMDL priority ranking.

According to the Ohio Geology Interactive Map, groundwater underlaying the project study area is contained within sand and gravel as well as interbedded sandstone and shale (ODGS, 2022). Groundwater contained within the sand and gravel aquifer is approximately 30 to 50 feet deep. Groundwater contained within the interbedded sandstone and shale aquifer is approximately 15 to 30 feet deep. Net recharge within the project study area is 4 to 7 inches per year. According to

the Groundwater Vulnerability Index Map of Ohio, the project study area has groundwater vulnerability indices ranging from 114 to 125; these numbers indicate a relatively low vulnerability to groundwater contamination based upon its hydrogeologic, topographic, and soil media characteristics (Nelson et al., 2022). The Groundwater Vulnerability Index takes into account depth to water, net recharge, aquifer media, soil media, topography, vadose zone media, and hydraulic conductivity.

No water wells are shown within the project study area on the Ohio Geology Interactive Map (ODGS, 2022). There are several water wells for domestic use located outside of the LOD in residential areas surrounding the project.

Alternative 1 – No Action

Under the No Action alternative, rehabilitation of the existing dam would not take place and there would be no impacts to water resources or water quality associated with construction. If dam failure were to occur, water resources downstream of the site would experience temporary and permanent impacts as a result of extreme high flows, erosion, and sedimentation; access to potable water supply would be lost to MVSD's approximate 220,000 community customers.

Alternative 2 – Proposed Action

Rehabilitation of Mineral Ridge Dam and associated construction activities would result in temporary and permanent impacts to wetlands and waterways. Impacts have been minimized to the greatest extent feasible while accomplishing project purpose and need.

A pre-construction notification was sent to USACE on February 4, 2022, regarding the proposed project. The dam rehabilitation project proposes to impact one (1) littoral area (Meander Creek Reservoir), five (5) wetlands, and one (1) perennial stream. On March 22, 2022, USACE authorized temporary stream impacts of 0.923 acre, permanent littoral impacts of 0.446 acre, temporary littoral impacts of 0.673 acre to Meander Creek Reservoir, and additional permanent and temporary impacts to wetlands (discussed in **Section 3.3.2**) concurrent with Nationwide Permit (NWP) No. 3, Maintenance (Permit No.: LRP 2019-783). The Section 401 Water Quality Certification (WQC) was issued by the USACE as part of the NWP. The project was also verified to comply with all applicable regional conditions. Additional considerations and mitigation for wetland impacts are discussed within **Section 3.3.2**.

Due to the potential for erosion and sedimentation associated with construction activities, a NPDES Construction Site Stormwater General Permit was applied for from OEPA. On May 10, 2022, OEPA sent a letter of approval for the permit (Ohio EPA Facility Permit Number: 3GC13145*AG) to MVSD. Additionally, a SWPPP was prepared and submitted to the Trumbull County Soil and Water Conservation District for their review. The SWPPP was approved on May 19, 2022 and assigned permit number REC22001-WE.

The contractor will be required to follow all mitigation measures and BMPs included in the SWPPP to minimize impacts to water resources and water quality. Vehicle fueling and maintenance practices are to be done at an offsite facility. If fueling and maintenance must occur at the project

site, the contractor will provide secondary containment, drip pans, and spill kits. Vehicle washing is to be done at an offsite facility. The contractor is also responsible for reducing the chance of spills onsite. In the event of a spill, the contractor must stop the source of spill, contain the spill, and clean up and dispose of contaminated materials.

For dewatering and discharge activities, the contractor shall have pumping equipment and filtering devices onsite and in working order. The following are allowable non-stormwater discharges: uncontaminated ground water or spring water; foundation or footing drains where flows are not contaminated with process materials such as solvents; and uncontaminated excavation dewatering. Based on the proposed work and BMPs described, impacts to groundwater are expected to be negligible or nonexistent as a result of the project.

Temporary and minor impacts to water resources and water quality may occur as a result of runoff from construction. However, through the implementation of BMPs identified within the SWPPP and NPDES permit, these impacts will be minimized to the greatest extent feasible.

Figure 3.2 Wetlands and Waterways in Project Vicinity

Data Source: Aerial Basemapping provided by ESRI through ArcGIS Online webservice. Wetland and Stream Delineation completed by Gannett Fleming 2018.

3.2.3 Floodplain Management (Executive Order 11988)

EO 11988, Floodplain Management, requires federal agencies to minimize occupancy and modification of the floodplain. Specifically, EO 11988 prohibits federal agencies from funding construction in the 100-year floodplain unless there are no practicable alternatives. FEMA's regulations for complying with EO 11988 are promulgated in 44 C.F.R Part 9. A summary of the eight-step decision-making process is provided in **Appendix E: Supporting Documentation**.

Affected Environment

The project study area is located within four different Flood Insurance Rate Map (FIRM) panels: 39155C0391D, effective on 06/18/2010; 39155C0392D, effective on 06/18/2010; 39155C0393D, effective on 06/18/2010; and 39155C0394D, effective on 06/18/2010 (FEMA, 2022). The project study area contains Zone A and Zone AE (1% Annual Chance Flood Hazard or 100-year floodplain) and Zone X (0.2% Annual Chance Flood Hazard or 500-year floodplain) associated with the Meander Creek Reservoir, Meander Creek, and the auxiliary spillway from the Meander Creek Reservoir (**Figure 3.3**).

Alternative 1 – No Action

Under the No Action alternative, there would be no dam rehabilitation or construction and no modification of the floodplain. No impacts to the floodplain would be anticipated under the No Action Alternative. If dam failure were to occur, floodplains downstream of the Mineral Ridge Dam would experience drastic changes as a result of extremely high flows (discharge and velocities), erosion, and sedimentation.

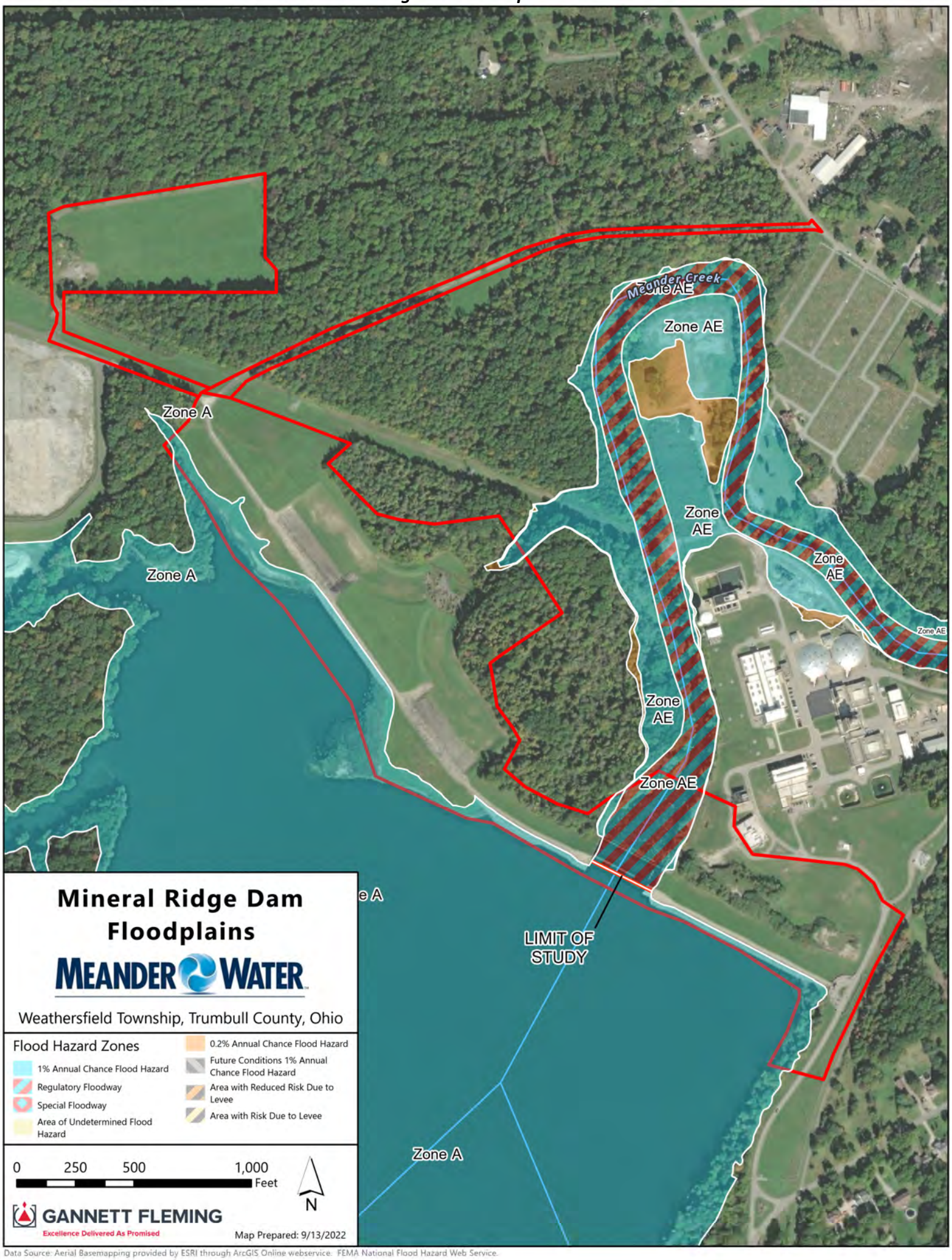
Alternative 2 – Proposed Action

The proposed project would involve construction within flood-hazard areas as described above. Impacts to floodplains would be temporary and minor, associated with construction activities. Construction of the proposed project would not result in an increase in flood elevations or flood levels with the surrounding community during project operation.

On December 15, 2021, the Trumbull County Planning Commission met with MVSD and Gannett Fleming to discuss the proposed project. On February 9, 2022, Gannett Fleming submitted a Flood Hazard Area Development Permit Application, a No-Rise Certification, and Hydrologic and Hydraulic Modeling and Report including engineering and design documents for the proposed rehabilitation of Mineral Ridge Dam. As the Proposed Action is currently designed, the project does not increase flood levels within the surrounding community during the occurrence of the base flood discharge and the project satisfies the no-rise condition. On March 28, 2022, the Trumbull County Planning Commission issued a Flood Hazard Area Development Permit (Permit Number: WEA-22-01) for the proposed project (**Appendix E: Supporting Documentation**).

Based on this information, there would be no permanent impacts to floodplains associated with the project. BMPs described within the SWPPP would minimize temporary impacts to floodplains to the greatest extent feasible. As such, impacts to floodplains would be minor as a result of the Proposed Action.

Figure 3.3 Floodplains



3.2.4 Air Quality

The Clean Air Act (CAA), 42 U.S.C. §§ 7401 *et seq.*, requires the EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The CAA established two types of national air quality standards. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. Current criteria pollutants are carbon monoxide (CO), nitrogen dioxide (NO_2), ground-level ozone (O_3), lead (Pb), particulate matter (PM), and sulfur dioxide (SO_2).

Federally funded actions in nonattainment and maintenance areas are subject to EPA conformity regulations, 40 C.F.R. Parts 51 and 93. The air conformity analysis process ensures that emissions of air pollutants from planned federally funded activities would not affect the state's ability to achieve the CAA goal of meeting the NAAQS. Section 176(c) of the CAA requires that federally funded projects must not cause any violations of the NAAQS, increase the frequency or severity of NAAQS violations, or delay timely attainment of the NAAQS or any interim milestone. Activities that would cause emissions to exceed the NAAQS or cause an area to fall out of attainment status would be considered a significant impact. The emissions from construction activities are subject to air conformity review.

Under the general conformity regulations, a determination for federal actions is required for each criteria pollutant or precursor in nonattainment or maintenance areas where the action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at rates equal to or exceeding the prescribed *de minimis* rates for that pollutant. The prescribed annual rates are 50 tons of volatile organic compounds (VOCs) and 100 tons of nitrogen oxides (NO_X) (O_3 precursors) and 100 tons of $PM_{2.5}$, SO_2, or NO_X ($PM_{2.5}$ and precursors).

Affected Environment

An area is classified as nonattainment when it does not meet NAAQS standards. According to OEPA Air Pollution Control's listing of NAAQS-Attainment Status, Trumbull County is in attainment for all NAAQS criteria pollutants (OEPA APC, 2022).

Alternative 1 – No Action

Under the No Action Alternative, construction activities associated with the proposed dam rehabilitation would not occur. Trumbull County would remain in attainment for all NAAQS criteria pollutants. As such, there would be no impacts to air quality as a result of the No Action Alternative.

Action Alternative 2 – Proposed Action

The Proposed Action would have minor, temporary impacts on air quality due to the use of gasoline-powered and diesel-powered construction equipment. Additionally, construction activities could result in exposed soil leading to fugitive dust and particulate matter. Emissions and fugitive dust associated with construction would be localized and temporary in nature. In

accordance with the SWPPP, the contractor shall monitor and take precautions to control dust and other air pollutants including but not limited to using water or chemicals, limiting vehicles allowed on-site, minimizing the operating speed of vehicles, etc.

As such, impacts on air quality as a result of the Proposed Action would be temporary and minor. Permanent impacts to air quality are not anticipated as a result of the Proposed Action.

3.3 Biological Environment

3.3.1 Terrestrial and Aquatic Environment

Affected Environment

Terrestrial and aquatic environments include the native and invasive vegetation (invasive vegetation is discussed in Section 3.3.5), fish and wildlife, and their habitats that can be found in the project study area.

The project study area includes Meander Creek Reservoir, Meander Creek, the reservoir dam breast, riparian vegetated area along the reservoir and creek, forested and scrub-shrub tracts, mowed lawn areas, wetlands, access roads, and other disturbed areas associated with the dam and water treatment plant. MVSD has a contracted forester who oversees the management of the District's forest, timbering, and addressing invasive species.

According to MVSD, the Meander Creek Reservoir is approximately 2,010 acres and total lands they utilize include 5,500 acres enclosed by 35 miles of fence line. Hunting, fishing, and boating within the reservoir or these associated lands are prohibited; this provides an unofficial fish, bird, and wildlife refuge where public access is not permitted (MVSD, 2018). The reservoir is surrounded by forested land along the vast majority of its shoreline. Fish species within the reservoir include largemouth bass, walleye, channel catfish, various sunfish, and other warmwater lake fishes (Ohio Game Fishing, 2011).

The project study area is within the "City of Warren-Mahoning River" and "Lower Meander Creek" watersheds. The OEPA, Division of Surface Water, identifies Meander Creek downstream of the Meander Creek Reservoir as a warmwater habitat (WWH). Biota and habitat within Lower Meander Creek, downstream of the reservoir, is heavily influenced by Mineral Ridge Dam and the principal spillway. Fish species within the creek include pumpkinseed, yellow perch, gizzard shad, creek chub, northern pike, and walleye (Eastgate, 2016). The macroinvertebrate community consisted of amphipods, zebra mussels, midges, flatworms, blackflies, and hydropsychids (Eastgate, 2016). This community of macroinverterbrates is generally indicative of poor water quality, poor substrate (silt or mud), or some combination of the two. Additionally, various freshwater mussel species were identified during the mussel survey effort used to establish salvage and relocation protocol; for more detail, see **Appendix E: Supporting Documentation**.

Wetlands within and adjacent to the project study area occur primarily surrounding Meander Creek Reservoir, Meander Creek, tributaries to Meander Creek, and along the existing access road.

A few wetlands are formed in low lying areas collecting surface flow from mowed lawn fields or forested areas. Wetland and riparian areas ranged from emergent vegetation to forested habitats. Plant species identified in these habitats were documented during the 2018 wetlands and waterways investigation (**Appendix E: Supporting Documentation**). Tree species within wetland and riparian habitats include slippery elm, shagbark hickory, green ash, and black willow. Sapling and shrub species include northern spicebush, buttonbush, and saplings of the listed tree species. Herbaceous vegetation within wetlands and riparian areas includes Japanese stilt grass, fowl meadow grass, shallow sedge, soft rush, sensitive fern, jewelweed, rice cut grass, wingstem, field horsetail, arrow-leaf tearthumb, common boneset, Pennsylvania smartweed, reed canary grass, woolgrass, creeping jenny, clearweed, jumpseed, deer tongue grass, narrowleaf cattail, and purple loosestrife.

Upland areas contain forested, scrub-shrub, and meadow-like habitat. Plant species identified in these habitats were documented during the 2018 wetlands and waterways investigation. Upland tree species include Ohio buckeye, sugar maple, shagbark hickory, pine species, tulip poplar, black walnut, slippery elm, eastern hemlock, and northern red oak. Sapling and shrub species in upland habitats consisted of common barbery, multiflora rose, northern spicebush, raspberry species, wild privet, Tartarian honeysuckle, and saplings of the listed tree species. Common herbaceous species in upland areas include dewberry, interrupted fern, Christmas fern, red clover, white clover, ground ivy, Kentucky bluegrass, goldenrod species, thistle species, wild carrot, Virginia creeper, tall fescue, crown vetch, plantain species, common yarrow, and barnyard grass.

The project study area includes a variety of habitats that have the capability to support fish, macroinvertebrates including freshwater mussels, migratory birds, waterfowl, birds of prey, reptiles, amphibians, and mammals.

Alternative 1 – No Action

Under the No Action alternative, there would be no direct impacts to terrestrial or aquatic habitats. Construction would not occur and there would be no disturbances to these habitats or their supported communities of flora and fauna. In the event of dam failure, there is a potential that terrestrial or aquatic habitats downstream of Mineral Ridge Dam may be damaged or destroyed.

Alternative 2 – Proposed Action

The Proposed Action would cause minor temporary and permanent impacts to terrestrial habitats. Temporary impacts would occur as a result of construction, vegetation clearing, and soil disturbance. The Proposed Action would utilize BMPs to minimize disturbances and stabilize and revegetate disturbed areas upon completion. Permanent impacts to terrestrial habitats would occur as a result of tree clearing within the LOD. Per the USACE permit submittal and Final Design Report, the Proposed Action would require 2.278 acres of tree clearing. Clearing of woodland was minimized to only occur in areas where necessary as part of the construction. Orange construction fencing will be placed around protected trees throughout the LOD. Given the expansive forested

habitat associated with the Meander Creek Reservoir and MVSD property totaling 3,172 acres (MVSD, 2018), this impact would be an extremely minor loss of habitat.

The Proposed Action would also cause minor temporary and permanent impacts to aquatic habitats. As discussed in **Section 3.2.2 Water Resources and Water Quality** and **3.3.2 Wetlands**, there are temporary and permanent impacts to Meander Creek Reservoir, Meander Creek, tributaries to Meander Creek, and wetlands. BMPs and minimization measures outlined in the SWPPP and USACE permit would be implemented to reduce impacts to aquatic habitats to the greatest extent feasible.

3.3.2 Wetlands (Executive Order 11990)

EO 11990, Protection of Wetlands, requires federal agencies to take action to minimize the loss of wetlands. Activities that disturb jurisdictional wetlands require a permit from USACE under Section 404 of the CWA of 1977 (33 U.S.C. § 1344).

FEMA regulation 44 C.F.R. Part 9, *Floodplain Management and Protection of Wetlands*, sets forth the policy, procedures, and responsibilities to implement and enforce EO 11990. EO 11990 prohibits FEMA from funding activities in a wetland unless no practicable alternatives are available. Based on the requirements of 44 C.F.R. Part 9, a summary of the eight-step decision-making process to ensure compliance with EO 11990 is provided in **Appendix E: Supporting Documentation.** The NEPA compliance process requires federal agencies to consider direct and indirect impacts on wetlands which may result from federally funded actions.

Affected Environment

The National Wetlands Inventory (NWI) through the USFWS was reviewed to identify potential wetlands within or adjacent to the project study area (USFWS, 2022). NWI identified Meander Creek Reservoir as a lacustrine, limnetic, unconsolidated bottom, permanently flooded, diked/impounded (L1UBHh) feature. Meander Creek, downstream of the reservoir, is identified as a riverine, lower perennial, unconsolidated bottom, semi-permanently flooded (R2UBF) feature. There are no palustrine wetlands within the project study area identified on NWI mapping. There are several palustrine unconsolidated bottom wetlands classified as live-stock production (PUBGx), outlining the solid waste holding tanks for the MVSD. These features are southwest of the project study area. An NWI map is provided as **Figure 3.4.**

Due to the potential for impacts to wetlands and waterways associated with the project, a wetland and waterways delineation was carried out by Gannett Fleming on September 10-12, 2018, as discussed in **Section 3.2.2**. Fourteen (14) wetland areas and eleven (11) stream segments were delineated in the designated area of investigation. A wetland and waterways map is provided as **Figure 3.2.**

Alternative 1 – No Action

Under the No Action alternative, there would be no project-related impacts on the wetlands or waterways as construction would not occur and there would be no disturbance to these habitats.

Alternative 2 – Proposed Action

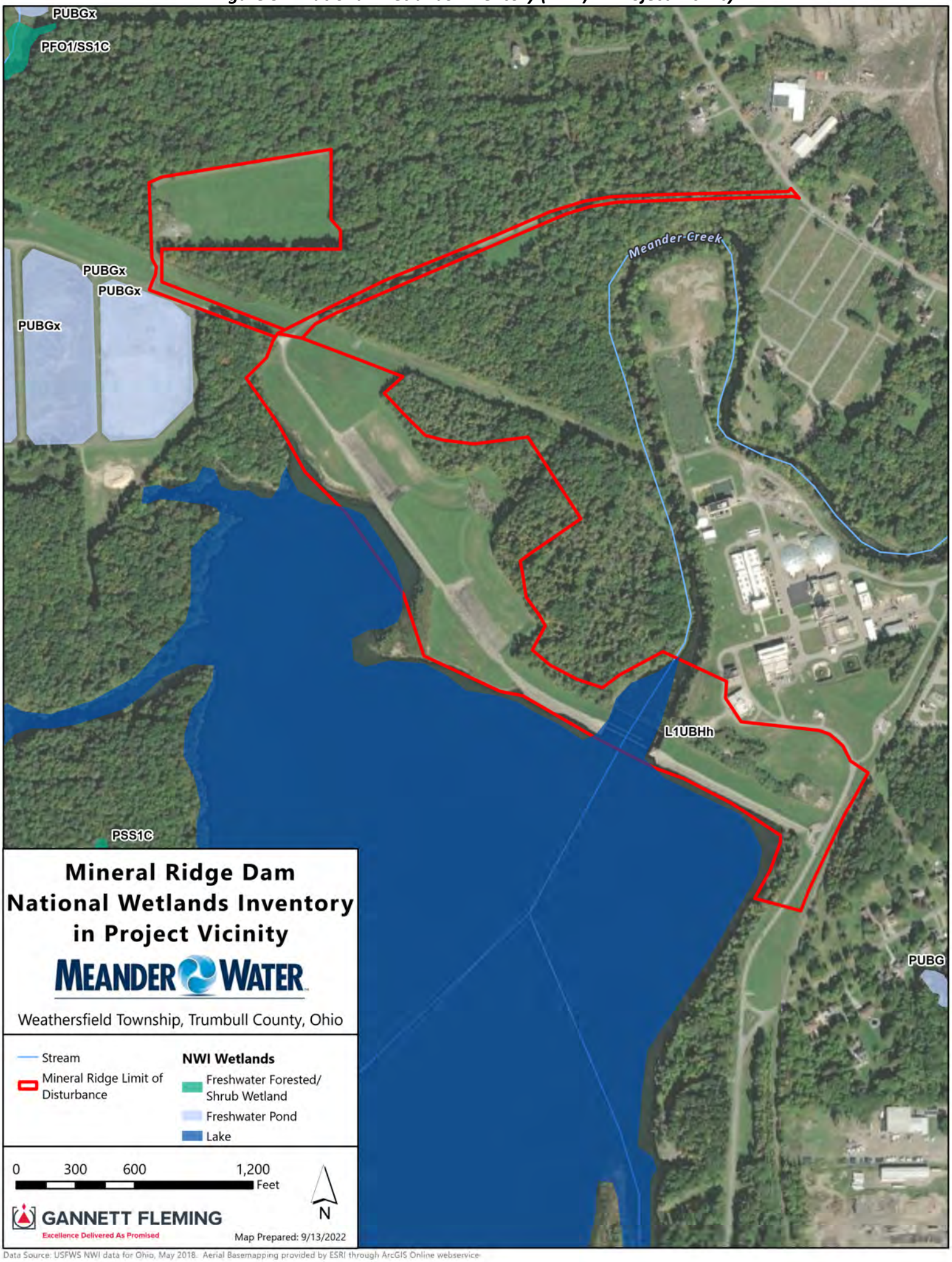
Rehabilitation of the dam and associated construction activities would result in temporary and permanent impacts to wetlands and waterways. Impacts have been minimized to the greatest extent feasible while accomplishing the project purpose and need.

A pre-construction notification was sent to USACE in February 2022, regarding the proposed project with impacts to one littoral area (Meander Creek Reservoir), five (5) wetlands, and one (1) perennial stream. On March 22, 2022, USACE authorized 0.398 acre of permanent impact to wetlands and 0.018 acre of temporary impacts to wetlands concurrent with Nationwide Permit (NWP) No. 3, Maintenance (Permit No.: LRP 2019-783). Additional impacts to water resources are discussed within **Section 3.2.2.** The project was also verified to comply with all applicable regional conditions.

On April 7, 2022, a confirmation letter was received from the Stream + Wetlands Foundation completing the purchase of 0.4 acres of non-forested wetlands mitigation credits from their Pittsburgh In-Lieu Fee Program. The confirmation letter was provided to the USACE in accordance with the permit requirement and is included in **Appendix E: Supporting Documentation**.

The Proposed Action would have moderate impacts to wetlands. Permanent impacts to wetlands have been mitigated at a 1:1 ratio within the watershed; the remainder of wetland impacts are temporary and minor. Littoral impacts are exceptionally minor in scale when compared to the size of Meander Creek Reservoir. Through BMPs and mitigation associated with the Proposed Action, impacts to wetlands are anticipated to be moderate.

Figure 3.4 National Wetlands Inventory (NWI) in Project Vicinity



Data Source: USFWS NWI data for Ohio, May 2018. Aerial Basemapping provided by ESRI through ArcGIS Online webservice

3.3.3 Threatened and Endangered Species

The Endangered Species Act (ESA) of 1973, 16 U.S.C. §§ 1531 - 1544, provides a framework for the conservation of endangered and threatened species and their habitats. Federal agencies are required to ensure that actions they fund, authorize, or carry out are not likely to jeopardize the continued existence of any listed species (including plant species) or result in the destruction or adverse modification of designated critical habitats for such species.

Affected Environment

In July and August 2019 and November 2021, coordination with the USFWS occurred regarding threatened and endangered species and critical habitats within the project study area. Additionally, an Official Species List was obtained through the USFWS Information for Planning and Consultation (IPaC) tool for the project from USFWS on July 26, 2022 (included within **Appendix A: Agency Consultation**). Based on this coordination, there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the project study area. The Official Species List identified the federally endangered Indiana bat (*Myotis sodalis*), the federally threatened northern long-eared bat (*Myotis septentrionalis*), and the federally threatened eastern massasauga rattlesnake (*Sistrurus catenatus*) as potentially present within the project area. Additionally, the monarch butterfly (*Danaus plexippus*) was identified as a candidate species that may occur within the project area.

USFWS noted that all projects within the State of Ohio are within the range of the Indiana bat and the northern long-eared bat. In Ohio, presence of these two species is assumed if suitable habitat is present unless a presence/absence survey has been conducted to document otherwise. If tree clearing is required for the proposed project and trees ≥3 inches diameter at breast height (dbh) cannot be avoided, USFWS recommended that removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing was recommended to avoid potential adverse effects to Indiana bats and northern long-eared bats.

The project is also within the range of the federally threatened eastern massasauga rattlesnake. USFWS documented that it is very unlikely that suitable habitat for the eastern massasauga exists within the project study area. As such, the eastern massasauga was removed for further consideration under the ESA.

Coordination with ODNR was completed in July of 2019 and updated in December of 2021, offering an interdisciplinary review within the department and recommendations for the project. The Ohio Natural Heritage database identified tower mustard (*Turritis glabra*), a state potentially threatened plant, at or within a one-mile radius of the project study area. As identified by ODNR Division of Wildlife (DOW), the project is within the range of the following species:

- Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species
- Northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species
- Little brown bat (*Myotis lucifugus*), a state endangered species
- Tricolored bat (Perimyotis subflavus), a state endangered species

- Clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel
- Black sandshell (*Ligumia recta*), a state threatened mussel
- Northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish
- Mountain brook lamprey (*Ichthyomyzon greeleyi*), a state endangered fish
- Eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern
- Eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species
- Spotted turtle (*Clemmys guttata*), a state threatened species
- Northern harrier (*Circus cyaneus*), a state endangered bird
- Upland sandpiper (*Bartramia longicauda*), a state endangered bird
- Trumpeter swan (*Cygnus buccinator*), a state threatened bird
- Sandhill crane (*Grus canadensis*), a state threatened species
- American bittern (Botaurus lentiginosus), a state endangered bird
- Least bittern (*Ixobrychus exilis*), a state threatened bird

Through coordination with ODNR, the Indiana bat, northern long-eared bat, little brown bat, tricolored bat, clubshell, black sandshell, northern brook lamprey, and mountain brook lamprey were identified as potentially impacted by the project due to the location and proposed type of work. The remainder of the listed species were determined to not be impacted by the project. USFWS and ODNR coordination documentation is provided in **Appendix A: Agency Consultation**.

Alternative 1 – No Action

Under the No Action alternative, construction activities would not take place and there would be no direct impacts to federally listed threatened or endangered species, critical habitat, or state listed threatened, endangered, or otherwise protected species. In the event of a dam failure, federally protected species and their habitats could be harmed and drastically altered as a result.

Alternative 2 – Proposed Action

The Proposed Action has the potential to impact the federally endangered Indiana bat and the federal threatened northern-long eared bat. The Proposed Action would not affect the eastern massasauga rattlesnake based on coordination with USFWS. The Proposed Action additionally has the potential to impact the monarch butterfly, a candidate species. Candidate species are afforded no statutory protection through the ESA, but the USFWS encourages cooperative conservation for these species.

In regard to the bat species listed above, DOW and USFWS recommended that tree cutting (if necessary) should occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches if possible.

Tree clearing is necessary for project construction and would require 2.278 acres of trees to be cleared. The tree clearing would observe the USFWS and DOW timeframe to minimize impacts to bat species to the greatest extent possible. Clearing of woodland was minimized to only occur in areas where necessary as part of the construction. Orange construction fencing will be placed around protected trees throughout the LOD. Informal consultation with USFWS under Section 7 of the ESA was initiated by FEMA on August 20, 2022, and determined that the project may affect,

but is not likely to adversely affect the northern long-eared and Indiana bats. USFWS responded on August 31, 2022, concurring with the determination based on the commitment to cut all trees ≥3 inches dbh within the aforementioned tree clearing window.

DOW also recommended that a desktop habitat assessment be conducted for the listed bat species, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project study area. Gannett Fleming performed the desktop winter habitat survey in December 2021 and found no potential winter bat habitat areas occurring within 0.25 miles of the LOD. The closest occurrence of a potential winter bat habitat area to the LOD is 0.54 miles. For more details on the habitat assessment, see **Appendix E: Supporting Documentation**.

Per DOW's response, the project must not have an impact on freshwater native mussels at the project site, applying to both listed and non-listed species. A Phase 1 mussel survey was initiated on September 14, 2019. The results of the Phase 1 Mussel Survey confirmed the presence of Unionid Mussels. Construction activities associated with the proposed project have the potential to kill or harm freshwater mussels. All native mussels are protected in the State of Ohio (Section 1533.324 of the Ohio Rev. Code) and must be relocated prior to construction to avoid impacts as a result of the proposed project. Mussels within the salvage area downstream of the dam will be collected in accordance with the methodology described within "Freshwater Mussel Relocation in Meander Creek for Proposed Repairs and Improvements of the Mineral Ridge Dam, Mineral Ridge, Ohio," (EnviroScience, 2022). Mussels will then be relocated to equivalent or better habitat at least 200m downstream from the LOD. Typically, relocations occur upstream of the project area but the dam and impoundment upstream of the LOD prevents a logical relocation area. A report will be prepared documenting the salvage and relocation effort for submittal to DOW.

Based on the potential presence of lamprey species, DOW recommends that no in-water work be performed in perennial streams from March 15 through June 30 to reduce impact to these species. In-water work is required for the project and the restriction window will be observed to minimize potential impacts to lamprey species.

Informal consultation between FEMA and USFWS deemed that the Proposed Action "may affect, but is not likely to adversely affect" threatened and endangered bat species. To minimize impacts to the greatest extent feasible, the Proposed Action would adhere to the recommended time of year restrictions and minimization measures described above. BMPs will be utilized around streams, wetlands, and littoral areas to minimize impacts to these habitats. Additionally, mitigation for permanent wetland impacts has been achieved as discussed in **Section 3.2.2 Wetlands**. Through the implementation of these BMPs and minimization measures, impacts to federal and state-protected species would be minor and less than adverse as a result of the Proposed Action.

3.3.4 Migratory Birds

A migratory bird is any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. The Migratory Bird Treaty Act (MBTA) of 1918, as amended, 16 U.S.C. §§ 703–712, protects migratory birds and their nests, eggs, and body parts from harm, sale, or other injurious actions. All native birds, including common

species such as American robin (*Turdus migratorius*) and American crow (*Corvus brachyrhynchos*) are protected by the MBTA.

The Bald and Golden Eagle Protection Act (BGEPA) of 1940, 16 U.S.C. §§ 668 et seq., prohibits the take, possession, sale, or other harmful action of any golden (*Aquila chrysaetos*) or bald eagle (*Haliaeetus leucocephalus*), alive or dead, including any part, nest, or egg (16 U.S.C. § 668(a)).

Affected Environment

The project study area contains suitable habitat and would support migratory bird activity including nesting, breeding, and foraging. USFWS offers the Information for Planning and Consultation (IPaC) tool to determine potential impacts to protected species including migratory birds and eagles. IPaC has identified five (5) birds that may warrant special attention due to project location or due to their listing on the USFWS Birds of Conservation Concern (BCC) list. Species identified are listed in **Table 3.3** below.

Table 3.3 Migratory Birds of Conservation Concern

Species	BCC Status	Breeding Season	Probability of Presence (Months)
Bald Eagle (*Haliaeetus leucocephalus*)	Non-BCC Vulnerable BGEPA Protected	December through August	March, April, May, August, September, December
Belted Kingfisher (*Megaceryle alcyon*)	BCC in Bird Conservation Regions	March through July	March, April, June, July, August, September, October, November, December
Chimney Swift (*Chaetura pelagica*)	BCC Rangewide	March through August	May, June, July, August, September
Red-Headed Woodpecker (*Melanerpes erythrocephalus*)	BCC Rangewide	May through September	April, June, October
Wood Thrush (*Hylocichla mustelina*)	BCC Rangewide	May through August	June, July

Additional migratory bird species are likely to occur within the project study area. The species listed above are species recognized as requiring special attention; the additional species of migratory birds would also be considered for potential impacts as a result of project alternatives.

Alternative 1 – No Action

Under the No Action alternative, construction activities would not take place and there would be no direct impacts to birds protected under the MBTA or BGEPA. In the event of a dam failure, migratory bird habitat may be damaged or destroyed.

Alternative 2 – Proposed Action

The Proposed Action would have minor temporary and minor permanent impacts to migratory bird species. The project would require 2.278 acres of trees to be cleared prior to construction. This would be a minor, permanent impact to migratory bird species as there would be a reduction in habitat. Tree clearing would occur between October 1 and March 31 which would greatly reduce potential impacts to migratory birds of concern identified by IPaC and other migratory birds potentially utilizing the project study area. Clearing of woodland was minimized to only occur in areas where necessary as part of the construction. Temporary impacts associated with tree clearing and project construction activities would lead to disturbances to bird activities. These impacts would be minor.

Based on coordination with USFWS for a previous project, there is a known bald eagle nest in a tree adjacent to the Meander Creek Reservoir. This information was provided to USFWS during initial consultation in 2019. The nest is over 660 feet away from the project LOD and is unlikely to be impacted by the Proposed Action. For more detailed information on coordination with USFWS, see **Appendix A: Agency Consultation**.

3.3.5 Invasive Species

Executive Order 13112, Invasive Species, requires federal agencies to prevent the introduction of invasive species and provide for their control to minimize the economic, ecological, and human health impacts caused by invasive species.

The State of Ohio has established laws to prevent the spread of invasive plant species (Ohio Administrative Code Chapter Rule 901:5-30-1 and Ohio Rev. Code Section 901.50). Invasive plant species are listed and managed by the Ohio Department of Agriculture. Invasive wildlife and aquatic species are managed by ODNR DOW.

Affected Environment

During the wetland and waterway investigation on September 10 - 12, 2018, the following invasive species were observed within the project study area: common barberry (*Berberis vulgaris*), common reed (*Phragmites australis*), flowering rush (*Butomus umbellatus*), garlic mustard (*Alliaria petiolata*), Japanese honeysuckle (*Lonicera japonica*), Japanese stiltgrass (*Microstegium vimineum*), multiflora rose (*Rosa multiflora*), narrow-leaved cattail (*Typha angustifolia*), purple loosestrife (*Lythrum salicaria*), and Tartarian honeysuckle (*Lonicera tatarica*).

Alternative 1 – No Action

The No Action alternative would have no project-related impacts regarding invasive species as no construction or disturbance would occur.

Alternative 2 – Proposed Action

The Proposed Action may include minor, temporary impacts to invasive species due to construction activities. Construction could potentially result in spread of invasive plant species due to disturbed soils and possible transportation of species on equipment. Disturbed soils would provide invasive species an opportunity to establish and spread. Disturbed soils would be stabilized and planted with native grass seed in accordance with the SWPPP. BMPs are also included in the SWPPP that would reduce the potential for invasive species spread. Through proper implementation of the SWPPP, potential impacts regarding invasive plant species would be minimized. The Proposed Action would be very unlikely to spread or propagate aquatic invasive species or invasive wildlife.

3.4 Hazardous Materials

Hazardous materials are any solids, liquids, gases, or sludges which, because of their quantity, concentration, and physical or chemical characteristics, have the potential to cause harm to human health or the environment. These substances are identified by the EPA under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), with a comprised list including CWA Hazardous Substances (40 C.F.R. § 116.4), CWA Toxic Pollutants (40 C.F.R. § 401.15), CAA Hazardous Air Pollutants (33 U.S.C. § 7412(b)), and RCRA Hazardous Wastes (40 C.F.R. part 261 Subpart D).

Affected Environment

EPA's NEPAssist online tool was used to identify sites within or adjacent to the project study area that are regulated by federal hazardous materials laws (EPA, 2021). NEPAssist identified three regulated sites within a 0.5-mile radius of the project study area as depicted in **Figure 3.5** and summarized in **Table 3.4**. One site is regulated under RCRA, one site is listed as a water discharge site under NPDES, and one site is regulated/listed under both RCRA and NPDES. NEPAssist did not identify any sites in the project vicinity regulated under the Toxic Substance Control Act (TSCA), in the Toxic Release Inventory (TRI) database, or identified as a Brownfield or Superfund site.

Table 3.4 Regulated Sites in the Project Vicinity

Site No.	Site Name	Contact Address	Proximity to Site (miles)	Applicable Law/Regulation
1	Mahoning Valley Sanitary District	1181 Ohltown-McDonald Rd, Mineral Ridge, OH 44440	0.28	RCRA, NPDES
2	Builders Transport, Inc.	3484 Union St, Mineral Ridge, OH 44440	0.46	RCRA
3	Meander WPCF	3264 State Route 46, Mineral Ridge, OH 44440	0.41	NPDES

Source: nepassisttool.epa.gov

Alternative 1 – No Action

Construction related to dam rehabilitation and improvements would not occur under the No Action alternative. Therefore, there would be no impacts to applicable hazardous materials from the use of construction equipment or ground-disturbing activities. During a flood event, hazardous materials downstream of Mineral Ridge Dam could be impacted if facilities containing hazardous materials are damaged or if ground erosion exposes unknown hazardous materials.

Alternative 2 – Proposed Action

The Proposed Action, including principal spillway improvements, replacing the existing twin auxiliary spillways, and associated rehabilitation work, would not introduce any hazardous materials to the site, nor would it increase the risk of exposure to hazardous materials known to exist in the site's vicinity. Contractors would be responsible for the management of construction equipment to avoid minor impacts from oil, fuel, or lubricant leaks during equipment use. BMPs as described in the SWPPP should be employed to avoid, minimize, or mitigate potential impacts to hazardous materials. If hazardous materials are encountered during construction activities for the Proposed Action, the contractor(s) will identify, manage, and dispose of hazardous materials in accordance with all local, state, and federal regulations. Procedures should be in place that address safety, health, and emergency response; contaminated soil excavation; transportation and disposal of hazardous or contaminated material; and contaminated dewatering and drainage. Contractors would be required to comply with federal, state, and local laws and regulations pertaining to pollution and contamination of the environment to prevent impacts to surface water, groundwater, soil, and air with any hazardous materials.

No significant or permanent impacts from hazardous materials are anticipated as a result of the Proposed Action. The MVSD facility outside of the LOD that is listed as a regulated site may see positive benefits of the Proposed Action in terms of hazardous materials, as the Proposed Action would reduce the probability of a hazardous release associated with the MVSD facility. The remaining regulated sites in the project vicinity would not be affected during construction or operation phases. The Proposed Action would not add any hazardous facilities, operations, or chemicals to the project study area and would decrease the risk of hazardous material release from downstream facilities during a flood event.

Figure 3.5 Regulated Sites in Project Vicinity

3.5 Socioeconomics

3.5.1 Zoning and Land Use

The Weathersfield Township Zoning Department is responsible for the controlled enforcement of Township property use development (Weathersfield Township, 2022). The Trumbull County Planning Commission (TCPC) is an organization which guides the unincorporated areas of Trumbull County as a planning and decision-making resource (TCPC, 2021a). Through these two entities, regulations, land use, zoning maps, and zoning codes were evaluated to determine the project's consistency with local zoning and land use.

Affected Environment

Land use/cover for the project study area and its immediate vicinity was obtained from the USGS National Land Cover Dataset (NLCD) 2019, which is a consistent land cover data layer for the United States (USGS, 2019). The project study area includes the following NLCD land cover types: Open Water; Developed Open Space; Developed Low Intensity; Developed Medium Intensity; Barren Land; Pasture; and Deciduous Forest.

Mineral Ridge Dam is located within the Lower Meander Creek sub-watershed, and together with the Lower Mosquito Creek sub-watershed form the greater Mahoning River Watershed. Presently there is no development plan for the Lower Meander Creek sub-watershed.

The Proposed Action is located within parcels zoned for "MVSD" as of May 10, 2022, meaning, the LOD is within land controlled by the Mahoning Valley Sanitary District (**Figure 3.6**). Surrounding parcels are zoned for Agriculture and Residential. This area does not meet the definition of "subdivision" per Ohio Rev. Code Section 711.001 and thus, the Trumbull County Subdivisions Regulations (as amended July 8, 2021) do not apply.

Alternative 1 – No Action

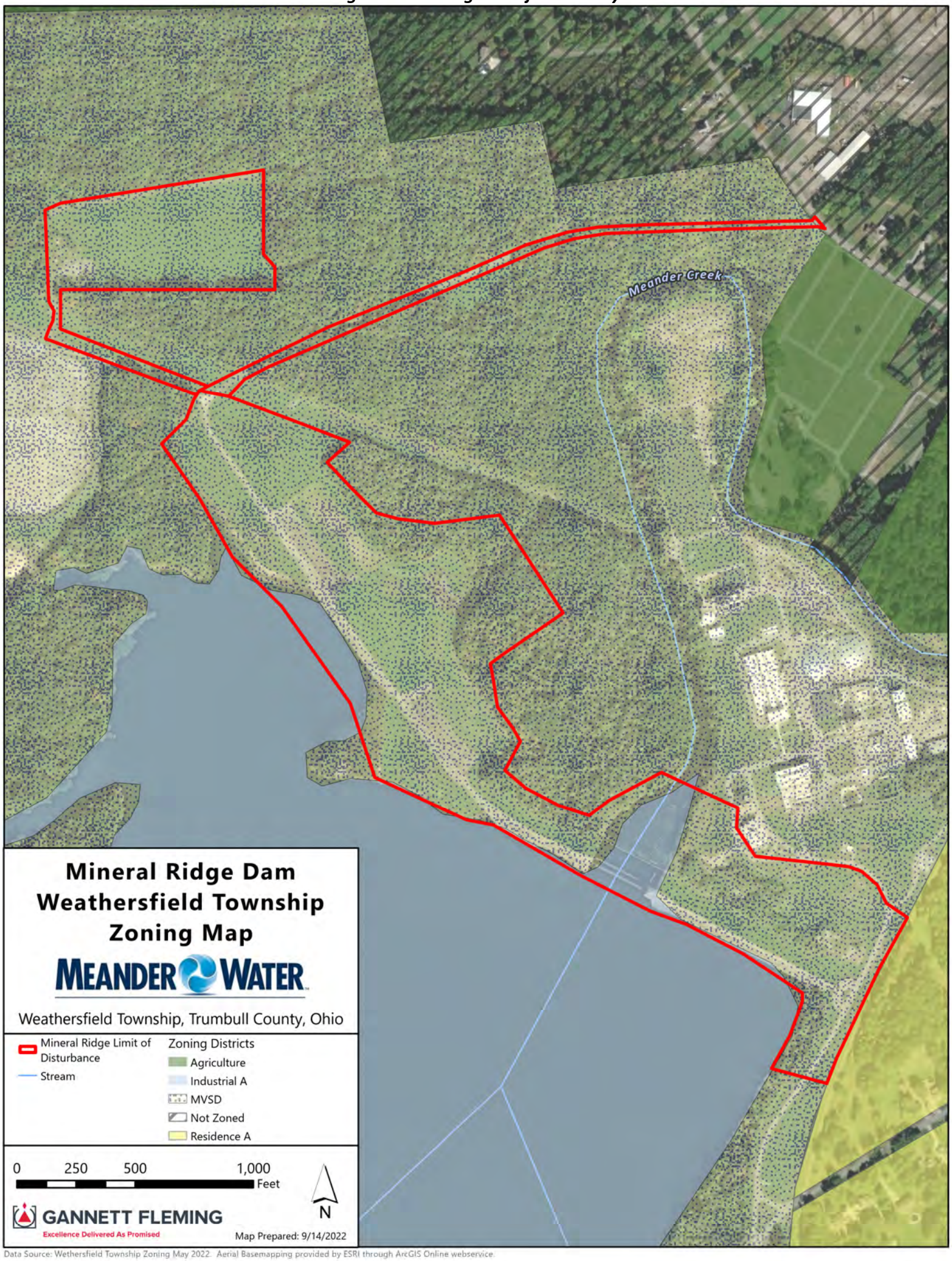
The No Action alternative would have no effect on conformity with the township's zoning regulations as no changes would occur. The parcels would remain zoned for MVSD use.

Alternative 2 – Proposed Action

The Proposed Action would require conformity with the Weathersfield Township Zoning Regulations. A Zoning Certificate would be required during construction "before any structure [is]… changed… dirt is moved or drainage changed" (Weathersfield Township, 2022). No zoning changes are proposed as the project is already within MVSD-owned land parcels. The Proposed Action would not generate any permanent changes in existing land use or developed land cover. Impacts to vegetated land cover are discussed in **Sections 3.2** and **3.3**.

The Proposed Action will have no impacts on the greater Mahoning River Watershed. The Proposed Action would not induce or increase the potential for future development within the Lower Meander Creek sub-watershed. Therefore, there would be no impacts to zoning or land use as a result of the Proposed Action.

Figure 3.6 Zoning in Project Vicinity



Data Source: Wethersfield Township Zoning May 2022. Aerial Basemapping provided by ESRI through ArcGIS Online webservice.

3.5.2 Noise

The Noise Control Act of 1972 defines "noise" as an undesirable sound. Noise is regulated at the federal level by the Noise Control Act of 1972, 42 U.S.C. §§ 4901, et seq. Noise standards developed by EPA provide a basis for state and local governments' judgments in setting local noise standards. The state of Ohio regulates noise control under Ohio Rev. Code Section 505.172. In addition, Weathersfield Township has issued a Notice of Noise Regulation in February 2021 related to areas zoned for residential use. The Proposed Action is outside of a residential district, and thus not subject to the conditions outlined in the township's notice. Weathersfield Township does not have noise ordinances that limit construction noise.

Affected Environment

Noise-sensitive land uses in the vicinity of project study area include residences located east of Ohltown-McDonald Road and Niles Greenway, immediately east of the eastern LOD of the project. There are no sensitive receptors such as schools, hospitals, or places of worship in the project vicinity.

Alternative 1 – No Action

The No Action alternative would not change ambient noise levels in the project study area. MVSD operations would continue as normal and have no effect on noise levels.

Alternative 2 – Proposed Action

The Proposed Action would cause temporary changes in the ambient noise levels in the project study area associated with rehabilitation construction activities and access road improvements. Temporary impacts during construction would include trucks hauling materials to and from the site, and the operation of equipment during excavation, demolition, and construction activities. Although there is no noise ordinance in Weathersfield Township applicable to the Proposed Action, it is anticipated that construction activities would take place during reasonable daylight hours when changes in noise levels are less significant. The operation and routine maintenance of the dam post-construction will be unchanged from current procedures. Therefore, there are no anticipated permanent impacts to noise levels.

3.5.3 Visual Resources

Affected Environment

The project has an LOD of approximately 55 acres. Existing visual resources in the project study area and its vicinity include trees, vegetation, wetlands, Meander Creek, Mineral Ridge Dam, Meander Creek Reservoir, and MVSD-owned infrastructure. Trees and vegetation shield Mineral Ridge Dam and the northern portion of Meander Creek Reservoir from nearby roadways, residences, and other public areas. The MVSD-utilized land is not publicly accessible and cannot be used by the public for recreation.

Alternative 1 – No Action

Under the No Action Alternative, the principal and auxiliary spillway would not be modified, and there would be no changes to the visual resources in the project study area.

Alternative 2 – Proposed Action

The Proposed Action would cause temporary visual impacts from construction equipment, excavation, tree removal, and construction staging. A temporary access road and stream crossing will be installed during construction. The Proposed Action would temporarily impact the visual environment for MVSD personnel utilizing the project study area. Since the MVSD-utilized land is not accessible to the public, it is unlikely to impact the visual environment for nearby residents and people using nearby roadways.

The Proposed Action's construction of one auxiliary spillway to replace the existing twin auxiliary spillways will have minor permanent impacts to visual resources in the project study area. Trees, vegetation, wetlands, and Meander Creek will be maintained as visual resources. Compensatory mitigation has been implemented for permanent wetland impacts. Therefore, only minor impacts to visual resources as a result of the Proposed Action are anticipated.

3.5.4 Public Services and Utilities

Affected Environment

Weathersfield Township is served by its own municipal police and fire departments and has three additional departments that maintain the township's four cemeteries, enforce zoning, and serve and maintain 40 miles of "accepted" Township roads (Weathersfield Township, 2022). Kerr Cemetery is approximately 0.35 miles northwest of Mineral Ridge Dam along Meander Creek. The public school district is Weathersfield Local School District, with Seaborn Elementary School (grades pre-K to 6) and Mineral Ridge Middle and High School (grades 7 to 12) located southeast of the project study area. Trumbull Memorial Hospital Forum and St. Joseph Hospital are approximately 5.5 miles north of the project study area, and St. Elizabeth Youngstown Hospital is approximately 7.2 miles southeast. No police, fire, public schools, or municipal-owned facilities are located within or adjacent to the project study area.

Mineral Ridge Dam is in an area zoned for MVSD use. All access roads within the project's LOD are utilized exclusively by MVSD. In addition, the MVSD-owned water treatment plant is immediately downstream of Mineral Ridge Dam but outside of the Proposed Action's limits of disturbance. Its placement is intentional to treat water from the Meander Creek Reservoir before providing a safe and potable water supply to MVSD's member cities. Existing water utilities are present in the LOD. Existing electric utilities are not present in the project study area but are located downstream.

Alternative 1 – No Action

Under the No Action alternative, there would be no utility disruptions or relocations. However, MVSD's water supply utilities and downstream utility lines could be damaged or destroyed during

a flood event from dam failure. A flood event could also prevent emergency vehicles or public utility vehicles from reaching critical areas such as residences and hospitals.

Alternative 2 – Proposed Action

MVSD utilizes the Meander Creek Reservoir, Mineral Ridge Dam, and their downstream water treatment plant to provide a safe and reliable water supply source to its approximate 220,000 community customers. Minor, temporary disruption to water utilities is possible as a result of the Proposed Action. However, the following stipulations are included in the Proposed Action contract documents to ensure any disruptions to water utilities are limited and do not cause adverse impacts to the downstream community:

- The Contractor shall perform the proposed work in such a manner that continuous, uninterrupted operation of all essential water supply services and facilities are maintained throughout the construction period.
- The Contractor shall not shutoff or disconnect any operating system of MVSD's facilities unless specifically called out for the Contractor to perform such work and authorized by MVSD.
- MVSD shall execute all equipment operations and shutdowns unless specially called out otherwise in the contract documents.
- The Contractor shall submit a written work plan prior to performing each phase of work to give MVSD assurance that the work has been planned to minimize interruptions.
- Any anticipated shutdowns associated with chemical feed and electrical system connections at the Mineral Ridge Dam Gate House shall be coordinated at least 14 days in advance before the scheduled interruption. Not more than one shutdown will be permitted in a 24-hour period and the duration of the shutdown shall be less than 4 hours.

No other utilities exist within the project's limits of disturbance. If other utilities in the project vicinity not owned by MVSD need to be temporarily shut off during construction, MVSD and its Contractor shall comply with all local ordinances regarding shut down notifications and procedures.

The Proposed Action would provide a significant benefit to public services by maintaining a safe and reliable water supply source to MVSD's community customers.

3.5.5 Traffic and Circulation

Affected Environment

Data on roads and transit services were obtained from the Ohio Department of Transportation (ODOT) Transportation Information Mapping System (TIMS) (ODOT, 2020). The project study area is within ODOT District 4.

All public roads, bikeways, and pedestrian trails are outside of the project's limits of disturbance. Both Salt Spring Road and Ohltown McDonald Road, respectively north and east of the site, are designated as county roads. East of Ohltown McDonald Road is the Niles Greenway/Mill Creek

Metroparks Bikeway, an 11-mile paved trail running from Western Reserve Road in Canfield Township to the Mahoning County/Trumbull County Line in Austintown Township.

Access to the Mineral Ridge Dam and northern portion of Meander Creek Reservoir is provided via two restricted access roads utilized exclusively by MVSD. Both access roads are within the limits of disturbance for the Proposed Action (refer to **Figure 2.1**). The east access road begins at approximately 1181 Ohltown McDonald Road, property of MVSD, southeast of the LOD and east of Meander Creek Reservoir. At this intersection, the east access road leads north-northeast before turning west-northwest in parallel with Mineral Ridge Dam. The west access road is accessible via Salt Springs Road, north of the site. From Salt Springs Road, the west access road travels southwest, then turns southeast to run parallel to the northern boundary of Meander Creek Reservoir and Mineral Ridge Dam.

Alternative 1 – No Action

The No Action alternative would have no direct effect on traffic circulation in the project study area. The MVSD-utilized east and west access roads would remain in their current condition providing restricted access to Mineral Ridge Dam. It is possible that in the event of dam failure, downstream public roads may become inaccessible for an indeterminate amount of time, increasing traffic circulation for roadways used as detours.

Alternative 2 – Proposed Action

The Proposed Action alternative would result in minor, temporary increases in vehicular traffic on the surrounding roadways as a result of construction vehicles and equipment moving to and from the site. Both the west and east access roads are restricted to only MVSD-use, and the west access road is planned as the primary road for construction vehicle access. The Proposed Action also includes improvements to both the east and west access roads within the project limits of disturbance. Appropriate construction phasing will ensure uninterrupted access to Mineral Ridge Dam during rehabilitation of each access road. Improvements to the access roads include repaving and low area modifications. There are no proposed modifications to reroute or increase the access roads' capacity.

The Proposed Action does not anticipate any public roadway closures or detours. Traffic mitigation measures would be implemented as applicable, but the project is not expected to cause increased roadway traffic in the area.

3.5.6 Socioeconomics and Environmental Justice (Executive Order 12898)

Executive Order (EO) 12898 was enacted to identify and address the disproportionately high and adverse human health or environmental effects federal actions may have on minority and low-income populations, and to develop a strategy for implementing environmental justice. The term "minority" is defined as persons who identify as Black or African American, American Indian or Alaska Native, Asian American or Pacific Islander, Hispanic, or more than one race. Low-income populations are defined as those persons living with an income below the poverty level according to annual poverty thresholds established by the U.S. Census Bureau.

Affected Environment

To characterize the demographics of the area, U.S. Census Bureau American Community Survey (ACS) 2020 data was collected for the project study area and downstream communities that could be impacted by a dam failure. The upstream/drainage area of Meander Creek Reservoir was not included as there are no anticipated upstream impacts except for reservoir elevation decrease in the event of a dam failure.

The downstream area was defined by Census Tract groups within the probable maximum flood (PMF) dam failure inundation area. Data was analyzed for 35 census tracts downstream of Mineral Ridge Dam covering areas in both Ohio (Trumbull and Mahoning Counties) and Pennsylvania (Lawrence County) (**Figure 3.7**). Census tracts are defined by the U.S. Census Bureau as small, relatively permanent statistical subdivisions of a county with typical population sizes between 1,200 and 8,000 people. **Appendix E: Supporting Documentation** includes a data collection summary table of the downstream population susceptible to flooding in the event of dam failure. While there is some overlap between the population analyzed for downstream flood impacts and the population of MVSD's water supply community customers, the former was evaluated under this resource category due to their risk of flood impacts in the event of dam failure.

The population of the total downstream inundation area is 109,513 persons, comprised of 67,566 persons in Trumbull County, Ohio, 26,998 in Mahoning County, Ohio, and 14,949 in Lawrence County, Pennsylvania (Census Bureau 2020). The downstream population in Trumbull County accounts for 33.9% of the entire Trumbull County population.

Income and Poverty Level

Median household income in the downstream area averages $42,076, which falls under all county and state averages collected (Census Bureau, 2020). In total, 24 of the 35 census tracts evaluated fall below the median income for their respective county and 29 of the 35 census tracts fall below the median income for their respective state. Of the three counties within the downstream area, the census tracts in Mahoning County stood out as outliers with average median income of $30,788, approximately 35% lower than the median income of the county.

Approximately 20.5% of households and 21.8% of individuals in the downstream area are identified as having income below the poverty level, which is higher than the poverty levels for all three counties, Ohio, and Pennsylvania. Poverty rates vary between households and individuals of each census tract with no discerning pattern. However, overall, the census tracts in Mahoning County account for the highest averages: approximately 34.1% of households and 35.6% percent of individuals in Mahoning County are identified as having income below the poverty level (Census Bureau, 2020).

Race and Ethnicity

Race and ethnicity characteristics were derived to meet the definition of minority under EO 12898, Environmental Justice. Minority residents are characterized as those who identified as anything other than "White Alone" on the ACS 5-year 2020 survey via the U.S. Census Bureau.

Minority resident percentages vary widely in the downstream area and therefore are described by grouping census tract per county. Census tracts in the downstream area of Trumbull County are comprised of 11.3% of minority residents, below both the county and Ohio averages. The census tracts in Mahoning County account for 44.2% of minority residents, which is over twice the average percentages for both Mahoning County and Ohio. The census tracts analyzed for Lawrence County, PA account for 5.4% of minority residents, which is below the county average and about one-quarter of the state average.

Environmental Justice

In comparison with characteristics of Trumbull, Mahoning, and Lawrence Counties, and the States of Ohio and Pennsylvania, the downstream area exhibits an equal or higher percentage of minority residents and higher levels of poverty.

A threshold of 50% or greater minority population for individual census tracts was used to identify areas considered to be potential areas of Environmental Justice (EJ) concern. Thresholds for individuals and household poverty used to evaluate potential EJ concerns were defined as the aggregate average for the downstream area. A total of seven census tracts include minority populations over 50%: census tract 39.155.9340.00 in Trumbull County, and census tracts 39.099.8006.00, 39.099.8102.00, 39.099.8137.00, 39.099.8139.00, 39.099.8140.00, 39.099.8141.00, in Mahoning County. There are two additional census tracts in Mahoning County near the 50% threshold. For individual and household poverty percentages, Mahoning County has the highest comparative averages, bringing the aggregate downstream data to higher than county and state averages collected. This data concludes that there are EJ communities present in the downstream population.

Regional Classifications

Additional classifications were considered to provide further context of potential impacts to the project study area and downstream communities. These classifications include the federally recognized Appalachian Region and the U.S. Center for Disease Control (CDC) and Agency for Toxic Substance and Disease Registry (ATSDR) Social Vulnerability Index (SVI).

The Appalachian Regional Commission (ARC) is an economic development partnership agency of the federal government and 13 state governments, whose mission is to build community capacity and strengthen economic growth in Appalachia (ARC, 2021). Appalachia is made up of 423 counties in the U.S. All three counties that contain census tracts within the dam inundation area – Trumbull County and Mahoning County in Ohio, and Lawrence County in Pennsylvania – are within the ARC-recognized Appalachian Region.

The CDC/ATSDR SVI database is available as a tool for emergency response planning to support communities during a public health emergency (ATSDR, 2022). The CDC/ATSDR SVI Interactive Map was used to determine the social vulnerability levels for the project study area and communities within the downstream inundation area in the event of dam failure. Social vulnerability refers to the potential effects on communities caused by external stresses on human health.

The most recent data available on the SVI Interactive Map is for the year 2018, and thus does not include social vulnerability data related to the COVID-19 pandemic. Possible SVI scores range from zero (0) as the lowest vulnerability to one (1) as the highest vulnerability. Scores were collected on a county-level for the purposes of this analysis.

The proposed action is within Trumbull County, Ohio, which has an SVI Score of 0.464. This indicates a low to moderate level vulnerability. For the additional counties within the dam inundation area, Mahoning County, Ohio has an SVI score of 0.5889 indicating a moderate to high level of vulnerability, and Lawrence County, Pennsylvania has an SVI score of 0.4694, indicating a low to moderate level of vulnerability.

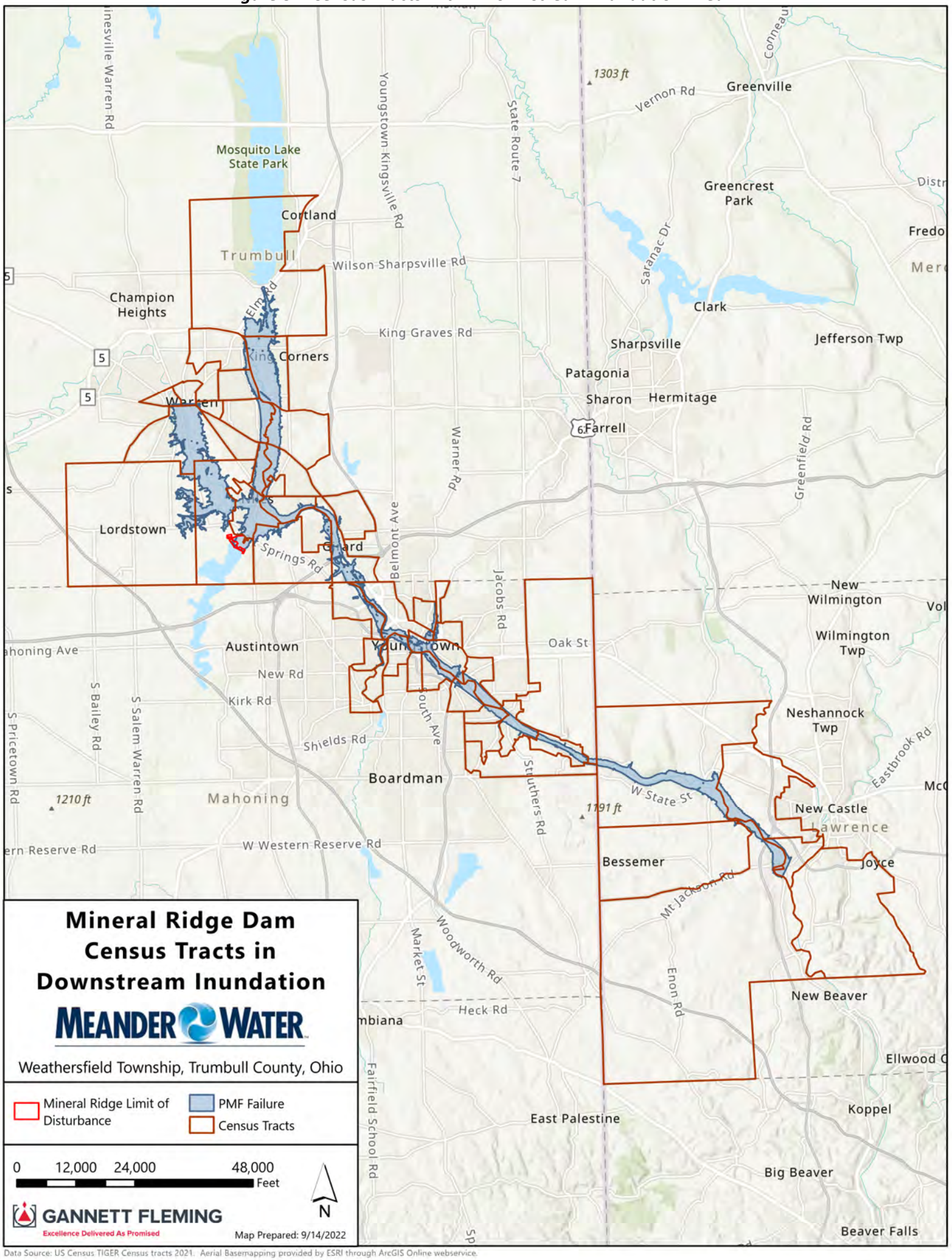
Alternative 1 – No Action

Under the No Action Alternative, the potential for injury, loss of life, and loss of potable water supply in the event of a dam breach would remain. The Environmental Justice (EJ) populations identified within Trumbull County and Mahoning County in the downstream flood inundation area may experience disproportionately high and adverse impacts associated with dam failure risks both in terms of flooding and lack of access to potable water.

Alternative 2 – Proposed Action

The Proposed Action would not have any disproportionately high or adverse effects on the identified EJ populations, nor the populations identified within the additional regional classifications. The project's limits of disturbance are within an area exclusively utilized by MVSD. No residential relocations are proposed, and no permanent impacts to traffic, noise, or air quality are anticipated for all downstream populations, including EJ communities. The Proposed Action would result in a benefit for EJ populations within MVSD's member cities by maintaining a safe and reliable water supply for these communities. The Proposed Action would also decrease the risk of a flood event due to dam failure, reducing the probability of loss of life and potential for injury of downstream EJ populations.

Figure 3.7 Census Tracts within Downstream Inundation Area



Data Source: US Census TIGER Census tracts 2021. Aerial Basemapping provided by ESRI through ArcGIS Online webservice.

3.5.7 Safety and Security

The Occupational Safety and Health Act of 1970, 29 U.S.C. §§ 651 – 678, requires safe and healthful conditions for workers by setting and enforcing standards, and providing training, outreach, and education and compliance assistance. The act created the Occupational Safety and Health Administration (OSHA) which established construction standards under 29 C.F.R. Part 1926. Ohio does not have its own registered state plan with OSHA, therefore, employers in the state operate under the federal OSHA guidelines.

Additional safety risks in the project study area include the risk of dam failure and subsequent flooding in the downstream areas. The ODNR Division of Water Resources administers the state's dam safety program under Section 1521.06 of the Ohio Rev. Code. The existing Mineral Ridge Dam structure does not meet the safety requirements of ODNR Division of Water Resources.

Affected Environment

Mineral Ridge Dam is classified as a Class I structure by ODNR, indicating a high-hazard classification that would result in the probable loss of human life should the dam fail. In the event of dam failure, both MVSD employees and downstream populations will be subject to safety risks.

Alternative 1 – No Action

Under the No Action alternative, current dam safety deficiencies identified at Mineral Ridge Dam would not be addressed, and the facility would remain non-compliant with current ODNR and federal dam safety criteria. The risk of dam failure would remain, perpetuating hazardous conditions that would have a potential impact on safety for workers and the population downstream of the Mineral Ridge Dam.

Alternative 2 – Proposed Action

Standard construction-related safety risks would be temporarily present in the project study area. The construction contractor shall adhere to safe work practices in accordance with OSHA 29 C.F.R. § 1926 and use qualified personnel for construction activities. A project Health and Safety Plan will be developed, and its conditions will be adhered to. The construction site will be secured from public access.

Rehabilitation of the Mineral Ridge Dam is needed, in part, to bring the facility into compliance with current ODNR and federal dam safety criteria. Improving the principal spillway and modifying the auxiliary spillway(s) would benefit MVSD-personnel and public safety in the long term by addressing the potential failure modes (PFMs) identified during the project's technical analysis. In August 2022, the ODNR Division of Water Resources issued a permit to MVSD authorizing the reconstruction of the Mineral Ridge Dam.

Post-construction, the Proposed Action would reduce natural hazard risk impacts to the downstream populations through addressing PFMs and bringing Mineral Ridge Dam into compliance with ODNR dam safety criteria. This would be a beneficial impact on public safety and security as a result of the Proposed Action.

3.6 Historic and Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended 54 U.S.C §§ 300101 et seq., requires that the effects a proposed federal action may have on historic and cultural resources are identified and assessed. These resources include both architectural and archaeological resources, such as historically important buildings, structures, objects, sites, districts, physical remains, and areas of traditional cultural significance. Resources that are listed, eligible, or potentially eligible for listing on the National Register of Historic Places (NRHP) are subject to protection from adverse impacts resulting from a federal undertaking in accordance with 36 C.F.R. Part 800.

In addition, FEMA must also comply with the following laws as they relate to historic and cultural resources:

- American Indian Religious Freedom Act of 1978, 42 U.S.C. § 1996, which provides for the protection and preservation of American Indian sites, possessions, and ceremonial and traditional rites.
- Archaeological Resources Protection Act of 1979, 16 U.S.C. §§ 470aa–470 mm, which provides for the protection of archaeological resources on public lands and Indian lands.
- Native American Graves Protection and Repatriation Act, 25 U.S.C. §§ 3001–3013, in cases where Native American cultural items are found on federal and tribal lands.

To comply with NHPA and applicable regulations, an Area of Potential Effect (APE) was identified pursuant to 36 C.F.R. § 800.4 to establish the geographic area within which the proposed federal action may directly or indirectly affect cultural resources. Potential cultural resources were evaluated within the APE for both historic structures above ground and archaeological resources below ground.

A Phase I Archaeological Survey Report and a Historic Architectural Assessment Report were completed for the Proposed Action in 2018 by Cultural Resource Analysts, Inc. (CRA) on behalf of Gannett Fleming (CRA 2018). The investigations defined the APE as the limits of disturbance for the Proposed Action, encompassing the existing dam site, site access along existing roads, and a proposed spoil area (**Figure 2.1**). The entire APE is an approximately 56.9-acre parcel of both open and forested land located at the head of Meander Creek Reservoir and Mineral Ridge Dam. Following these investigations, consultation with Ohio History Connection, the Ohio State Historic Preservation Office (SHPO), was initiated in November 2018 to seek concurrence on findings as described herein. In January 2019, SHPO provided a finding of No Adverse Effect as the Proposed Action is currently designed. **Appendix A: Agency Consultation** contains SHPO correspondence and all cultural and historic resource reporting.

3.6.1 Historic Structures

Affected Environment

A Historic Architectural Assessment for the Proposed Action was completed in August 2018 (CRA 2018a). The initial survey was conducted in a manner compliant with federal regulations concerning the impact of federal actions on sites and structures listed in, or eligible for nomination to, the NRHP. These regulations include Section 106 for the NHPA of 1966, regulations published in 36 C.F.R. Part 800, and 33 C.F.R. Part 325 Appendix C of the USACE procedures for protection of historic properties.

Investigations focused on Mineral Ridge Dam and its associated Gate House. The objective of the historic architectural assessment was to evaluate the significance and integrity of the dam to determine if a recommendation for listing eligibility in the NRHP was appropriate.

A records review of the Ohio SHPO online mapping system indicated that the dam and gate house had not been previously surveyed. However, it was noted that the Trumbull County Planning Commission had previously surveyed the Mahoning Valley Sanitary District complex (TRU-2460-23) immediately downstream of the dam at an unknown earlier time. The survey included the MVSD-owned complex of buildings constructed from the years 1929 to 1932. The TRU-2460-23 site was recommended as eligible on its associated Ohio Historic Inventory Form. Prior to coordination with SHPO for this Proposed Action, there was no official determination of eligibility for the TRU-2460-23 site. Site TRU-2460-23 is located beyond the limits of disturbance of the Proposed Action (**Figure 3.8**). However, during the 2018 survey, the site was visited to assist in placing the Mineral Ridge Dam and Gate House within their proper context.

The Mineral Ridge Dam Site historic cultural assessment was completed in August 2018, noting the dam's conditions at the time and assessing it for potential significance. The site was designated SHPO Survey No. TRU-02944-23. Photographs were taken of the dam, the gatehouse, and the surrounding area. These and the historic assessment are available in **Appendix E: Supporting Documentation**. **Figure 3.8** depicts the location of the dam and gatehouse within the project's limits of disturbance.

The assessment recommended that Mineral Ridge Dam and Gate House (TRU-02944-23) would not be individually eligible for listing in the NRHP since it does not hold sufficient significance as a single object. However, when placed within its proper context and combined with the resources contained within the MVSD complex, the site may be eligible as a contributing resource to the MVSD Site (TRU-2460-23). Upon review of the 2018 historical cultural assessment, SHPO provided concurrence in January 2019 with the finding that the Mineral Ridge Dam and its Gate House (TRU-02944-23), and the MVSD complex (TRU-2460-23) are potentially eligible for inclusion in the National Register of Historic Places under Criterion A and C.

There were no other historic resources identified as Listed in the NRHP in the project limits of disturbance nor immediate vicinity.

Alternative 1 – No Action

The No Action alternative would not disturb existing eligible or potentially eligible historic structures within the APE or immediate vicinity. Routine maintenance would continue at Mineral Ridge Dam under the No Action alternative. If dam failure were to occur, it is possible that potentially eligible, eligible, or listed structures downstream of the site could be damaged or destroyed.

Alternative 2 – Proposed Action

SHPO provided their response to the submitted historic architectural assessment on January 7, 2019, and as previously stated, concurred with the finding that the dam, gatehouse, and MVSD complex are potentially eligible for inclusion in the NRHP. In addition, SHPO did "not object to a finding of No Adverse Effect" as proposed by the USACE as part of the Nationwide Permit (NWP) in development at the time.

FEMA submitted a final finding of No Adverse Effect on September 23, 2022, as the project design has not changed since initial SHPO consultation. SHPO provided concurrence with FEMA's finding on October 11, 2022. FEMA found that the work to be done on the dam and gate house is not likely to be visible outside the APE for this undertaking. Repairs to the gatehouse are sympathetic to the original design, materials, and workmanship, so are not likely to detract from nearby views. The work proposed on the dam will allow the facility to continue to function as originally designed. The work will be done below grade of the surrounding area, which also minimizes visual effects. In addition, views of the gatehouse and dam from the nearby MVSD buildings are obscured by trees planted along the bank of Meander Creek. Overall, the effects of the proposed undertaking are minimal, and do not negatively affect character-defining features of the resources. Consultation documentation is included in **Appendix A: Agency Consultation**.

3.6.2 Archaeological Resources

Affected Environment

A Phase I Archaeological Survey of the APE was completed in October 2018 (CRA 2018b). A records review for the Proposed Action was conducted using the SHPO online mapping system, available historic maps, and atlases. The study area for the records review included the entire direct APE and the area extending 1.0 miles from its boundaries. The review of SHPO online databases indicated that no documented cultural resources or prior cultural resource surveys were located within or adjacent to the APE. The review of available cartographic resources during the survey identified a single structure within or adjacent to the APE.

During the Phase I Archaeological Survey, two previously unrecorded archaeological sites were identified within the APE: Sites 33 TR 279 and 33 TR 280 (**Figure 3.8**). Both sites are small lithic scatters situated in upland areas and have no temporal affiliation. No diagnostic lithic or ceramic materials were recovered. Both sites are considered ineligible for listing to the NRHP under Criterion D. These sites are unlikely to yield information regarding the history and/or prehistory that is locally, regionally, or nationally significant.

In addition, the survey also noted a structure on the historic plat maps charted within the direct APE. No extant remains of that structure were discovered during field investigations.

Alternative 1 – No Action

The No Action alternative would have no effect on known archaeological resources as no construction or ground disturbance activities would occur and such identified resources would not be disturbed. If dam failure were to occur, it is possible that potentially eligible, eligible, or listed archaeological resources downstream of the site could be damaged or destroyed.

Alternative 2 – Proposed Action

SHPO provided response to the submitted archaeological survey on January 7, 2019 and stated the opinion that sites 33 TR 279 and 33 TR 280 are Not Eligible for inclusion on the NRHP. Therefore, no adverse impacts to archaeological resources are anticipated as a result of the Proposed Action. However, should evidence of intact archaeological deposits be identified within the APE during project development, or should evidence of human remains be discovered within the LOD, work in the area of discovery shall cease, the resource should be secured and protected from the elements, and the Contractor should immediately notify MVSD who should notify FEMA of the discovery. FEMA would reinitiate consultation with SHPO.

FEMA submitted a final finding on September 23, 2022, of no historic properties to SHPO for archaeological resources as the project design has not changed since initial consultation. SHPO provided concurrence with FEMA's finding on October 11, 2022. Consultation documentation is included in **Appendix A: Agency Consultation**.

Figure 3.8 Historic and Archaeological Resources within APE

Data Source: Archaeological and Historic Sites determined from Archaeological Study 2018. Aerial imagery provided by ESRI through ArcGIS Online webservice.

3.6.3 Tribal Coordination and Religious Sites

Executive Order (EO) 13175, Consultation and Coordination with Indian Tribal Governments, instructs federal agencies to "establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen… relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes…"

On July 22, 2022, FEMA initiated consultation with the following federally-recognized Tribal Nations,

- Delaware Tribe of Indians
- Nottawaseppi Huron Band of the Potawatomi Tribe
- Seneca Nation of Indians
- Seneca-Cayuga Nation

FEMA sent a letter to each Tribe with details about the project location and proposed activity. FEMA requested comment on the potential impacts the Proposed Action may have on lands traditionally used by or sacred to each Nation, including known archaeological sites within the project's LOD. Letters included a request for response within 30 days of receipt of the documentation and no responses were received.

Affected Environment

No responses from Tribal Nations were received within the 30-day response-request period. Therefore, it is anticipated that no lands traditionally used by or sacred to each Nation, including archaeological sites, exist within the project LOD. Correspondence sent to the Tribal Nations is provided in **Appendix B: Tribal Nation Consultation.**

Alternative 1 – No Action

The No Action alternative would have no effect on known or unknown archaeological or Indian religious or sacred sites as no construction or ground disturbance activities would occur. In the event of dam failure, there is the possibility that downstream sites may be damaged or destroyed.

Alternative 2 – Proposed Action

The Proposed Action would have no effect on known archaeological sites. Since no responses from Tribal Nations were received, it is anticipated that there will be no effect on known Indian religious or sacred sites. If any human or archaeological remains are encountered during project construction, work shall stop immediately and MVSD will notify FEMA. FEMA will then notify SHPO and the Delaware Tribe of Indians, Nottawaseppi Huron Band of the Potawatomi Tribe, Seneca Nation of Indians, and Seneca-Cayuga Nation as applicable.

3.7 Comparison of Alternatives

Table 3.5 summarizes the potential impacts of each alternative on the resource categories discussed in Chapter 3 of this Environmental Assessment.

Table 3.5 Summary of Environmental Impacts

Geology, Soils, and Topography

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to geology, soils, and topography. If dam failure were to occur, it is possible that soils, topography, or geological resources downstream of the site could be drastically altered.	The Proposed Action would have minor temporary and minor permanent impacts to soils, geology, and topography.	Minor permanent impacts are anticipated to be beneficial in nature due to more stable slope downstream of the Meander Creek Reservoir. BMPs would be implemented to minimize impacts related to erosion and sedimentation. Upon final grading, soils will be permanently stabilized and revegetated in accordance with the SWPPP.

Water Resources and Water Quality

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to water resources and water quality. If dam failure were to occur, temporary and permanent impacts as a result of extreme high flows, erosion, and sedimentation would be likely impacting water resources, water quality, and access to potable water.	The Proposed Action would have minor temporary and permanent impacts to water resources and water quality.	BMPs as described in the SWPPP should be employed to avoid, minimize, or mitigate potential temporary impacts to water resources and water quality during construction.

Floodplain Management

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to floodplain management. If dam failure were to occur, floodplains downstream of the Mineral Ridge Dam would experience drastic changes as a result of extremely high flows, erosion, and sedimentation.	The Proposed Action would have minor temporary impacts associated with construction activity within floodplains. No permanent impacts are anticipated.	BMPs as described in the SWPPP should be employed to avoid, minimize, or mitigate potential temporary impacts to floodplains during construction. The Proposed Action would comply with the Flood Hazard Area Development Permit for the project.

Air Quality

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to air quality.	The Proposed Action would have minor temporary impacts to air quality associated with construction vehicle activity. No permanent impacts are anticipated.	In accordance with the SWPPP, the contractor shall monitor and take precautions to control dust and other air pollutants including but not limited to using water or chemicals, limiting vehicles allowed on-site, minimizing the operating speed of vehicles, etc.

Terrestrial and Aquatic Environment

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to terrestrial and aquatic environment. In the event of dam failure, there is a potential that terrestrial or aquatic habitats downstream of Mineral Ridge Dam may be damaged or destroyed.	The Proposed Action would involve minor temporary and minor permanent impacts to terrestrial and aquatic environments as a result of construction activities.	Clearing of woodland was minimized to only occur in areas where necessary as part of the construction. Orange construction fencing would be placed around protected trees throughout the LOD. BMPs and minimization measures outlined in the SWPPP and USACE permit would be implemented to reduce impacts to aquatic habitats to the greatest extent feasible.

Wetlands

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to wetlands.	Minor temporary and moderate permanent impacts to wetlands would occur as a result of the Proposed Action.	BMPs and minimization measures outlined in the SWPPP and USACE permit would be implemented to reduce impacts to wetlands to the greatest extent feasible. Compensatory mitigation has been implemented for permanent wetland impacts at a 1:1 ratio through the purchase of wetland mitigation credits from an existing bank within the watershed.

Threatened and Endangered Species

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to threatened and endangered species. In the event of a dam failure, federally and state protected species and their habitats could be harmed and drastically altered as a result.	The Proposed Action would have minor temporary and minor permanent impacts to threatened and endangered species and their habitats as a result of tree clearing, dewatering, and construction activity. Coordination with regulatory agencies has occurred to ensure these impacts are less than adverse.	Tree clearing would be restricted to occur between October 1 and March 31 to reduce impacts to protected bat species. No in-water work be performed in perennial streams from March 15 through June 30 to reduce impacts to protected lamprey species. Mussels within the project area would be salvaged and relocated downstream of the project prior to construction. BMPs will be utilized around streams, wetlands, and littoral areas to minimize impacts to these habitats.

Migratory Birds

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to migratory birds. In the event of a dam failure, migratory bird habitat may be damaged or destroyed.	The Proposed Action would have minor temporary and minor permanent impacts to migratory birds and their habitats as a result of tree clearing and construction activity.	Tree clearing would be restricted to occur between October 1 and March 31 and would reduce potential impacts to migratory birds. Clearing of woodland was minimized to only occur in areas where necessary as part of the construction.

Invasive Species

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to invasive species.	The Proposed Action may include minor, temporary impacts to invasive species due to construction activities leading to disturbed soils and the possible transportation of species on equipment. The Proposed Action would be very unlikely to spread or propagate aquatic invasive species or invasive wildlife.	BMPs are included in the SWPPP that would reduce the potential for invasive species spread and minimize potential impacts regarding invasive plant species would be minimized.

Hazardous Materials

No Action Impacts	Proposed Action Impacts	Mitigation
No impact to hazardous materials. During a flood event, hazardous materials downstream of Mineral Ridge Dam could be impacted if facilities containing hazardous materials are damaged or if	The Proposed Action would not involve the addition of any hazardous materials or chemicals to the site, nor would it increase the overall risk of hazardous materials known to already exist in the environment. There is the	BMPs as described in the SWPPP should be employed to avoid, minimize, or mitigate potential temporary impacts from hazardous materials during construction

ground erosion exposes unknown hazardous materials.	potential for temporary impacts to hazardous materials during construction.	

Zoning and Land Use

No Action Impacts	Proposed Action Impacts	Mitigation
No impact on zoning and land use.	No impact on zoning and land use and in compliance with local zoning regulations.	The Proposed Action would require conformity with the Weathersfield Township Zoning Regulations.

Noise

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to ambient noise levels.	Minor temporary changes in ambient noise levels associated with construction. No permanent impacts.	It is anticipated that construction activities will take place during reasonable daylight hours when changes in noise levels are less significant.

Visual Resources

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to visual resources.	Temporary visual impacts from construction equipment, excavation, tree removal, and construction staging. Minor permanent impacts to visual resources as a result of new auxiliary spillway affecting only MVSD personnel. No impacts to visual environment for nearby residents and people using nearby roadways.	No mitigation measures to visual resources are anticipated as there are no impacts to the public and construction visual impacts are temporary in nature affecting only MVSD personnel.

Public Services and Utilities

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to public services resources and utilities. The possibility for future damage or destruction of utilities in the event of dam failure would remain.	Minor, temporary disruptions to water utilities are possible during construction. Significant benefit to public services by maintaining a safe and reliable water supply source to MVSD's community customers.	See Section 3.5.4 for contract stipulations to mitigate and minimize disruptions to water utilities.

Traffic and Circulation

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to traffic and circulation on public roadway or MVSD-utilized access roads, except in the event of dam failure where downstream public roads may become inaccessible for an indeterminate amount of time.	Minor temporary impact to public roadways from the operation of construction vehicles and equipment to and from the site. Permanent impacts to MVSD east and west access roads which are proposed for improvements under the Proposed Action.	Appropriate construction phasing will ensure uninterrupted access to Mineral Ridge Dam during rehabilitation of each access road. Traffic mitigation measures would be implemented as applicable, but the project is not expected to cause increased roadway traffic in the area.

Environmental Justice

No Action Impacts	Proposed Action Impacts	Mitigation
No change in impact to EJ communities. The potential for injury, loss of life, and loss of potable water supply in the event of a dam breach would remain.	No disproportionately high or adverse effects on the identified EJ populations. Beneficial impact to EJ populations in maintaining a safe and reliable water supply, and decreasing the risk of a flood event, reducing the probability of loss of life and potential for injury of downstream EJ populations.	None

Safety and Security

No Action Impacts	Proposed Action Impacts	Mitigation
Potential adverse impacts of not meeting current dam safety criteria. Risk of dam failure would perpetuate hazardous conditions that could have a potential impact on safety	Negligible temporary impact as long as construction safety measures are followed. Beneficial permanent impact once Mineral Ridge Dam is rehabilitated to meet ODNR and federal dam safety standards.	Compliance with OSHA regulations during construction.

Historic Structures

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to eligible or potentially eligible historic structures. If dam failure were to occur, it is possible that potentially eligible, eligible, or listed structures downstream of the site could be damaged or destroyed.	In accordance with received SHPO concurrence, no adverse effects are anticipated.	Mortar color, composition, and profile to match existing masonry of gatehouse.

Archaeological Resources

No Action Impacts	Proposed Action Impacts	Mitigation
No impacts to known archaeological resources. If dam failure were to occur, it is possible that potentially eligible, eligible, or listed archaeological resources downstream of the site could be damaged or destroyed.	No impacts to known archaeological resources. Resources identified within project LOD are Not Eligible as per SHPO. There is the potential for unanticipated discoveries during construction.	Unanticipated discoveries will be reported to FEMA to reopen consultation with SHPO and Tribal Nations. Work in the area of discovery shall cease and the resource shall be secured and protected from the elements.

Tribal and Religious Sites

No Action Impacts	Proposed Action Impacts	Mitigation
No anticipated impacts to Tribal and Religious Sites. In the event of dam failure, unidentified downstream sites may be damaged or destroyed.	No anticipated impacts to Tribal and Religious Sites. There is the potential for unanticipated discoveries during construction.	If any human or archaeological remains are encountered during project construction, work shall stop immediately and MVSD will notify FEMA. FEMA will then notify SHPO and the Delaware Tribe of Indians, Nottawaseppi Huron Band of the Potawatomi Tribe, Seneca Nation of Indians, and Seneca-Cayuga Nation as applicable.

4 CUMULATIVE IMPACTS

This section evaluates the potential cumulative impacts associated with the implementation of the Proposed Action. Cumulative effects or impacts are defined as per the Council of Environmental Quality (CEQ) regulations for implementing NEPA (40 C.F.R. Part 1508) as:

> "…[E]ffects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time."

CEQ regulations require an assessment of cumulative effects during the decision-making process for federal projects.

MVSD consistently makes upgrades and improvements to their facilities so that their operations may continue accordingly. Prior to 2014, MVSD made minor annual repairs to Mineral Ridge Dam and the principal spillway such as concrete repairs, painting, caulking, and drain maintenance with in-house forces. Primary spillway repairs were performed in 2011, 2019, and 2020, and a repair to the west dam slip was performed in 2021. There was a gatehouse improvement project in 2009 that was completed in 2011 in conjunction with MVSD's system valve replacement project. Since 1995, MVSD estimates they have spent over six million dollars on improvements and repairs to Mineral Ridge Dam. These past projects are considered typical construction repairs and have no anticipated cumulative impact on the Proposed Action. Besides the Proposed Action, no other future development activities were identified within the project study area. MVSD has no

additional proposed modifications to their property surrounding Mineral Ridge Dam and Meander Creek Reservoir. Post-construction, MVSD will continue routine maintenance of the dam, as needed.

During the land use evaluation, several plans and documents were identified via the Trumbull County Planning Commission website for the region. They include the Farmland Preservation Plan (1999), Trumbull Mahoning Green Pact (date unknown), Citizen Participation Plan (2021b), and a Watershed Balanced Growth Plan for Lower Mosquito Creek (2011).

The Farmland Preservation Plan (1999) aims to preserve both farmland and the agricultural industry while allowing for the orderly development of lands removed from farming in Trumbull County. The Weathersfield Township Zoning Map (**Figure 3.6**) indicates parcels of land immediately downstream of Mineral Ridge Dam, outside of MVSD-zoned land, zoned for agriculture. However, this parcel is currently used as a cemetery and not for typical agriculture purposes. There is no indication on the Weathersfield Township website of a change in parcel land use in the foreseeable future. The Proposed Action would improve flood hazard protection of the downstream areas, including farmland and parcels zoned for agriculture.

The Trumbull Mahoning Green Pact is a list of "common sense steps to accomplish green growth, management, and living for" Trumbull and Mahoning Counties. The Pact does not propose any specific development, but rather commits to enhancing the region through sustainable practices and ideas. The anticipated minor temporary and permanent impacts of the Proposed Action as described in **Chapter 3** will only affect MVSD-utilized land. The project design preserves the natural environment surrounding Mineral Ridge Dam to the extent feasible and does not create a net increase in impervious surface. The Proposed Action does not necessitate the acquisition of land and therefore should have no impact to areas in Trumbull and Mahoning County actively participating in the Green Pact. Therefore, it is not anticipated that the Proposed Action will have a cumulative effect on the goals of the Green Pact.

Trumbull County Planning Commission's Citizen Participation Plan is a required element of the Community Development Block Grant (CDBG) Program as per 24 C.F.R. § 91.115. The CDBG Program Application Instructions for the 2021 physical year (PY2021) were posted via Trumbull County's Participation Plan in March 2021. In the document, Trumbull County detailed instructions and deadlines on applying for the grant and public hearing information.

The potential exists for future CDBG Program development to occur during construction or operation of the Proposed Action. However, most of the potential impacts of the Proposed Action are construction-related and limited to the project's LOD within MVSD-owned land. There are no anticipated adverse cumulative impacts as a result of the Proposed Action to areas who may benefit from the CDBG Program. The effects of the Proposed Action would include benefits of a reduced flood risk to areas potentially benefitting from the CDBG.

The Proposed Action is within the Lower Meander Creek sub-watershed, and together with the Lower Mosquito Creek sub-watershed form the greater Mahoning River Watershed. A watershed growth plan has not been developed for the Lower Meander Creek sub-watershed. A Watershed

Balanced Growth Plan was prepared by the Trumbull County Planning Commission in 2011 for the Lower Mosquito Creek sub-watershed downstream of the project study area and outside the LOD. While not required to adhere to this Growth Plan, the Proposed Action does however mirror some of the Plan's intentions to protect and restore Ohio River watersheds, supporting areas for development and conservation. The rehabilitation of Mineral Ridge Dam will improve its ability to perform operations and maintain a reliable water supply for its community customers while also maintaining its contributions to the Lower Meander Creek sub-watershed and greater watershed systems in the area. Therefore, no cumulative adverse impacts are anticipated.

The Trumbull County Planning Commission was contacted in September 2022 for details on planned development within the immediate project vicinity (one-mile radius). The Plats & Zoning Coordinator for the planning commission indicated that there are no development plans within Trumbull County at this time. A correspondence memo is provided in **Appendix A: Agency Consultation.** Currently there are no other known proposed projects within the immediate vicinity of the Proposed Action. The potential for future development would likely occur after the Proposed Action is implemented, and thus would not be affected by the temporary construction-related impacts of the Proposed Action. The benefits of the Proposed Action would reduce flood risk for the downstream area and maintain current demand of water supply for MVSD's member cities, having no adverse effect on potential future cumulative impacts.

5 PUBLIC PARTICIPATION

This Draft EA is available for agency and public review and comment for a period of 30 days. The public information process includes a public notice with information about the Proposed Action in local newspaper Tribune Chronicle. This Draft EA is available on FEMA's website (https://www.fema.gov/emergency-managers/practitioners/environmental-historic/region/5) and on the MVSD website (https://www.meanderwater.org). A hard copy of this Draft EA will be available for review at:

Weathersfield Township Administration Building
1451 Prospect Street
Mineral Ridge, OH 44440

This EA reflects the evaluation and assessment of FEMA, the federal government decision-maker for the proposed federal action. However, FEMA will take into consideration any substantive comments received during the public review period to inform the final decision regarding grant award and project implementation. The public is invited to submit written comments to FEMA via email to fema-r5-environmental@fema.dhs.gov or via mail to:

Federal Emergency Management Agency, Region 5
c/o Duane Castaldi, Regional Environmental Officer
536 South Clark Street, 6th Floor
Chicago, IL 60605-1521

The public may also submit comments by telephone at 312-408-5549.

If FEMA receives no substantive comments from the public or agency reviewers, this EA will be adopted as Final, and FEMA will issue a Finding of No Significant Impact (FONSI). If FEMA does receive substantive comments, those comments will be evaluated and addressed as part of the FONSI documentation and may consider whether changes to the grant or project implementation are appropriate.

5.1 Subrecipient Outreach

In preparation for the Draft EA, agency consultation was initiated in August 2022. A FEMA-prepared Environmental Assessment Scoping Document and introductory cover letter was sent to federal, state, and local agencies who were deemed to have potential interest in the Proposed Action. The list of consulted agencies and samples of the cover letter and scoping document are provided in **Appendix A: Agency Consultation.** Reviewers had a 30-day period to provide comment on the provided project information. No substantive comments were received from this scoping period.

Public outreach was conducted in several ways prior to the 30-day public comment period of the Draft EA. Notice of this project was provided as part of a disaster cumulative notice within FEMA-4507-DR-OH Public Notice in April 2020, and Ohio Amendment No. 5 to Notice of a Major Disaster Declaration in September 2021. Notice of this project application for the EA was published in the Tribune Chronicle in May 2022 **(Appendix D: Public Notice and Comments).** To date no public comments have been received by FEMA. In addition, local newspaper *The Vindicator* published an online article on May 29, 2022 describing the project context, need, and plans for cost and implementation (The Vindicator, 2022). MVSD did not receive any direct comments regarding the proposed action in response to the article.

6 MITIGATION MEASURES AND PERMITS

6.1 Permits

The Proposed Action would require a number of permits and clearances from local, state, and federal agencies. **Table 6.1** summarizes the necessary permits that have been issued to implement the Proposed Action. Any additional permits or clearances necessary will be obtained by the responsible party prior to construction commencement.

Table 6.1 Permit and Clearance Summary

Issuing Agency	Resource	Permit/Clearance Title	Applicable Regulation/Law	Status
USACE	Wetlands and Waterways	Nationwide Permit 3	Section 404 of CWA	Issued

Issuing Agency	Resource	Permit/Clearance Title	Applicable Regulation/Law	Status
OEPA	Water Quality	Water Quality Certification	Section 401 of CWA	Issued
Trumbull County Planning Commission	Floodplains	Flood Hazard Area Development Permit	Special Purpose Flood Damage Reduction Regulations of Trumbull County	Issued
ODNR Division of Water Resources	Water Resources and Dam Safety	Dam Construction Permit	Ohio Rev. Code 1521.06	Issued
OEPA	Erosion, Sedimentation, and Stormwater	NPDES Construction Site Stormwater General Permit	National Pollutant Discharge Elimination System, Clean Water Act	Issued
Trumbull County Soil and Water Conservation District	Erosion, Sedimentation, and Stormwater	Stormwater Pollution Prevention Plan Review	Trumbull County Erosion and Sediment Control Rules	Issued

6.2 Project Conditions

MVSD is responsible for compliance with federal, state, and local laws and regulations, including obtaining any necessary permits prior to beginning construction activities, and adhering to any conditions laid out in these permits. Any substantive change to the scope of work will require re-evaluation by FEMA for compliance with NEPA and any other laws or EOs. Failure to comply with FEMA grant conditions may jeopardize federal funding.

General Project Conditions

1. MVSD and its contractor(s) are responsible for obtaining and complying with all required local, state, and federal permits and approvals.
2. If deviations from the proposed scope of work result in substantial design changes, the need for additional ground disturbance, additional removal of vegetation, or any other unanticipated changes to the physical environment, the subrecipient must contact FEMA so that the revised project scope can be evaluated for compliance with NEPA and other applicable environmental laws.

The following conditions address mitigation of impacts to ***Water Resources and Water Quality, Wetlands,*** and ***Soils***:

3. MVSD and its contractor(s) will adhere to BMPs and minimization measures set out in the NPDES General Permit, USACE NWP No. 3, and the SWPPP.

Air Quality:

4. In accordance with the SWPPP, the contractor shall monitor and take precautions to control dust and other air pollutants including but not limited to using water or chemicals, limiting vehicles allowed on-site, minimizing the operating speed of vehicles, etc.

Threatened and Endangered Species:

5. Tree cutting will occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches if possible. Orange construction fencing will be placed around protected trees throughout the LOD.
6. No in-water work be performed in perennial streams from March 15 through June 30 to reduce impact to lamprey species
7. Mussels within the salvage area downstream of the dam will be collected and relocated to equivalent or better habitat at least 200m downstream from the LOD.

Noise:

8. Construction activities shall take place during the less noise-sensitive daylight hours.

Hazardous Materials:

9. MVSD and its contractor(s) will manage construction equipment to avoid oil, fuel, or lubricant leaks during equipment use, and will employ BMPs as described in the SWPPP to mitigate potential impacts to hazardous materials.
10. If hazardous source materials are encountered during construction activities for the Proposed Action, the contractor(s) will identify, manage, and dispose of hazardous materials, or other heavily contaminated materials, in accordance with all local, state, and federal regulations. MVSD will be notified if hazardous material or other heavily contaminated material is encountered.
11. Procedures should be in place that address safety, health, and emergency response; environmental protection; contaminated soil excavation; transportation and disposal of hazardous or contaminated material; and contaminated dewatering and drainage. These procedures may be followed in accordance with existing MVSD plans and operations, or shall be developed for this project.

Migratory Birds:

12. Tree and vegetation removal should be avoided during the migratory bird nesting season to the extent practicable. By observing the USFWS tree clearing window for endangered bat species, impacts will be minimized to the greatest extent feasible.

Invasive Species:

13. Graded areas will be revegetated with native grasses and forbs, or native seed mixes.

Safety and Security:

14. To minimize risks to safety and human health, construction activities will be performed using qualified personnel trained to use the required equipment properly.

15. The construction site will be secured from public access.
16. All construction activities will be conducted in accordance with the standards specified in the Occupational Safety and Health Administration (OSHA) regulations.
17. A project Health and Safety Plan will be developed, and its conditions will be adhered to.

Historic, Archeological, Tribal, and Religious Sites:

18. Mortar color, composition, and profile to match existing masonry of gatehouse.
19. All borrow or fill material must come from pre-existing stockpiles or commercially procured material from a pre-existing source. If this is not the case, the subrecipient shall inform FEMA of the fill source so required agency consultations can be completed and FEMA approval will be required prior to beginning ground disturbing activities.
20. MVSD and its contractor(s) will monitor ground disturbance during the construction phase. Should evidence of intact archaeological deposits be identified within the APE during project development, or should evidence of human remains be discovered within the LOD, work in the area of discovery shall cease. The resource should be secured and protected from the elements, and the contractor should immediately notify MVSD who should notify FEMA the discovery. FEMA will reinitiate consultation with SHPO and notify the Delaware Tribe of Indians, Nottawaseppi Huron Band of the Potawatomi Tribe, Seneca Nation of Indians, and Seneca-Cayuga Nation as applicable.

7 CONSULTATIONS AND REFERENCES

7.1 Consultations

The following agencies and Tribal Nations were consulted during the preparation of this EA. Contact information is available in **Appendix A: Agency Consultation.**

Federal, State, and Local Agencies

- United States Department of Agriculture
- United States Fish and Wildlife Service
- United States Army Corps of Engineers
- Ohio State Historic Preservation Office
- Ohio Emergency Management Agency
- Ohio Environmental Protection Agency
- Ohio Public Works Commission
- Ohio Water Development Authority
- Ohio Department of Transportation
- Weathersfield Township
- City of Youngstown
- City of Niles
- Trumbull County
- Mahoning County

Tribal Nations

- Delaware Tribe of Indians
- Nottawaseppi Huron Band of the Potawatomi Tribe
- Seneca Nation of Indians
- Seneca-Cayuga Nation

7.2 References

Agency for Toxic Substances and Disease Registry (ATSDR). 2022. CDC/ATSDR Social Vulnerability Index. Available online at: https://www.atsdr.cdc.gov/placeandhealth/svi/index.html

Appalachian Regional Commission (ARC). 2021. Subregions in Appalachia. Available online at: https://www.arc.gov/map/subregions-in-appalachia/

Cultural Resource Analysts, Inc (CRA). 2018a. Historic Architectural Assessment of the Mineral Ridge Dam. Prepared on behalf of Gannett Fleming, Inc.

_____. 2018b. Phase I Archaeological Survey for the Proposed Mineral Ridge Dam Rehabilitation Project. Prepared on behalf of Gannett Fleming, Inc.

Eastgate Regional Council of Governments (Eastgate). 2016. DRAFT Source Implementation Strategy Plan: Lower Meander Creek HUC 12-050301030703. Available online at https://eastgatecog.org/media/a70522ad-b973-40e5-ae70-1191488b1b54/G2x_MQ/wastewater/nps_is-plan-draft-sd.pdf?download=false.

EnviroScience. 2022. Freshwater Mussel Relocation in Meander Creek for Proposed Repairs and Improvements of the Mineral Ridge Dam, Mineral Ridge, Ohio. Prepared by EnviroScience for Gannett Fleming.

Federal Emergency Management Agency (FEMA). 2022. FEMA Flood Map Service Center. Available online at https://msc.fema.gov/portal/home. Accessed August 2022.

Gannett Fleming. 2011. Dam Breach Analysis and Inundation Report for Mineral Ridge Dam. Prepared on behalf of Mahoning Valley Sanitary District.

_____. 2021. Final Design Report: Application for a Permit to Construct Modification to Mineral Ridge Dam. Prepared on behalf of Mahoning Valley Sanitary District.

Mahoning Valley Sanitary District (MVSD). 2018. Meander Water – Website. Accessed August 2022. https://www.meanderwater.org/

Nelson, C.B., Valachovics, T.R., Angle, M.P., Hardin, K.M., Nash, T.A., Spahr, P.N., Raab, J.M., and Coe, C.J. 2022. Groundwater vulnerability index map of Ohio: Columbus, Ohio Department of Natural Resources, Division of Geological Survey Map GW-2, version 1.0, scale 1:500,000.

Ohio Department of Transportation (ODOT). 2020. "Traffic Monitoring Management System." Accessed August 2022. https://gis.dot.state.oh.us/tims

Ohio Division of Geological Survey (ODGS). 2006. Bedrock geologic map of Ohio: Ohio Department of Natural Resources, Division of Geological Survey Map BG-1, generalized page-size version with text, 2 p., scale 1:2,000,000. [Revised 2017.]

_____. 2022. Ohio Geology Interactive Map. Available online at https://gis.ohiodnr.gov/website/dgs/geologyviewer/#. Accessed August 2022.

Ohio Environmental Protection Agency (OEPA), Air Pollution Control (APC). 2022. "National Ambient Air Quality Standards (NAAQS) - Attainment Status." Available online at https://epa.ohio.gov/divisions-and-offices/air-pollution-control/guides-and-manuals/national-ambient-air-quality-standards-naaqs-attainment-status. Accessed August 2022.

_____. Division of Surface Water (DSW). 2022. Ohio 2022 Integrated Water Quality Monitoring and Assessment Report.

Ohio Game Fishing. 2011. "Free fishing day at Meander Reservoir." Access September 2022. https://www.ohiogamefishing.com/threads/free-fishing-day-at-meander-reservoir.183737/

Trumbull County Planning Commission. 2021a. Website. Accessed August 2022. http://planning.co.trumbull.oh.us/Index.html

_____. 1999. Farmland Preservation Plan. PDF file. Accessed August 2022. http://planning.co.trumbull.oh.us/PDFS/Farmland%20Preservation.pdf

_____. Date unknown. Trumbull Mahoning Green Pact. PDF file. Accessed August 2022. http://planning.co.trumbull.oh.us/Trumbull%20Mahoning%20Green%20Pact.pdf

_____. 2021b. Citizen Participation Plan. PDF File. Accessed August 2022. http://planning.co.trumbull.oh.us/PDFS/Citizen%20Participation%20Policy%202021.pdf

_____. 2011. Watershed Balanced Growth Plan for Lower Mosquito Creek. PDF file. Accessed August 2022. http://planning.co.trumbull.oh.us/_Final%20WBGP%202011.pdf

U.S. Census Bureau. 2020. Website. Accessed August 2022. https://data.census.gov/cedsci/table?y=2020

U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS). 2019 Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/. Accessed August 2022.

U.S. Environmental Protection Agency (EPA). 2019. Sole Source Aquifer Mapper. Accessed August 2022. https://www.epa.gov/dwssa/map-sole-source-aquifer-locations

_____. 2021. NEPAssist Website. Accessed September 2022. https://www.epa.gov/nepa/nepassist

_____. 2022. Sole Source Aquifer Interactive Map. Available online at https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b. Accessed August 2022.

U.S. Fish and Wildlife Service (USFWS). 2019. Coastal Barrier Resources System Mapper. Accessed September 2022. https://fwsprimary.wim.usgs.gov/CBRSMapper-v2/

_____. 2022. National Wetlands Inventory Wetlands Mapper. Available online at http://www.fws.gov/wetlands/Data/mapper.html. Accessed August 2022.

U.S. Geological Survey (USGS). 2018. Long-Term National Seismic Hazard Map. Accessed August 2022. https://www.usgs.gov/media/images/2018-long-term-national-seismic-hazard-map

_____. 2019. USGS National Land Cover Dataset 2019. Accessed August 2022. https://www.mrlc.gov/viewer/

_____. Topographic Map 7.5' Quadrangle, Warren and Mahoning, OH.

The Vindicator. May 29, 2022. Website. Accessed August 2022. https://www.vindy.com/news/local-news/2022/05/45-million-upgrade-to-valley-water-supplier-ready-to-run/

Weathersfield Township. 2022. Website. Accessed August 2022. https://weathersfieldtwp.org/

8 LIST OF PREPARERS

Federal Emergency Management Agency (FEMA) and Ohio Emergency Management Agency (OEMA)

Reviewers	Experience and Expertise	Role in Preparation
Duane Castaldi	Regional Environmental Officer	FEMA Project Monitor
Karen Poulson	Environmental Protection Specialist	FEMA Project Monitor
Maureen Cunningham	Regional Legal Counsel	FEMA Legal Review
Andrew Davis	Grants Management Specialist	FEMA Project Monitor
Steve Ferryman, CFM	Mitigation Branch Chief	OEMA Project Monitor
Dan Blanchard	Hazard Mitigation Consultant	OEMA Project Monitor

Subrecipient: Mahoning Valley Sanitary District (MVSD)

Preparers	Experience and Expertise	Role in Preparation
Michael McNinch, P.E.	Chief Engineer	Subrecipient
Thomas Holloway, P.E.	Plant Operations Manager	Subrecipient
Kedar Bhide	Project Manager	Subrecipient

Gannett Fleming, Inc.

Preparers	Experience and Expertise	Role in Preparation
Steven Smith	Senior Environmental Scientist	Project Manager
Tim Johnston, P.E.	Senior Project Engineer	Alternatives Analysis
Amanda Hess, P.E.	Senior Project Engineer	Floodplain Analysis
Katherine Sharpe, AICP	Senior Environmental Economist	Task Leader for Economics
Tamara Pearl	Environmental Scientist	Task Leader for Hazardous Materials and Socioeconomics
Clayton Frey	Environmental Scientist	Task Leader for Natural Resources
Eric Fromherz, P.E.	Project Engineer	Alternatives Analysis
Kayla Briggs	GIS Analyst	NEPA Documentation
Scott Duncanson	Senior Environmental Planner	Quality Assurance/Quality Control

Appendix A – Agency Consultation

Federal, State, and Local Agencies

Local Organizations

Dave Rouan
Administrator
Weathersfield Township

Chief John Hickey
Director
Trumbull County

Chuck Shasho
Deputy Director of Public Works
City of Youngstown

Andrew R. Frost III
Director of Emergency Management Agency
Mahoning County

Steven Mientkiewicz
Mayor
City of Niles

Michael D. McNinch, P.E.
Chief Engineer
The Mahoning Valley Sanitary District / Meander Water

State Agencies

Sima Merick
Executive Director
Ohio Emergency Management Agency

Ken J. Heigel, P.E.
Executive Director
Ohio Water Development Authority

Kurt Princic
Chief
Ohio Environmental Protection Agency

Burt Logan / Megan Wood
Executive Director & CEO
Ohio State Historic Preservation Office

Linda S. Bailiff
Director
Ohio Public Works Commission

Amanda Schraner Terrel
Division Director and Deputy State Historic Pres
Ohio State Historic Preservation Office

Mary Mertz
Director
Ohio Department of Natural Resources

Gery Noirot, P.E.
Deputy Director
Department of Transportation

Federal Agencies

Duane Castaldi
Regional Environmental Officer
Federal Emergency Management Agency (FEMA)

Patrice Ashfield
Field Office Supervisor
U.S. Fish and Wildlife Service

Kenneth Westlake
EPA

Tyler J. Bintrim
Chief, North Branch
U.S. Army Corps of Engineers

Kara MacDowell
District Conservationist
U.S. Department of Agriculture

Matthew C. Gilbert
U.S. Army Corps of Engineers

MAILING ADDRESS:
P.O. Box 4119
Youngstown, OH 44515-0119

SHIPPING ADDRESS:
1181 Ohltown-McDonald Road
Mineral Ridge, Ohio 44440

TELEPHONE: (330) 652-3614 * (330) 799-6315 * FAX (330) 652-9869

STATE OF OHIO
THE MAHONING VALLEY SANITARY DISTRICT

August 24, 2022

Sima Merick, Executive Director
Ohio Emergency Management Agency
2855 West Dublin-Granville Road
Columbus, OH 43235-2712

Re: Mineral Ridge Dam Rehabilitation, Environmental Assessment
Weathersfield Township, Trumbull County, Ohio
41.153333, -80.779167
FEMA Project ID: DR-4507-OH

Dear Ms. Merick:

The Mahoning Valley Sanitary District (MVSD) is preparing an Environmental Assessment (EA) to consider benefits and potential environmental impacts related to the proposed rehabilitation of Mineral Ridge Dam at Meander Creek Reservoir in Trumbull County, Ohio. The Ohio Emergency Management Agency and MVSD have requested funding from the Federal Emergency Management Agency (FEMA) to support the subject Hazard Mitigation Grant Program (HMGP) project. The objectives of FEMA's HMGP Program are to aid eligible state, territory, and local governments, along with federally recognized tribal governments, in the implementation of sustained post-disaster natural hazard mitigation activities.

The enclosed scoping document sets forth the draft purpose and need as well as areas of environmental review and study associated with the proposed project. The information is provided here in accord with the Council on Environmental Quality's regulations for complying with the National Environmental Policy Act to advise agencies of MVSD's intent to prepare an Environmental Assessment for this project, note areas of expected environmental concern, and solicit any early comment regarding the project.

MVSD looks forward to any comments you may have on this project as we prepare the Environmental Assessment. Please see Section 5 of the enclosed scoping document for further details on how to provide a response by September 26, 2022. If you have questions, please contact me at michael.mcninch@meanderwater.oh.gov.

Sincerely,

Michael D. McNinch, P.E.
Chief Engineer

Enclosure: Environmental Assessment (EA) Scoping Document
Sent by email to: ohioema@dps.ohio.gov

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605-1521

FEMA

August 17, 2022

Environmental Assessment Scoping Document

SECTION ONE: BACKGROUND

1.1 Project Information:

Project ID:	FEMA-DR-4507-OH Advanced Assistance Project
Recipient:	Ohio Emergency Management Agency
Subrecipient:	Mahoning Valley Sanitary District (MVSD)
Title:	Mineral Ridge Dam Rehabilitation Environmental Assessment
Address:	Impounds Meander Creek Reservoir
Locality:	Weathersfield Township, Trumbull County, Ohio
GPS:	41.153333, -80.779167
PLSS:	T3N R3W

1.2 Purpose and Need:

The objective of the HMGP is to provide the opportunity to take critical mitigation measures following a disaster to reduce the risk of loss of life and property from future disasters. The purpose of the proposed action is to continue providing a safe and reliable water supply source to MVSD's community customers and to maintain the public health and safety of the downstream population. MVSD utilizes the Meander Creek Reservoir, Mineral Ridge Dam, and their downstream water treatment plant to furnish water to two member cities of Youngstown and Niles, and to the Village of McDonald as agent of these member cities. These entities then supply water to the surrounding metropolitan area including Girard, Canfield, Mineral Ridge, the Village of Lordstown, Craig Beach, and portions of ten townships in Trumbull and Mahoning Counties. The population served is approximately 220,000.

Mineral Ridge Dam is classified as a Class I structure by the Ohio Department of Natural Resources (ODNR). This high-hazard classification indicates that a failure of the dam would result in the probable loss of human life. Construction of the 90-year-old dam was completed in 1932, and major modifications and repairs were made to the dam in 1995.

In 2014, MVSD requested that Gannett Fleming, Inc. perform a comprehensive assessment of the dam to determine if it meets current dam safety design requirements, and to develop needed repairs. Gannett Fleming inspected Mineral Ridge Dam and its appurtenances, reviewed associated documentation, and prepared detailed studies and analyses to evaluate the dam for potential failure modes. Gannett Fleming's assessment of the dam identified deficiencies related to deterioration of the structure over time, deficiencies related to more conservative dam design criteria, increased hydraulic and

seismic loads relative to when the dam was designed, and deficiencies related to potential failure modes not previously identified.

Rehabilitation of the Mineral Ridge Dam is needed to address potential failure modes identified at the dam, bring the facility into compliance with current ODNR and federal dam safety criteria, and address necessary upgrades and repairs. The project anticipates a useful life of at least 50 years with scheduled maintenance.

SECTION TWO: ALTERNATIVE ANALYSIS

NEPA requires FEMA to evaluate alternatives to the proposed project and describe the environmental impacts of each alternative. NEPA also requires an evaluation of the No Action alternative, which is the future condition without the project. This section describes the No Action alternative, the Proposed Action, and reviews the alternatives that were previously considered but dismissed.

A potential failures modes (PFMs) analysis for Mineral Ridge Dam was performed by Gannett Fleming which identified PFMs for the structure under existing conditions, assessed factors that contribute to the credibility of each PFM, and identified remediation features to address the PFMs. As a result of the PFM analysis and subsequent investigations, it was determined that multiple features at the dam do not meet current dam safety criteria to continue providing a safe and reliable water supply source and maintain the safety of the downstream population. Additionally, the existing structure does not meet the requirements of the state dam safety regulator, ODNR Division of Water Resources.

Five major PFMs were identified at the high hazard potential Mineral Ridge Dam by Gannett Fleming in 2016:

1. Principal Spillway - Failure by sliding at the bottom of the concrete cutoff during extreme events due to low rock strength, ineffective foundation drains, and relatively flat bedrock bedding;

2. Existing Twin Auxiliary/Emergency Spillways - Failure by surface erosion and breaching due to high velocities in the vegetated and riprapped portions of the discharge channel;

3. Dam Embankment - Failure by uncontrolled seepage and internal erosion due to the absence of an internal drainage system, high pore pressures measured in downstream embankment, and dispersive soils identified during testing;

4. Top of Dam – Failure by seepage, surface erosion and downstream slope instability due to a seepage window between the concrete curb at top of dam and concrete core wall, and the absence of an internal drainage system in the embankment; and

5. Inadequate Spillway Capacity (Marginal) – Failure by overtopping and surface erosion of the earth embankment due to inadequate spillway capacity during the Probable Maximum Flood and a low area present at the east abutment.

The above PFMs along with other dam safety deficiencies and remediation solutions developed by Gannett Fleming were reviewed by an Independent Technical Review Panel (TRP) convened by the MVSD in 2017. The TRP concluded that major and permanent

remedial efforts would be required to bring dam components into compliance with contemporary standards.

Alternatives analyses were performed during conceptual-level investigations to develop and screen rehabilitation alternatives for Mineral Ridge Dam. A total of nine conceptual dam modification alternatives were developed to address the known PFMs and bring the dam into compliance with current dam safety standards. Based on discussions with MVSD, two of the nine alternatives were not considered to be feasible from a water supply standpoint due to the significant lowering of pool level that would be required during construction and/or during flood events. The remaining seven alternatives shared common rehabilitation features, including: maintaining the normal pool level; increasing the top of dam; stabilizing the principal spillway; flattening the downstream embankment; rehabilitating two access roads, redirecting surface runoff, and repairs to the gate house. A comparison of the seven feasible alternatives and their varying key features was performed to determine a preferred alternative in consideration of project cost, schedule, and meeting project purpose and need. The preferred alternative is described herein as the Proposed Action.

2.1 Alternative 1 –No Action Alternative

The No Action Alternative is used as a baseline for comparison to estimate the benefits and impacts presented in the Proposed Action Alternative. Under the No Action Alternative, the existing Mineral Ridge Dam would not be modified and would remain in its current state. Considering the dam safety deficiencies identified at the dam, this alternative would result in an unacceptable risk to public health and safety of the downstream population and reliability of the water supply storage for communities in Youngstown, Niles, and McDonald.

2.2 Alternative 2—Proposed Action

The proposed action consists of the implementation of a dam rehabilitation project to address dam safety deficiencies identified at Mineral Ridge Dam, bring the facility into compliance with current ODNR and federal dam safety criteria, and address needed upgrades and repairs. The major components of the dam rehabilitation project are listed below.

Abandon the existing twin auxiliary spillways and replace with a new roller-compacted concrete (RCC) auxiliary spillway, grass-lined channel, and riprap lined channel.

Extend the existing embankment concrete core wall up to Elevation 918.0 feet, which is approximately 0.3 feet above the computed Probable Maximum Flood spillway design flood peak reservoir level, and modify the top of dam roadway.

Flatten the downstream embankment slope from 2.0 Horizontal to 1.0 Vertical (2H:1V) to between 2.5H:1V and 3H:1V to improve stability, and install internal filter drains to safely collect and convey potential seepage.

Modify and repair the principal (or primary) spillway, including raising and buttressing the existing training walls with new reinforced concrete walls to accommodate the flattened embankment slopes, lining the ogee surface and stilling basin with a new reinforced concrete liner slab, installing rock anchors in the stilling basin slab to improve stability and concrete surface repairs.

Install post-tensioned anchors into the dam's foundation to improve the stability of the principal spillway concrete ogee structure and the gate house structure.

Replace the existing inflatable rubber dam and controls at the principal spillway.

Replace the stairway on the east embankment slope.

Remove the existing spoil pile to improve surface drainage adjacent to the downstream toe of the east embankment slope.

Upgrade dam-related instrumentation, electrical and lighting systems on the gatehouse and road.

Improve the existing east and west access roads leading to the dam.

Re-grade the low area at the east abutment of the dam to eliminate the area of overtopping during the Probable Maximum Flood.

Install temporary erosion and sediment controls, diversion of water and excavation dewatering features to facilitate rehabilitation construction.

The fixed crest elevation of the ogee spillway, the fully inflated crest elevation and the auto deflation elevation of the replacement inflatable rubber dam, the crest elevation of the ungated auxiliary spillway, the peak 100-year reservoir level and 100-year outflow, and the peak Probable Maximum Flood reservoir level would be unchanged from existing conditions under the proposed alternative.

Value engineering and independent peer review was performed during the design process to minimize construction costs, verify constructability, and minimize impacts to environmental and cultural resources.

2.3 Alternatives Considered and Eliminated from Further Analysis

As described in Section 2.1, the alternatives analyzed shared several common features. This resulted in similar overall environmental impacts at Mineral Ridge Dam, since these impacts are in project areas that require rehabilitation and modification to improve the safety and reliability of the dam. Due to their similarities, alternatives were further considered and eliminated based on key variations to the principal spillway and new auxiliary spillway. The overall least cost alternative for the project included replacing the existing bladder on the existing principal spillway crest and not changing the fixed crest elevation or the normal pool elevation.

Principal Spillway Alternatives Not Selected

Principal spillway alternatives that were considered but not selected included lowering the fixed crest elevation and eliminating the inflatable rubber bladder and raising the fixed crest elevation.

In addition to increasing overall dam modification alternative cost, removal of the inflatable rubber bladder and permanently raising the crest was not selected because it would result in raising of the normal pool and need for a larger auxiliary spillway structure.

Lowering of the fixed principal spillway crest and installation of large gates at the principal spillway was considered in an effort to eliminate the need for an auxiliary spillway. This principal alternative was eliminated due to the potential for loss of significant water supply storage during gate activation and did not offer a reduction in overall dam modification alternative cost.

New Auxiliary Spillway Alternatives

Each of the auxiliary spillway alternatives that were considered included a downstream RCC drop structure. Seven of the auxiliary spillway alternatives included removal of the existing twin auxiliary spillways and two included modifying the existing auxiliary spillways to augment the discharge capacity of the new auxiliary spillway. Modifying the existing twin auxiliary spillways was eliminated due to seepage, uplift, and erosion concerns that were identified during the PFM analysis of the existing structure, and which could not be addressed or corrected in a cost-effective manner.

Three alternatives that included a new labyrinth-type conventional concrete spillway with articulated concrete block (ACB) armored downstream channels were considered but not selected due to higher overall construction costs relative to the selected alternative. The higher construction costs were primarily associated with foundation constraints and relatively large amount of conventional concrete required for construction of the labyrinth.

One alternative that included replacing the existing twin auxiliary spillways with new twin conventional concrete broad-crested weir spillways with an ACB-armored downstream channel was considered but not selected due to higher overall construction costs relative to the selected alternative.

Three alternatives included a new, stepped RCC control structure. The RCC control structure was determined as the most feasible alternative due to overall construction cost and elimination of foundation concerns. The RCC control structure was optimized during design to consist of a conventional concrete ogee-crested weir with an RCC chute, training walls, and stilling basin, and downstream riprap apron. The stilling basin invert elevation was lowered to eliminate the downstream steep channel slope and to allow for energy dissipation to occur in the stilling basin prior to entering the grass-lined/riprap-lined channel. Lowering of the stilling basin resulted in elimination of a downstream RCC drop structure.

Dam Decommissioning

Decommissioning (removal) of the dam was not considered to be a technically feasible alternative. Removal of the dam would result in permanent draining of the reservoir, which would eliminate the hazard to downstream population. However, this alternative would also result in the permanent loss of critical water supply storage benefitting downstream communities and the loss of potential flood protection benefits.

SECTION THREE: AFFECTED ENVIRONMENT

The proposed project impounds Meander Creek Reservoir along Meander Creek within Weathersfield Township, Trumbull County, Ohio. The portion of Mineral Ridge Dam where the proposed project would occur is in an environment of both natural areas and maintained infrastructure including the creek and reservoir.

Alternative 2 the proposed action proposes to rehabilitate Mineral Ridge Dam located on Meander Creek in Weathersfield Township, Trumbull County, Ohio. Major project features include permanently flattening the embankment slopes, repairs to the principal spillway, and replacement of the auxiliary spillway along with a temporary stream crossing of Meander Creek. This dam rehabilitation project will have temporary stream impacts of 0.923 acres. It will also include littoral impacts to Meander Creek Reservoir; permanent impacts total 0.446 acres and temporary impacts total 0.673 acres. Additional impacts to wetlands are expected with approximately 0.398 acres of permanent impact and 0.018 acres of temporary impacts. Dewatering will occur approximately 150 feet downstream of the principal spillway. This area will be used as a temporary crossing during construction activities and returned to existing grade upon completion of all activities. Impacted streams and wetlands will be protected with proper erosion and sediment control measures.

Exhibit 1: General Project Location Aerial

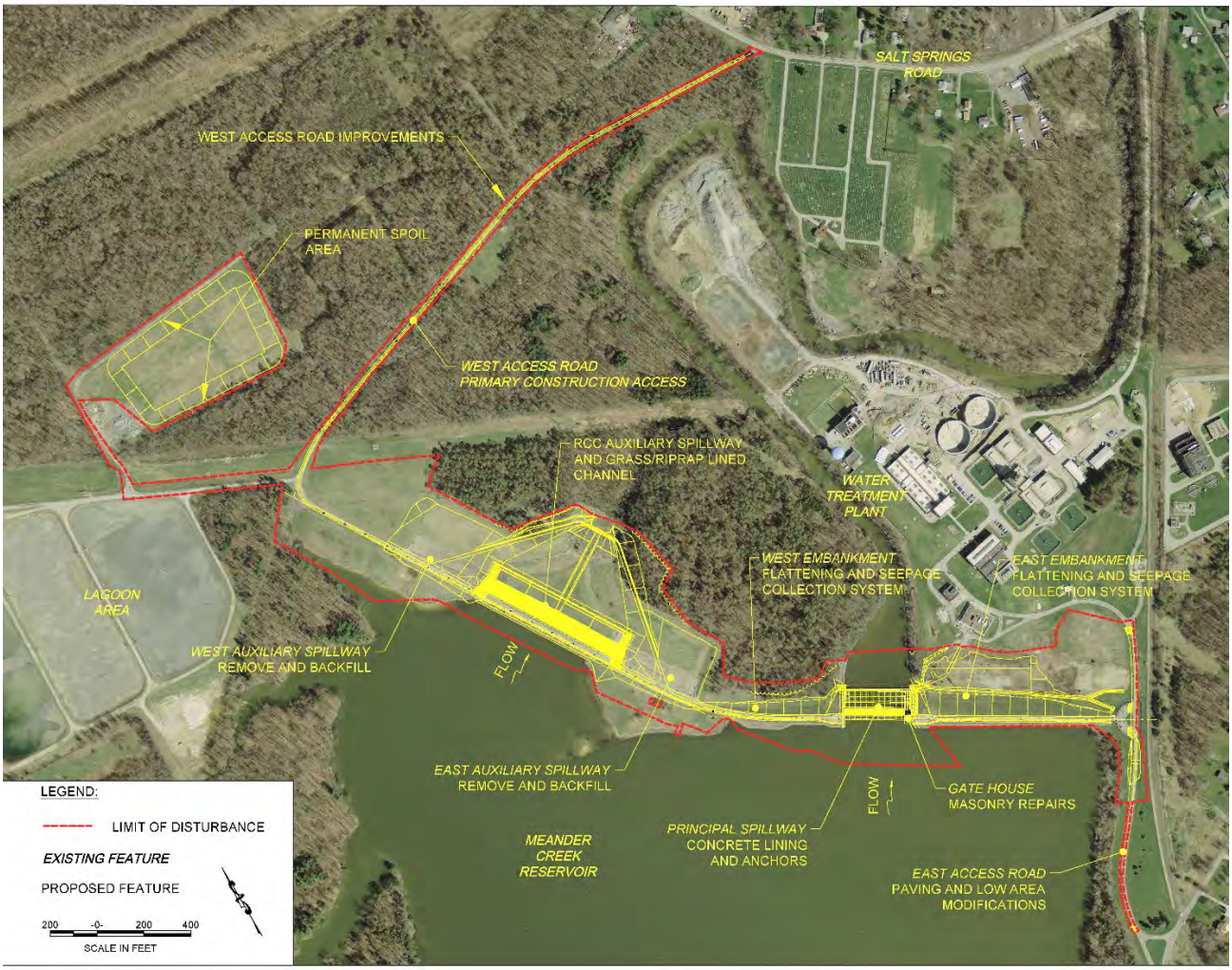
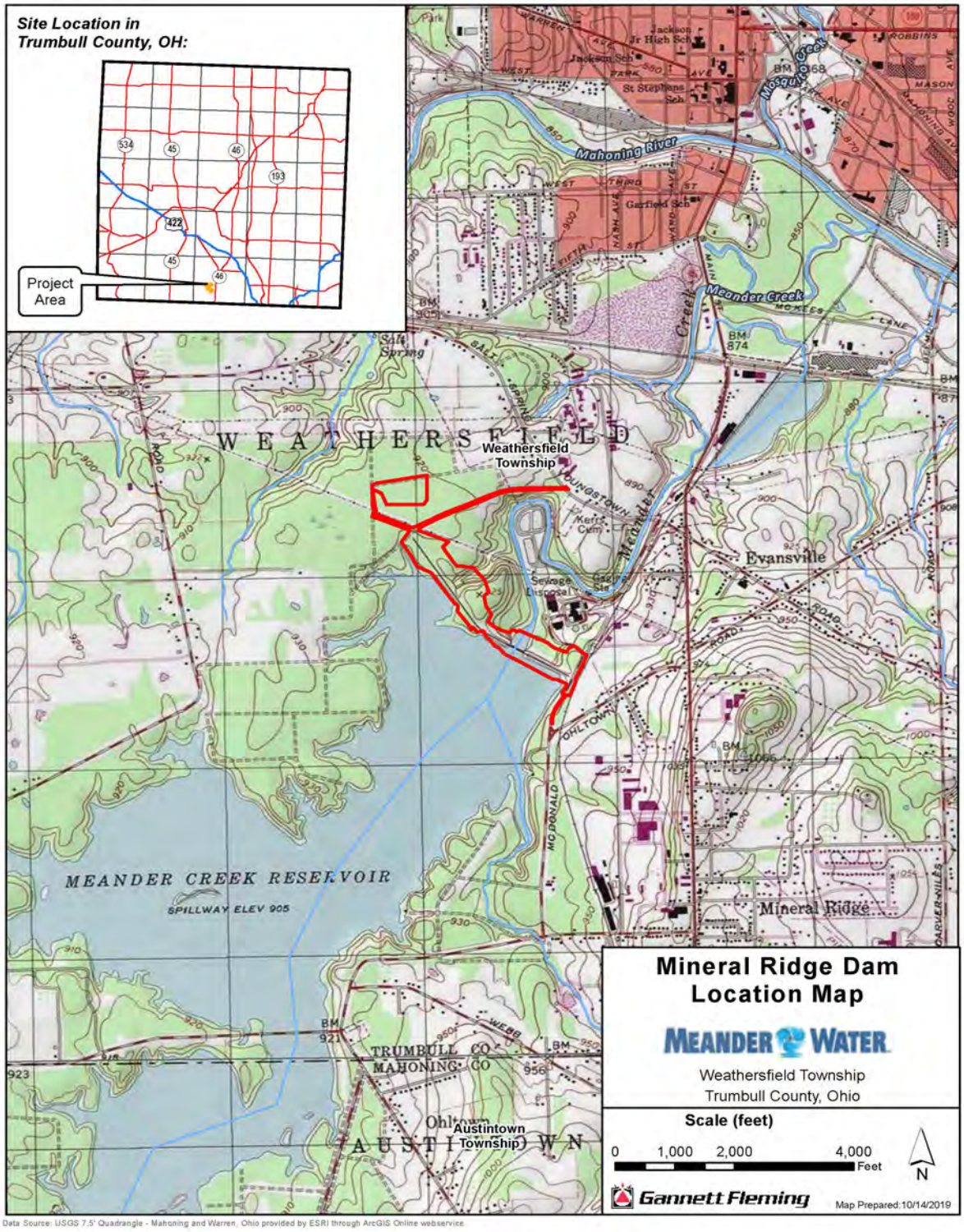


Exhibit 2: Specific Area of Potential Effect Project Location Topographic Map



3.1 Preliminary Screening of Assessment Categories:

The alternatives listed above are likely to result in impacts governed by the federal laws and executive orders listed below. Checked items will require closer coordination with the appropriate agencies to identify and mitigate potentially significant impacts.

- ☒ Clean Water Act (CWA)
- ☐ Clean Air Act (CAA)
- ☐ Coastal Barrier Resources Act (CBRA)
- ☐ Coastal Zone Management Act (CZMA)
- ☒ Endangered Species Act (ESA)
- ☒ Executive Order 11988 – Floodplains
- ☒ Executive Order 11990 – Wetlands
- ☒ Executive Order 12898 – Environmental Justice for Low Income & Minority Populations
- ☐ Executive Order 13112 – Invasive Species
- ☐ Farmland Protection Policy Act (FPPA)
- ☒ Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments
- ☐ Migratory Bird Treaty Act (MBTA)
- ☒ National Historic Preservation Act (NHPA)

3.2 Reasonably Foreseeable Future Actions

At this time, there are no reasonably foreseeable future actions to Mineral Ridge Dam, along Meander Creek or Meander Creek Reservoir.

SECTION FOUR: REFERENCES

Gannett Fleming, Inc. Mineral Ridge Dam Weathersfield Township, Trumbull County, Ohio Preliminary Analysis and Evaluation Report NID ID No. OH-00337. March 2016.

Mineral Ridge Dam, OH, Technical Review Panel Meeting, December 18-20, 2017-TRP Report #01.

SECTION FIVE: AGENCY CONSULTATION

The Tribal Nations and Agencies listed below have been provided a copy of this document or will be notified of this project through FEMA Region 5 Standard consultation procedures as directed under individual Environmental laws and Executive Orders. Other State and Local Agencies and interested parties including local officials and organizations not listed below will also be provided with this scoping document.

Delaware Tribe of Indians

Seneca Nation of Indians

Seneca – Cayuga Nation

Nottawaseppi Huron Band of the Potawatomi

Ohio Historic Preservation Office

US Fish and Wildlife Service, Ohio Field Office

US Army Corps of Engineers, Pittsburgh District

US Environmental Protection Agency, Region 5

Ohio Environmental Protection Agency

Ohio Department of Natural Resources

SECTION SIX: FEMA CONTACT INFORMATION

Anyone interested in providing comment on this document may respond as noted below before September 26, 2022. Be sure to provide your name and contact information along with your comments.

Respond by Mail:

Federal Emergency Management Agency, Region 5

c/o Duane Castaldi, Regional Environmental Officer

536 South Clark Street, 6th Floor

Chicago, IL 60605-1521

Respond by Email:

Send comments to fema-r5-environmental@fema.dhs.gov.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

August 31, 2022

Project Code: 2022-0067505

Dear Mr. Castaldi:

The U.S. Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse effects to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

The Service has reviewed your project description and concurs with your determination that the project, as proposed, is not likely to adversely affect the federally endangered Indiana bat (*Myotis sodalis*) or threatened northern long-eared bat (*Myotis septentrionalis*). This is based on the commitment to cut all trees ≥3 inches diameter at breast height only between October 1 and March 31 in order to avoid adverse effects to the Indiana bat and northern long-eared bat.

This concludes consultation on this action as required by section 7(a)(2) of the ESA. Should, during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be reinitiated to assess whether the determinations are still valid.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Patrice Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Eileen Wyza, ODNR-DOW

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605-1521

FEMA

August 30, 2022

Angela Boyer
Endangered Species Coordinator, Ohio Ecological Services Office
U.S. Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, OH 43230

Re: TAILS# 03E15000-2019-TA-0301 / Project Code: 2022-0067505 –
FEMA-DR-4507-OH Advanced Assistance
Mineral Ridge Dam, Weathersfield Township, Trumbull County
41.153333, -80.779167, T3N, R3W

Dear Ms. Boyer:

Pursuant to Section 7 of the Endangered Species Act, I am writing this letter is to initiate and conclude informal consultation between the Federal Emergency Management Agency (FEMA) and your office regarding the captioned project under FEMA's Hazard Mitigation Grant Program.

FEMA has carefully reviewed your agency's Information for Planning and Consultation (IPaC) online tool for a list of species and critical habitat that may be present within the action area. FEMA concludes this project is not likely to adversely affect the northern long-eared and Indiana bats. FEMA is determining "no effect" for the eastern massasauga. The official species list is attached, along with documentation supporting FEMA's conclusions. FEMA requests concurrence with this determination and any additional input from your office. Please send your response or any questions to Karen Poulson of my staff at fema-r5-environmental@fema.dhs.gov or 312-408-5549.

Sincerely,

Duane Castaldi
Regional Environmental Officer
FEMA Region 5

Enclosures

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605-1521

FEMA

August 30, 2022

Mineral Ridge Dam Rehabilitation
, Weathersfield Township, Trumbull County
FEMA-DR-4507-OH Advanced Assistance
41.153333, -80.779167

Project Description:

The proposed action consists of the implementation of a dam rehabilitation project to address dam safety deficiencies identified at Mineral Ridge Dam, bring the facility into compliance with current ODNR and federal dam safety criteria, and address needed upgrades and repairs. The major components of the dam rehabilitation project are listed below.

Abandon the existing twin auxiliary spillways and replace with a new roller-compacted concrete (RCC) auxiliary spillway, grass-lined channel, and riprap lined channel.

Extend the existing embankment concrete core wall up to Elevation 918.0 feet, which is approximately 0.3 feet above the computed Probable Maximum Flood spillway design flood peak reservoir level, and modify the top of dam roadway.

Flatten the downstream embankment slope from 2.0 Horizontal to 1.0 Vertical (2H:1V) to between 2.5H:1V and 3H:1V to improve stability, and install internal filter drains to safely collect and convey potential seepage.

Modify and repair the principal (or primary) spillway, including raising and buttressing the existing training walls with new reinforced concrete walls to accommodate the flattened embankment slopes, lining the ogee surface and stilling basin with a new reinforced concrete liner slab, installing rock anchors in the stilling basin slab to improve stability and concrete surface repairs.

Install post-tensioned anchors into the dam's foundation to improve the stability of the principal spillway concrete ogee structure and the gate house structure.

Replace the existing inflatable rubber dam and controls at the principal spillway.
Replace the stairway on the east embankment slope.

Remove the existing spoil pile to improve surface drainage adjacent to the downstream toe of the east embankment slope.

Upgrade dam-related instrumentation, electrical and lighting systems on the gatehouse and road.
Improve the existing east and west access roads leading to the dam.

Re-grade the low area at the east abutment of the dam to eliminate the area of overtopping during the Probable Maximum Flood.

Install temporary erosion and sediment controls, diversion of water and excavation dewatering features to facilitate rehabilitation construction.

The fixed crest elevation of the ogee spillway, the fully inflated crest elevation and the auto deflation elevation of the replacement inflatable rubber dam, the crest elevation of the ungated auxiliary spillway, the peak 100-year reservoir level and 100-year outflow, and the peak Probable Maximum Flood reservoir level would be unchanged from existing conditions under the proposed alternative.

May Affect, Not Likely to Adversely Affect (MANLAA) Determinations:

Species	*Status and Support for Determination of May Affect*
Northern Long-Eared Bat (T) and Indiana bat (E*)*	*Species Characteristics:* In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags 3 inches or greater diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines. *Support for MANLAA Determination:* This project may affect but is not likely to affect the northern long-eared bat (T) and Indiana bat (E); therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. No caves or abandoned mines will be disturbed. Removal of trees 3 inches or greater dbh cannot be avoided. Therefore, removal of any trees 3 inches or greater dbh will only occur between October 1 and March 31. FEMA finds that due to the reasons listed above, this project may affect but is not likely to affect the Indiana and northern long-eared bat. [See attached documentation].

No Effect Determinations:

Species	*Status and Support for Determination of No Effect*
Eastern massasauga (T*)*	***Status:*** The eastern massasauga (Sisturus catenatus) is a small, gray or light brown rattlesnake historically found from New York and southern Ontario to southcentral Illinois and eastern Iowa (USFWS 2016). This species still occupies the same range but due to severe habitat loss and eradication during the 19th and 20th centuries, only small, isolated populations remain. The USFWS Species Status Assessment estimates the historic range contained 558 populations while in 2016 there were only 347 populations presumed extant (Clemency et al. 2016). Eastern massasaugas are in decline and were listed as threatened in 2016. Critical habitat has not been designated for this species. The eastern massasauga rattlesnake (EMR) is distributed throughout the south and southwestern counties of Wisconsin. They are active in the spring, summer, and fall months, occupying a variety of wetland habitats including bogs, fens, shrub swamps, wet meadows, marshes, moist grasslands, wet prairies, and floodplain forests (USFWS 2016). They will shift the habitats they use, depending on the season. Generally, they use wetlands in the spring and fall, and in summer, snakes migrate to drier, upland sites, ranging from forest openings to fields, agricultural lands, and prairies. They mainly feed on small mammals such as voles, moles, jumping mice, and shrews. They may also eat other snake species and occasionally birds and frogs. EMR require habitat for basking but also seek vegetative cover for retreat from the sun. Low-canopy herbaceous vegetation is especially important to EMR. In the winter, EMR hibernate in low wet areas including crayfish burrows, rocky crevices, rodent holes, rotten logs, and tree and shrub root systems (Clemency et al. 2016). The presence of a water table near the surface is an important factor for choosing suitable hibernacula. The EMR is known to breed in the spring with females giving birth in late summer. Rather than laying eggs as some snake species do, the female massasauga holds the babies inside their body for a period of about three and a half months before giving birth to live young. The young snakes remain near their mother for just a few days after birth and then disperse. The EMR can be out of the hibernacula from approximately March to November in the southern part of their range and April to October in the middle and northern parts of the range (Clemency et al. 2016). Soil temperature may be used as a predicator of whether or not a snake may be out of its hibernaculum. Habitat fragmentation is one of the biggest threats to EMR and occurs when development such as roads, towns, or agricultural fields separate small isolated populations from breeding. EMR relies on wetlands for

shelter and food and loss of such habitat is detrimental to their survival. Other threats may include exotic species invasion, dam construction, fire suppression, water level manipulation, and other incompatible habitat modification.

The EMR can be out of the hibernacula from approximately March to November in the southern part of their range and April to October in the middle and northern parts of the range (Clemency et al. 2016). Soil temperature may be used as a predicator of whether or not a snake may be out of its hibernaculum.

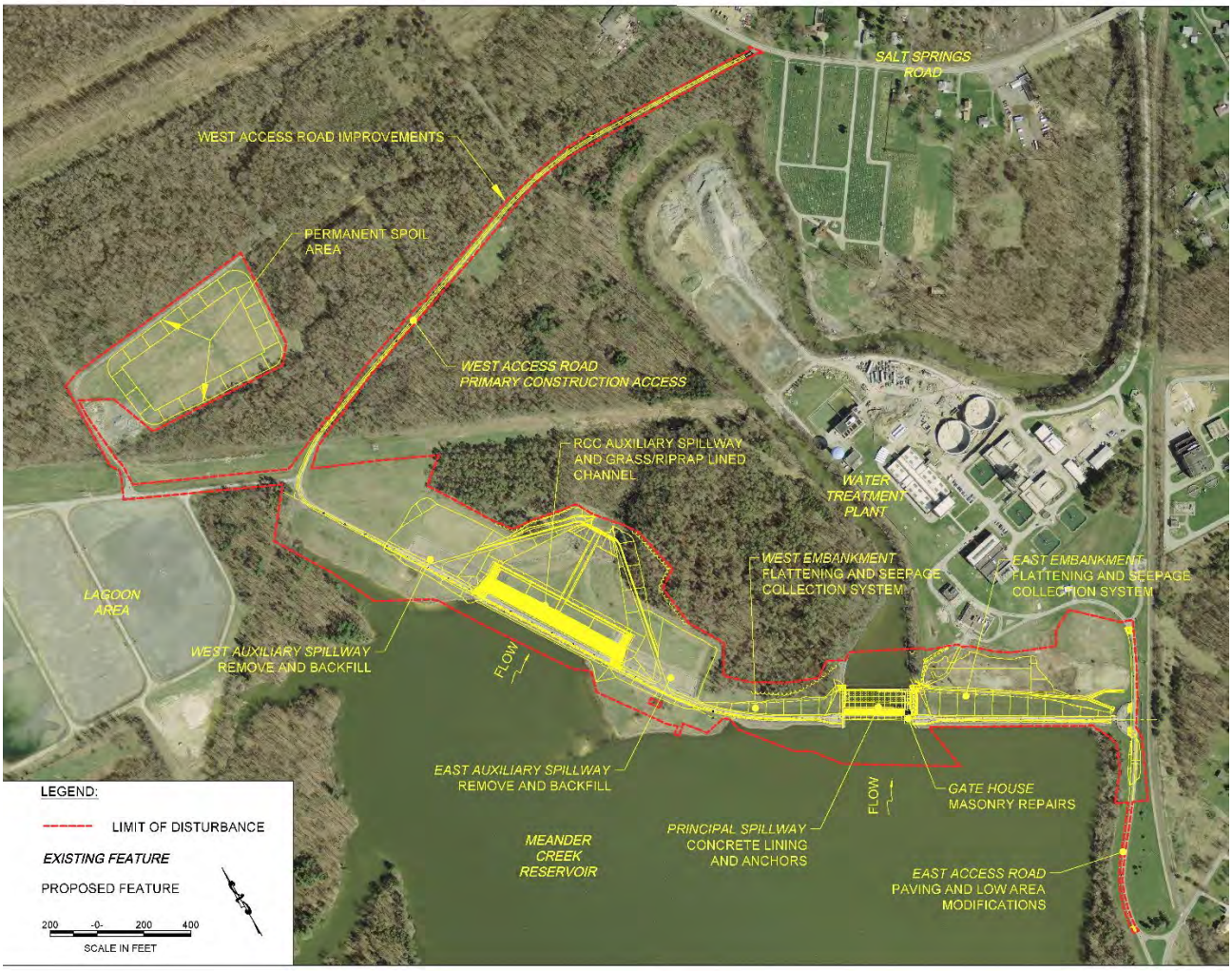
Habitat fragmentation is one of the biggest threats to EMR and occurs when development such as roads, towns, or agricultural fields separate small isolated populations from breeding. EMR relies on wetlands for shelter and food and loss of such habitat is detrimental to their survival. Other threats may include exotic species invasion, dam construction, fire suppression, water level manipulation, and other incompatible habitat modification.

Support for No Effect Determination

Technical assistance received from the U.S. Fish and Wildlife office on August 20, 2019 indicates the project site does not contain suitable habitat; therefore, actions detailed in this project will have no effect to the Eastern massasauga. [See attached documentation]

Maps and Photos

USGS National Map, accessed 09/01/2022



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To:
Project Code: 2022-0067505
Project Name: Mineral Ridge Dam

July 26, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

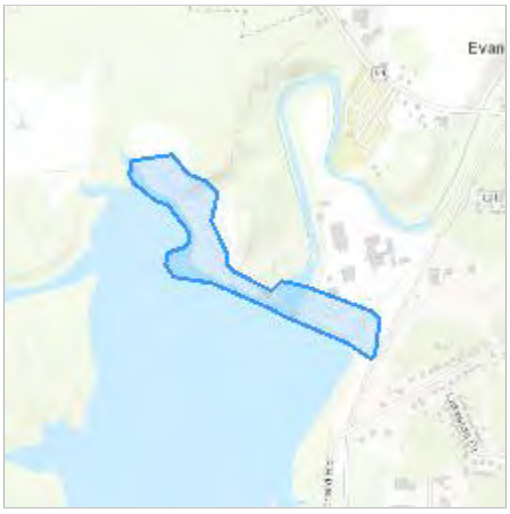
This species list is provided by:

Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
(614) 416-8993

Project Summary

Project Code: 2022-0067505
Project Name: Mineral Ridge Dam
Project Type: Dam - Maintenance/Modification
Project Description: Mineral Ridge Dam Rehabilitation
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.1550702,-80.78278628935686,14z



Counties: Trumbull County, Ohio

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Incidental take of the northern long-eared bat is not prohibited at this location. Federal action agencies may conclude consultation using the streamlined process described at https://www.fws.gov/midwest/endangered/mammals/nleb/s7.html Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Department of Homeland Security
Name: Karen Poulson
Address: 536 S. Clark Street, 6th Floor
City: Chicago
State: IL
Zip: 60605
Email karen.poulson@fema.dhs.gov
Phone: 7328047365

From: Boyer, Angela
To: Smith, Steven C.
Cc: patrice_ashfield@fws.gov; ohio@fws.gov; Reardon, Nathan; Parsons, Kate; Arnold, Jillian N.
Subject: Re: [EXTERNAL] TAILS# 03E15000-2019-TA-0301
Date: Tuesday, August 20, 2019 8:11:35 AM

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994

TAILS# 03E15000-2019-TA-0301

Dear Ms. Arnold:

This letter supersedes the letter we provided to you on July 1, 2019 regarding the Mineral Ridge Dam Rehabilitation Project. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags =3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns,

bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

Should the proposed site contain trees =3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees =3 inches dbh cannot be avoided, we recommend that removal of any trees =3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Since there is a federal nexus for the project through the U.S. Army Corps of Engineers (Corps), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the Corps, is completed. We recommend that the Corps submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Patrice Ashfield
Field Office Supervisor

On Tue, Aug 20, 2019 at 7:49 AM Smith, Steven C. <scsmith@gfnet.com> wrote:

> Thank you Angela,
>
> Yes, please provide an updated letter. We will need to show that the USFWS has been satisfied as part of the permit application submission for the dam rehabilitation project. Thanks again. I appreciate your quick response to this issue.
>
> Have a great day.
>
> Steve
>
> **Steven C. Smith** | Environmental Scientist and Permit Coordinator
>
> **Gannett Fleming, Inc.** | 207 Senate Avenue, Camp Hill, PA 17011
>
> **t** 717.763.7212 x2693 | **c** 717.418.6544 | scsmith@gfnet.com
>
> ***Excellence Delivered As Promised***
>
> **Gannett Fleming is ISO 9001:2008 Certified.**
>
> www.**gannettfleming**.com | Stay connected: *Twitter* | *Facebook* | *LinkedIn* | *YouTube*
>
> **From:** Boyer, Angela <angela_boyer@fws.gov>
> **Sent:** Tuesday, August 20, 2019 7:43 AM
> **To:** Smith, Steven C. <scsmith@GFNET.com>
> **Cc:** patrice_ashfield@fws.gov; ohio@fws.gov; Reardon, Nathan <nathan.reardon@dnr.state.oh.us>; Parsons, Kate <kate.parsons@dnr.state.oh.us>
> **Subject:** Re: [EXTERNAL] TAILS# 03E15000-2019-TA-0301

Hello Steve,

Thank you for contacting us for clarification regarding the eastern massasauga for the Mineral Ridge Dam Rehabilitation Project. I have reviewed the project information you provided. Based on this information, the Service agrees with ODNR's assessment that it is very unlikely that there would be any massasauga habitat in the project area. Therefore, the Service is no longer recommending a habitat assessment. Please let me know if you would like us to provide you with an updated technical assistance letter for this project.

Sincerely,

Angela Boyer

U.S. Fish and Wildlife Service

4625 Morse Road, Suite 104

Columbus, Ohio 43230

(614) 416-8993, ext. 22

angela_boyer@fws.gov

On Mon, Aug 19, 2019 at 3:28 PM Smith, Steven C. <scsmith@gfnet.com> wrote:

> Good afternoon,
>
> Following receipt of the attached USFWS response from 7-1-2019 identifying a need for an eastern massasauga habitat survey and a letter from ODNR dated July 29, 2019 stating that the project was not likely to impact the same species, we are looking for some guidance on if the survey is needed or not. We reached out to a herpetologist at EnviroScience Inc. to request a price to perform the survey. They responded that upon review of the location of the project and aerial imagery of the project area, it was very unlikely that there would be any massasuaga habitat. Since the snake is state endangered and federally threatened, and there are conflicting determinations regarding the need for a survey, we just want to confirm that USFWS will be requiring a habitat survey for this species.
>
> I have attached both response letters and the location maps for your review.

Thank you all for your assistance and guidance in this matter.

Regards,

Steve

Steven C. Smith | Environmental Scientist and Permit Coordinator

Gannett Fleming, Inc. | 207 Senate Avenue, Camp Hill, PA 17011

t 717.763.7212 x2693 | **c** 717.418.6544 | scsmith@gfnet.com

Excellence Delivered As Promised

Gannett Fleming is ISO 9001:2008 Certified.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

April 9, 2018

Mr. Stanley Swierz
Consulting Forester, Inc.
453 Blenheim Rd.
Columbus, OH 43214

TAILS : 03E15000-2013-TA-0763

Dear Mr. Swierz:

This letter is in response to your March 17, 2018 letter requesting information on the presence of a bald eagle (*Haliaeetus leucocephalus*) nest near a proposed timber harvest at the Mahoning Valley Sanitary District, in Jackson Township, Mahoning County, Ohio. As described in your letter, in previous years prior to timber harvesting you have coordinated with the U.S. Fish and Wildlife Service regarding the proximity of the proposed harvest relative to an active bald eagle nest. There is no Federal nexus for this project, rather you are contacting us proactively to ensure no impacts on bald eagles occur.

BALD EAGLE COMMENTS: The project lies within the range of the **bald eagle** (*Haliaeetus leucocephalus*). Bald eagles are protected under the Migratory Bird Treaty Act (16 U.S.C. 703-712; MBTA), and are afforded additional legal protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, BGEPA). The BGEPA prohibits, among other things, the killing and disturbance of eagles. To evaluate your project's potential to affect bald eagles, please visit: http://www.fws.gov/midwest/MidwestBird/EaglePermits/baeatake/index.html.

We have reviewed the map you provided for the 2018 timber harvest to be conducted on 45.5 acres within parcels 42, 44, and 46. Stand 44 is the closest to the eagle nest—approximately 1/3 mile at the closest point. Because no activities are proposed within 660 feet of the nest tree, these activities are unlikely to result in take of bald eagles that nest at this location. Our database of nest locations may not be complete because new nests are built each year. Therefore, we recommend that the site be evaluated to determine if any additional eagle nests are present and to validate the actual nest location. If any new nests are observed or if the existing nest has moved we recommend you coordinate with this office further.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats

such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

Should the proposed site contain trees ≥3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend that removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present. Your letter indicates that you intend to implement seasonal tree clearing. Thus, take of Indiana bats and northern long-eared bats is unlikely to occur.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Dan Everson
Supervisor

Cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

Stanley D. Swierz
CONSULTING FORESTER, INC.

453 Blenheim Road
Columbus, Ohio 43214
614.262.1501 | 614.262.1564 fax
sds@swierzforestry.com

Certified Forester
Timber Estimates
Timber Sales
Boundary Line Marking
Timber Appraisals
Timber Management

March 17 2018

Megan Seymour
Wildlife Biologist
U.S. Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, OH 43230

Dear Ms. Seymour:

Regarding the selective harvest of timber from the Mahoning Valley Sanitary District property located in Mahoning and Trumbull Counties Ohio:

Thank you for taking the time to talk with me last Tuesday morning. As we had previously discussed, and what I stated in prior years correspondence to you, the District was created by an act of the State Legislature in 1927, with the majority of the acreage being acquired the following year for the purpose of providing drinking water to the cities of Youngstown, Niles, and other area communities. It consists of approximately 5,570 total acres with the reservoir accounting for about 2,167 acres. The woodland acres including both coniferous and deciduous trees, is estimated to be 3,172.5. Approximately 230.5 acres are estimated to be in grass, brush, buildings, plant facilities, dam, sludge ponds, and inaccessible areas.

A total of 27 annual selective hardwood timber sales were sold and harvested from 1986 through December, 2017, excepting several years when market conditions were adverse. All timber harvest activity for the last five years was restricted within the time frame of October 1 through March 31. I was contracted by the District to manage each of these sales. Through the years when these timber sales and harvests occurred, an active bald eagle nest was present for much of the time. As I had in the past, last year I contacted you for guidance on this matter so as not to create a disturbance for the birds.

In February of this year, the District authorized me once again to proceed with another selective sale of hardwood timber. This is proposed to take place on approximately 45.5 total acres in forest stands 42, 44 and 46 for which I have enclosed copies of a topographic map and aerial photograph. These are all located in Jackson Township, Mahoning County Ohio. The last known location of the bald eagle nest is in stand 36, which is shown on the same enclosed aerial and topographic maps.

The District and I are not aware that the nest has moved since 2009, and that it is in the location shown on the enclosed maps. The nest location is approximately 2,300 feet northeast of the northeast corner of Stand 44 of the proposed timber sale and harvest location.

As I did last year, I am requesting in writing as to, what, if any restrictions may apply to proceeding with the proposed 2018 selective sale and harvest of hardwood timber relating to the bald eagle nesting activities. In addition, can you inform me if there are any known bat hibernacula or roosting trees in this part of Mahoning County that would affect the proposed hardwood timber sale and harvest.

All timber harvest activities will be restricted to the period October 1 through March 31.

Last year's correspondence dated May 17, 2016 from your office to me, signed by Dan Everson., Supervisor was satisfactory for our purposes. For your information the TAILS number was 03E15000-2013-TA-0763 for this document.

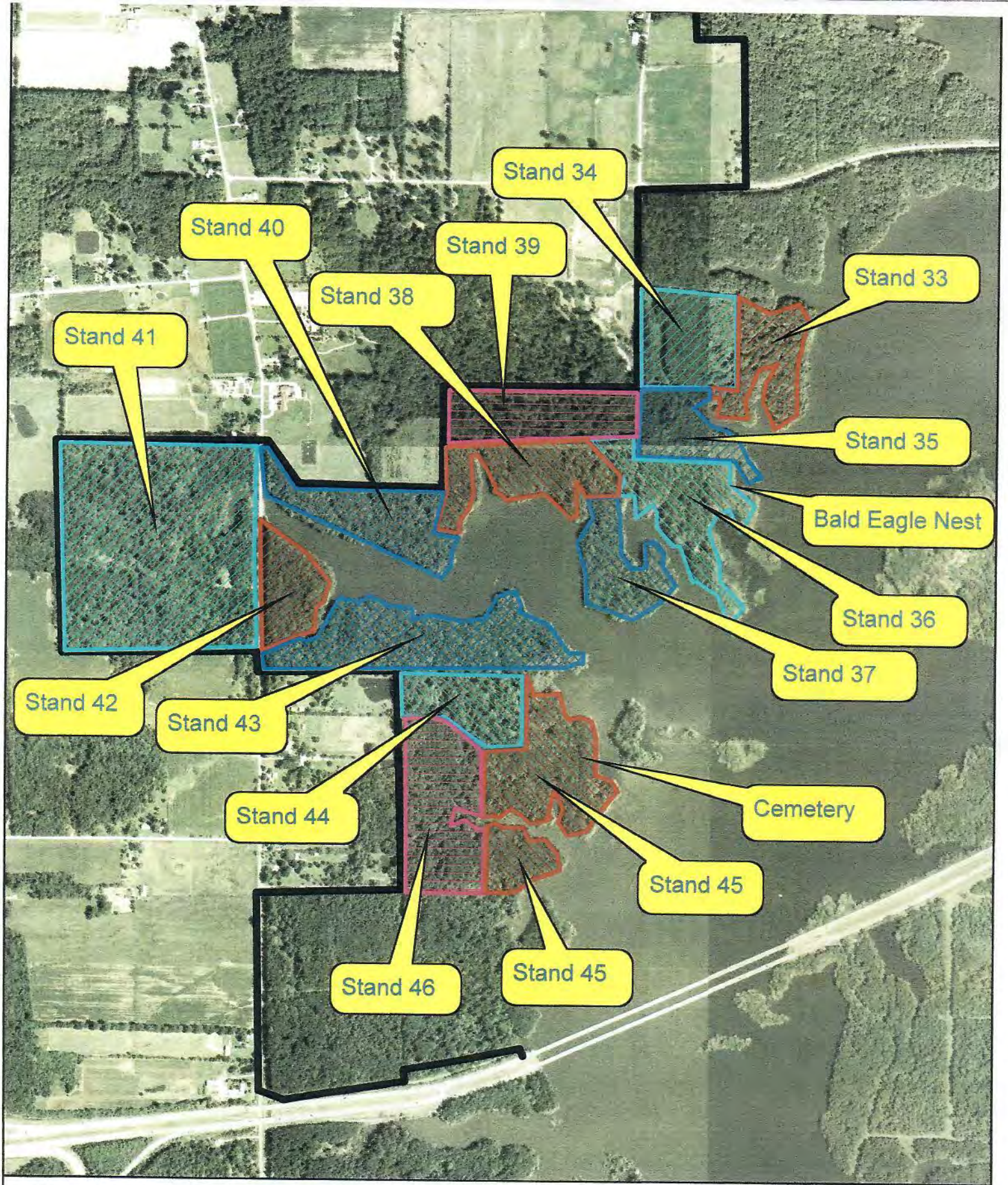
Please note that the GPS coordinates shown on the enclosed maps are for the center of each map.

I look forward to your reply. Feel free to contact me with any questions, or if you require additional information. An original of this letter and attached maps will also be sent by regular mail.

Regards,

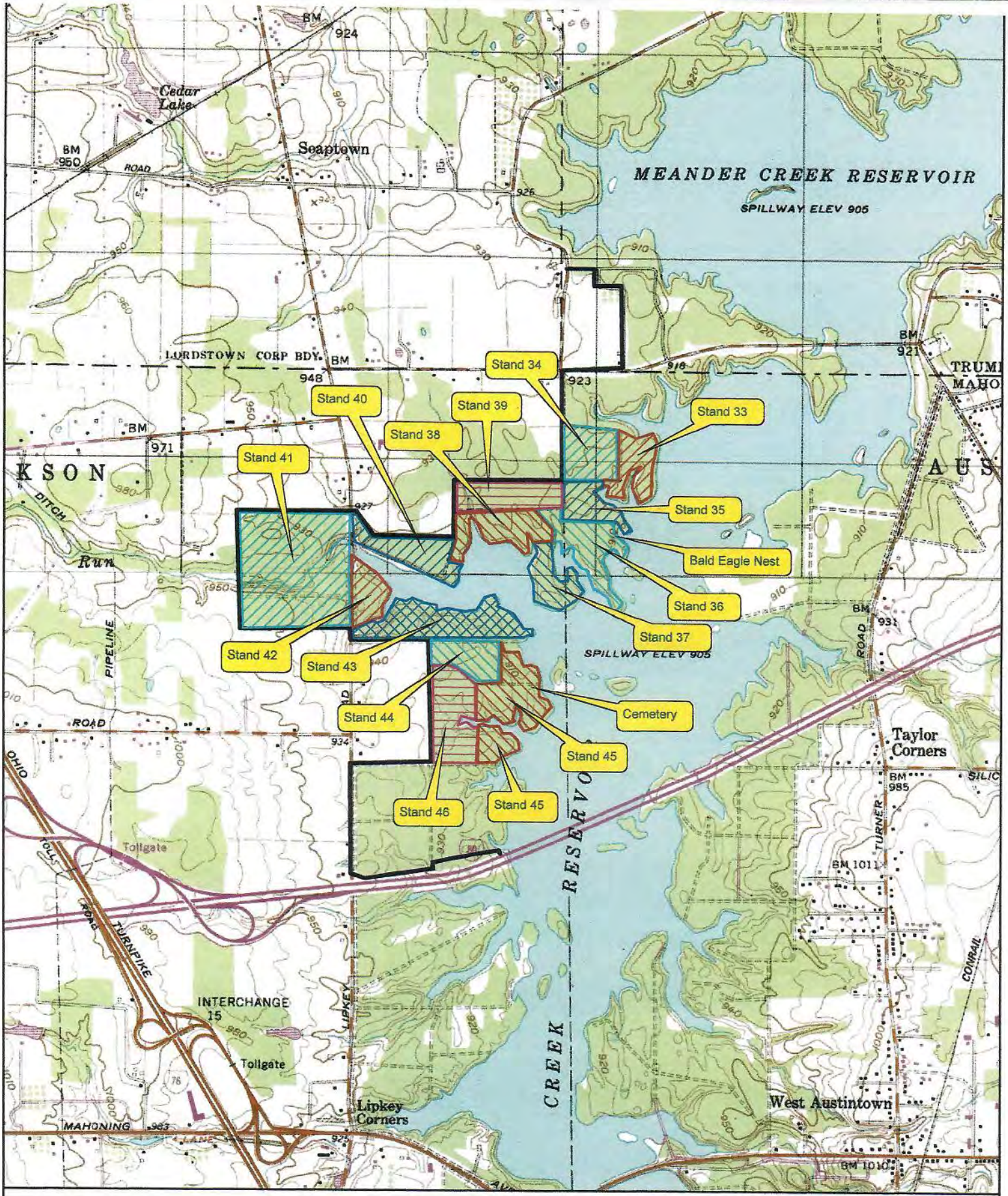
Stanley D. Swierz

SDS
Encls.
cc: Ramesh Kashinkunti, M.V.S.D.
Alan Tatalovich, M.V.S.D.
Jonathan Jamison, M.V.S.D.
Brenda Duffett, M.V.S.D.



Name: WARREN SW, OH
Date: 9/6/2009
Scale: 1 inch equals 1111 feet

Location: 041° 07' 26.68" N 080° 48' 56.57" W NAD27
Caption: MVSD Stands 33 through 46



Name: WARREN
Date: 8/24/2009
Scale: 1 inch equals 2000 feet

Location: 041° 07' 26.41" N 080° 48' 53.18" W NAD27
Caption: MVSD Stands 33 through 46

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605-1521

FEMA

September 23, 2022

Diana Welling, Department Head
Resource Protection and Review
Ohio State Historic Preservation Office
Ohio History Connection
800 E. 17th Avenue
Columbus, OH 43221

Re: Mineral Ridge Dam Rehabilitation
Weathersfield Township, Trumbull County
FEMA 4507.31 Advanced Assistance
41.15353, -80.77934
SHPO 2018-TRU-43565

Dear Ms. Welling:

Pursuant to the Section 106 of the National Historic Preservation Act, I am writing this letter to initiate and conclude consultation regarding the captioned Hazard Mitigation Grant Program project.

In accordance with 36 CFR §800.11, I am enclosing documentation regarding this undertaking and its effect on historic properties. This documentation provides the justification for FEMA's finding no adverse effects on historic properties with conditions; the purpose of this communication is to seek concurrence in that finding.

Pursuant to 36 CFR 800.5(c)(1), if we receive no response from your office within thirty (30) days, we will consider the lack of response agreement with FEMA's finding and will move forward with this undertaking.] Because our reliance on digital communications must continue until our offices reopen, we would appreciate a response by email from your office. For your convenience, we have included a response area below. If you have questions, do not hesitate to contact Karen Poulson of my staff at 312-408-5549 or at fema-r5-environmental@fema.dhs.gov.

Sincerely,

Duane Castaldi
Regional Environmental Officer
FEMA Region 5

enclosures

++++++++*You may email this page to fema-r5-environmental@fema.dhs.gov* ++++++++

Re: Mineral Ridge Dam Rehabilitation
Weathersfield Township, Trumbull County
FEMA 4507.31 Advanced Assistance
41.15353, -80.77934
SHPO 2018-TRU-43565

☒ Under the authority of the National Historic Preservation Act of 1966, as amended, the Ohio State Historic Preservation Office ***concurs*** with FEMA's finding that the captioned undertaking will result in ***no adverse effects on historic properties with conditions.***

☐ Under the authority of the National Historic Preservation Act of 1966, as amended, the Ohio State Historic Preservation Office ***objects*** to FEMA's finding that the captioned undertaking will result in ***no adverse effects on historic properties with conditions*** for the reasons noted below:

Nathan J Young — 10/11/2022

Ohio State Historic Preservation Office — Date

Comments:

OHIO HISTORIC PRESERVATION OFFICE:
RESOURCE PROTECTION AND REVIEW

Section 106 Review - Project Summary Form

For projects requiring a license from the Federal Communications Commission, please use FCC Forms 620 or 621. DO NOT USE THIS FORM.

SECTION 1: GENERAL PROJECT INFORMATION

All contact information provided must include the name, address and phone number of the person listed. Email addresses should also be included, if available. Please refer to the Instructions or contact an OHPO reviewer (mailto:Section106@ohiohistory.org) if you need help completing this Form. Unless otherwise requested, we will contact the person submitting this Form with questions or comments about this project.

Date: 09/23/2022

Name/Affiliation of person submitting form: Duane Castaldi

Mailing Address:536 South Clark Street 6th Floor, Chicago, IL 60605

Phone/Fax/Email: 312-408-5549

A. Project Info:

1. This Form provides information about:
   New Project Submittal:
   YES NO

   Additional information relating to previously submitted project:
   X YES NO

   OHPO/RPR Serial Number from previous submission:
   SHPO 2018-TRU-43565

2. Project Name (if applicable):
   Mineral Ridge Dam Rehabilitation

3. Internal tracking or reference number used by Federal Agency, consultant, and/or applicant to identify this project (if applicable):
   4507.31 Advanced Assistance

B. Project Address or vicinity:
Vicinity of Mahoning Valley Sanitary District Water Treatment Plant

C. City/Township:
Weathersfield Township

D. County:
Trumbull County

E. Federal Agency and Agency Contact. *If you do not know the federal agency involved in your project, please contact the party asking you to apply for Section 106 Review, not OHPO, for this information*. *HUD Entitlement Communities acting under delegated environmental review authority should list their own contact information.*
Same as above

F. Type of Federal Assistance. *List all known federal sources of federal funding, approvals, and permits to avoid repeated reviews.*
FEMA

G. State Agency and Contact Person (if applicable):

H. Type of State Assistance:

I. Is this project being submitted at the direction of a state agency **solely** under Ohio Revised Code 149.53 or at the direction of a State Agency? *Answering yes to this question means that you are sure that no federal funding, permits or approvals will be used for any part of your project, and that you are seeking comments only under ORC 149.53.*

YES X NO

J. Public Involvement- Describe how the public has been/will be informed about this project and its potential to affect historic properties. Please summarize how they will have an opportunity to provide comments about any effects to historic properties. (This step is required for all projects under 36 CFR § 800.2):
See attachments

K. Please list other consulting parties that you have contacted/will contact about this project, such as Indian Tribes, Certified Local Governments, local officials, property owners, or preservation groups. (See 36 CFR § 800.2 for more information about involving other consulting parties). Please summarize how they will have an opportunity to provide comments:
See attachments

SECTION 2: PROJECT DESCRIPTION AND AREA OF POTENTIAL EFFECTS (APE)

Provide a description of your project, its site, and geographical information. You will also describe your project's Area of Potential Effects (APE). Please refer to the Instructions or contact an OHPO reviewer if you need help with developing the APE or completing this form.

For challenging projects, provide as much information as possible in all sections, and then check the box in Section 5.A. to ask OHPO to offer preliminary comments or make recommendations about how to proceed with your project consultation. This is recommended if your project involves effects to significant historic properties or if there may be challenging procedural issues related to your project. Please note that providing information to complete all Sections will still be required and that asking OHPO for preliminary comments may tend to delay completion of the review process for some projects.

A. Does this project involve any Ground-Disturbing activity: X YES NO
(If **Yes**, you must complete all of Section 2.A. If **No**, proceed directly to Section 2. B.)

1. General description of width, length and depth of proposed ground disturbing activity:
   See attachments

2. Narrative description of previous land use and past ground disturbances, if known:
   See attachments

3. Narrative description of current land use and conditions:
   See attachments

4. Does the landowner know of any archaeological resources found on the property?
   YES NO If yes, please describe:
   See attachments

B. Submit the exact project site location on a USGS 7.5-minute topographic quadrangle map for all projects. Map sections, photocopies of map sections, and online versions of USGS maps are acceptable as long as the location is clearly marked. Show the project's Area of Potential Effects (APE). It should be clearly distinguished from other features shown on the map:
   1. USGS Quad Map Name:
      Warren, OH 2019
   2. Township/City/Village Name:
      Weathersfield Township

C. Provide a street-level map indicating the location of the project site; road names must be identified and legible. Your map must show the exact location of the boundaries for the project site. Show the project's Area of Potential Effects (APE). It should be clearly distinguished from other features shown on the map:

D. Provide a verbal description of the APE, including a discussion of how the APE will include areas with the potential for direct and indirect effects from the project. Explain the steps taken to identify the project's APE, and your justification for the specific boundaries chosen:
   See attachments

E. Provide a detailed description of the project. This is a critical part of your submission. Your description should be prepared for a cold reader who may not be an expert in this type of project. The information provided must help support your analysis of effects to historic properties, not other types of project impacts. Do not simply include copies of environmental documents or other types of specialized project reports. If there are multiple project alternatives, you should include information about all alternatives that are still under active consideration:
   See attachments

SECTION 3: IDENTIFICATION OF HISTORIC PROPERTIES

Describe whether there are historic properties located within your project APE. To make that determination, use information generated from your own Background Research and Field Survey. Then choose one of the following options to report your findings. Please refer to the Instructions and/or contact an OHPO reviewer if you are unsure about how to identify historic properties for your project.

If you read the Instructions and you're still confused as to which reporting option best fits your project, or you are not sure if your project needs a survey, you may choose to skip this section, but provide as much supporting documentation as possible in all other Sections, then check the box in Section 5.A. to request preliminary comments from OHPO. After reviewing the information provided, OHPO will then offer comments as to which reporting option is best suited to document historic properties for your project. Please note that providing information to complete this Section will still be required and that asking OHPO for preliminary comments may tend to delay completion of the review process for some projects.

Recording the Results of Background Research and Field Survey:

A. **Summary of discussions and/or consultation with OHPO** about this project that demonstrates how the Agency Official and OHPO have agreed that no Field Survey was necessary for this project (typically due to extreme ground disturbance or other special circumstances). Please **attach copies** of emails/correspondence that document this agreement. You must explain how the project's potential to affect both archaeological and historic resources were considered.

B. **A table that includes the minimum information** listed in the OHPO Section 106 Documentation Table (which is generally equivalent to the information found on an inventory form). This information must be printed and mailed with the Project Summary Form. To provide sufficient information to complete this Section, you must also include summary observations from your field survey, background research and eligibility determinations for each property that was evaluated in the project APE.

C. **OHI (Ohio Historic Inventory) or OAI (Ohio Archaeological Inventory) forms**- New or updated inventory forms may be prepared using the OHI pdf form with data population capabilities, the Internet IForm, or typed on archival quality inventory forms. To provide sufficient information to complete this Section, you must include summary observations from your field survey and background research. You must also include eligibility determinations for each property that was evaluated in the project APE

D. **A historic or archaeological survey report** prepared by a qualified consultant that meets professional standards. The survey report should meet the Secretary of the Interior's Standards and Guidelines for Identification and OHPO Archaeological Guidelines. You may also include new inventory forms with your survey, or update previous inventory forms. To complete this section, your survey report must include summary observations from your field survey, background research and eligibility determinations for each property that was evaluated within the APE.

E. **Project Findings**. Based on the conclusions you reached in completing Section 3, please choose one finding for your project. There are (mark one):

X Historic Properties Present in the APE:

No Historic Properties Present in the APE:

SECTION 4: SUPPORTING DOCUMENTATION

This information must be provided for all projects.

A. Photographs must be keyed to a street-level map, and should be included as attachments to this application. Please label all forms, tables and CDs with the date of your submission and project name, as identified in Section 1. You must present enough documentation to clearly show existing conditions at your project site and convey details about the buildings, structures or sites that are described in your submission. Faxed or photocopied photographs are not acceptable. See Instructions for more info about photo submissions or 36 CFR § 800.11 for federal documentation standards.
    1. Provide photos of the entire project site and take photos to/from historic properties from/towards your project site to support your determination of effect in Section 5.
    2. Provide current photos of all buildings/structures/sites described.
B. Project plan, specifications, site drawings and any other media presentation that conveys detailed information about your project and its potential to affect historic properties.
C. Copies or summaries of any comments provided by consulting parties or the public.

SECTION 5: DETERMINATION OF EFFECT

A. **Request Preliminary Comments.** For challenging projects, provide as much information as possible in previous sections and ask OHPO to offer preliminary comments or make recommendations about how to proceed with your project consultation. This is recommended if your project involves effects to significant historic properties, if the public has concerns about your project's potential to affect historic properties, or if there may be challenging procedural issues related to your project. Please be aware that providing information in all Sections will still be required and that asking OHPO for preliminary comments may tend to delay completion of the review process for some projects.

    1. We request preliminary comments from OHPO about this project:
       YES NO

    2. Please specify as clearly as possible the particular issues that you would like OHPO to examine for your project (for example- help with developing an APE, addressing the concerns of consulting parties, survey methodology, etc.):

B. **Determination of Effect.** If you believe that you have gathered enough information to conclude the Section 106 process, you may be ready to make a determination of effect and ask OHPO for concurrence, while considering public comments. Please select and mark one of the following determinations, then explain the basis for your decision on an attached sheet of paper:

    No historic properties will be affected based on 36 CFR § 800.4(d) (1). Please explain how you made this determination:

    X No Adverse Effect [36 CFR § 800.5(b)] on historic properties. This finding cannot be used if there are no historic properties present in your project

APE. Please explain why the Criteria of Adverse Effect, [36 CFR Part 800.5(a) (1)], were found not to be applicable for your project:

Adverse Effect [36 CFR § 800.5(d) (2)] on historic properties. Please explain why the criteria of adverse effect, [36 CFR Part 800.5(a) (1)], were found to be applicable to your project. You may also include an explanation of how these adverse effects might be avoided, reduced or mitigated:

Please send completed form and supporting documentation to our office through the section106@ohiohistory.org e-mail address. Note that file size is limited to 30 MB. The Ohio SHPO has a federally mandated review time of 30 calendar day. To check your submission was received and logged in for our review, please visit https://www.ohiohistory.org/preserve/state-historic-preservation-office/hpreviews/section-106-project-status.

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605-1521

FEMA

September 23, 2022

Documentation Continuing and Concluding Section 106 Consultation for a FEMA-Funded Undertaking

Project Information:

Project ID: HMGP 4507.31 / SHPO 2018-TRU-43565
Title: Mineral Ridge Dam Rehabilitation
Location: Weathersfield Township, Trumbull County
GPS: 41.15353, -80.77934
PLSS: N/A

Background and Scope Change:

In December of 2018, Gannett Fleming Inc. of Harrisburg, PA, submitted to Ohio SHPO a Phase I Archaeological Survey[1] and an historic resources survey[2] for the captioned project. The SHPO's response dated January 7, 2019 (attached), noted that "as the undertaking is currently designed, this office will not object to a finding of No Adverse Effect if proposed by the United States Army Corps of Engineers."

Since that time, project funding has been requested for an Environmental Assessment from FEMA and it is anticipated that funding will be requested for construction. Current scope is unchanged from that provided in 2018. Signed engineering plans dated February 2022 of the previously submitted scope are included, including details for the replacement lighting on the gatehouse and on poles.

The APE is unchanged but noted on Figures 1 and 2.

Steps Taken to Identify Historic Properties and the Description of Historic Properties:

Archaeology

No change to work previously undertaken and results submitted.

Standing Structures

No change to work previously undertaken and results submitted.

Determination of Eligibility:

Based on the information previously submitted, FEMA has affirmed the previous finding that ***no archaeological resources within the APE are eligible for listing on the National Register of Historic Places.***

---

[1] A Phase I Archaeological Survey for the Proposed Mineral Ridge Dam Rehabilitation Project, Weathersfield Township, Trumbull County, Ohio. Prepared by Rachel V. Lawrence, MA, Cultural Resource Analysts, Inc. Prepared for Gannett Fleming, Inc.

[2] Historic Architectural Assessment for the Proposed Mineral Ridge Dam in Trumbull County, Ohio. Prepared by Robert Ball, Architectural Historian, Principal Investigation, Cultural Resource Analysts, Inc. Prepared for Gannett Fleming, Inc.

Based on the information previously submitted, FEMA has affirmed the previous finding that the ***dam, gatehouse, and TRU-2460-23 are eligible for listing on the National Register of Historic Places under Criteria A and C.***

The Undertaking's Effects on Historic Properties:

Work to be done on the dam and gate house is not likely to be visible outside the APE for this undertaking. Repairs to the gatehouse are sympathetic to the original design, materials, and workmanship, so are not likely to detract from views nearby. The work proposed on the dam will allow the facility to continue to function as originally designed. The work will be done below grade of the surrounding area, which also minimizes visual effects. In addition, views of the gatehouse and dam from the nearby sanitary district buildings are obscured by trees planted along the bank of Meander Creek. Overall, the effects of this undertaking are minimal, and do not negatively affect character-defining features of the resources.

Project Conditions:

The following condition was required as an outcome of the original consultation:

- Mortar color, composition, and profile to match existing masonry of gatehouse.

Finding:

FEMA finds that this undertaking, when conducted in accord with the conditions noted above, will result in ***no adverse effects on historic properties***.

Summary of Views of Consulting Parties or Public:

The following Tribal Nations were notified of the undertaking and no responses of interest have been received: Delaware Tribe of Indians, Nottawaseppi Huron Band of the Potawatomi Tribe, Seneca Nation of Indians, and Seneca-Cayuga Nation.

Figures:

Figure 1: Undertaking site marked in red.
USGS Map "Warren, OH 2019," 1:24000, enlarged to show detail.

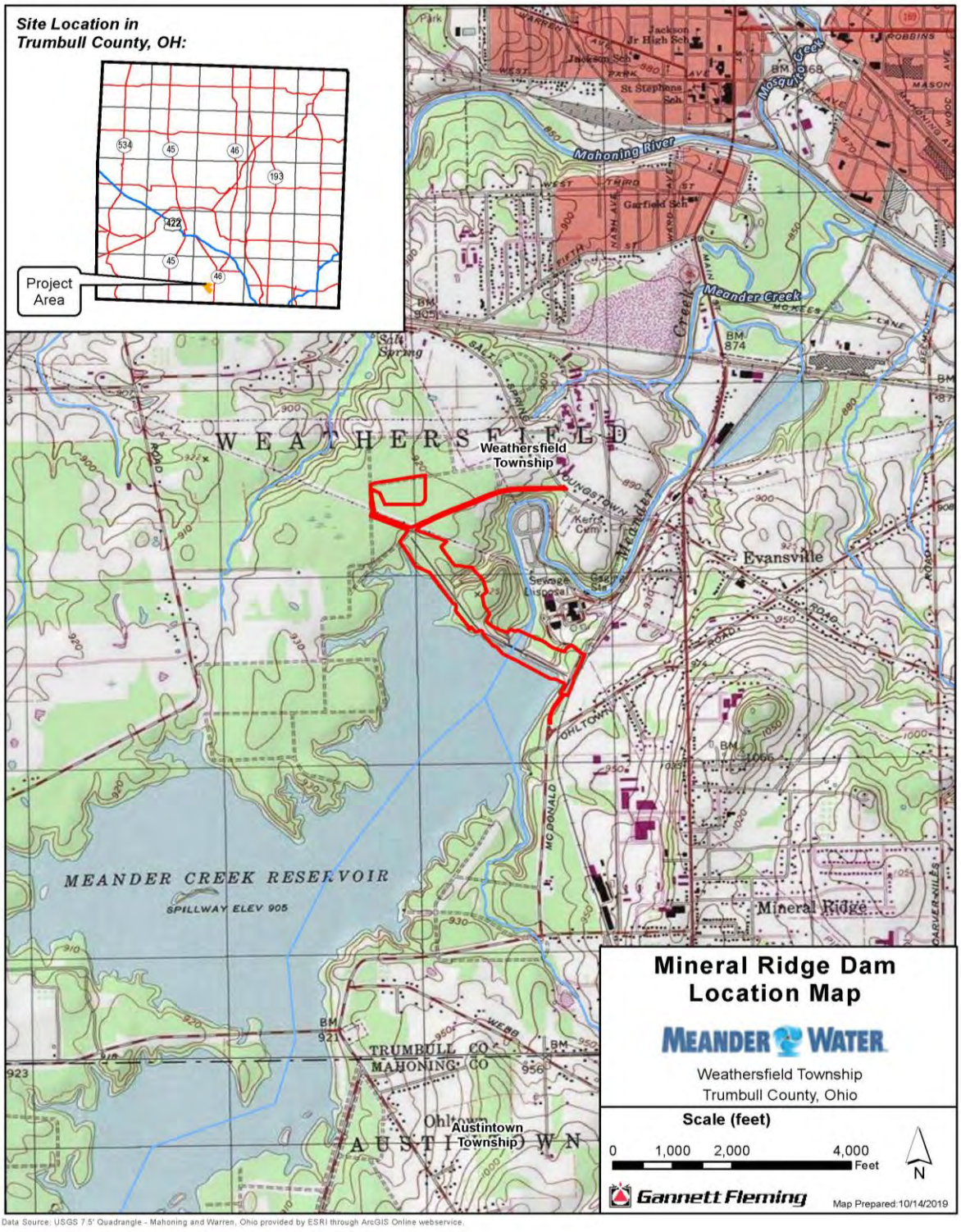
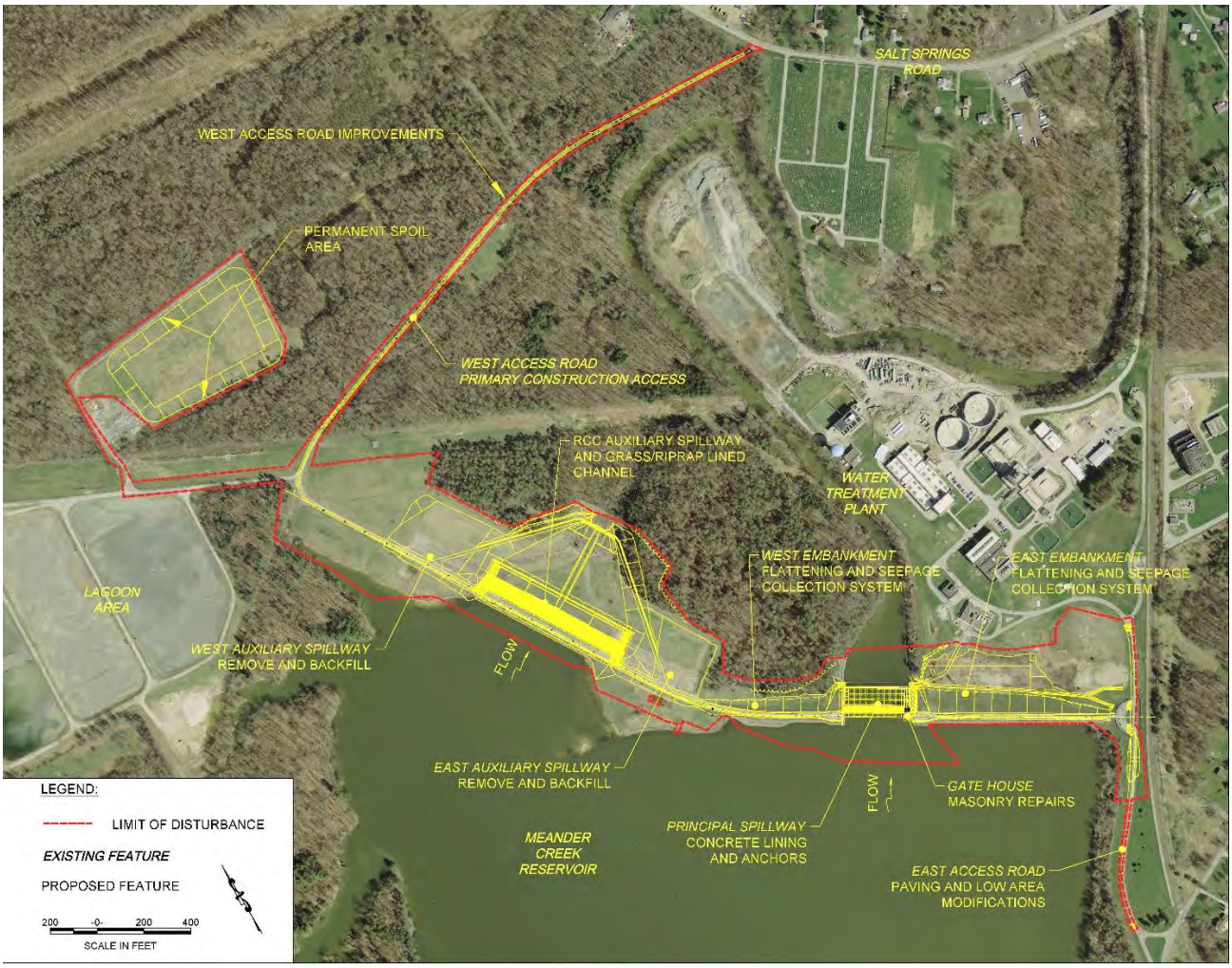
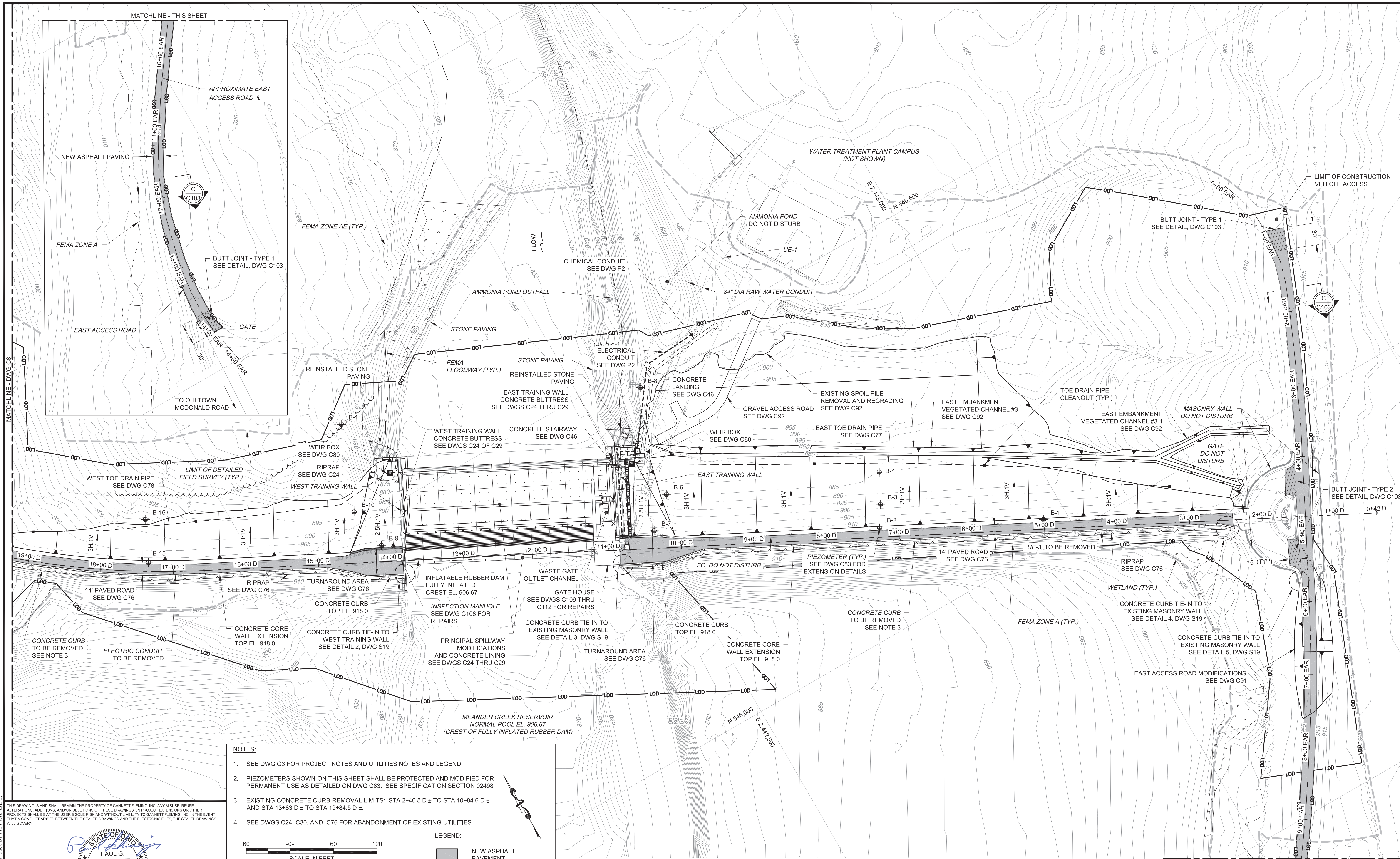


Figure 2: Undertaking site marked in red for limits of ground disturbance.
Aerial Map.





MATCHLINE - THIS SHEET
APPROXIMATE EAST ACCESS ROAD ℄
NEW ASPHALT PAVING
FEMA ZONE A
BUTT JOINT - TYPE 1 SEE DETAIL, DWG C103
EAST ACCESS ROAD
GATE
TO OHLTOWN MCDONALD ROAD
MATCHLINE - DWG C8
FEMA ZONE AE (TYP.)
AMMONIA POND OUTFALL
STONE PAVING
FEMA FLOODWAY (TYP.)
REINSTALLED STONE PAVING
EAST TRAINING WALL CONCRETE BUTTRESS SEE DWGS C24 THRU C29
WEST TRAINING WALL CONCRETE BUTTRESS SEE DWGS C24 OF C29
CONCRETE STAIRWAY SEE DWG C46
WEIR BOX SEE DWG C80
RIPRAP SEE DWG C24
WEST TRAINING WALL
WEST TOE DRAIN PIPE SEE DWG C78
LIMIT OF DETAILED FIELD SURVEY (TYP.)
CHEMICAL CONDUIT SEE DWG P2
ELECTRICAL CONDUIT SEE DWG P2
CONCRETE LANDING SEE DWG C46
WATER TREATMENT PLANT CAMPUS (NOT SHOWN)
AMMONIA POND DO NOT DISTURB
UE-1
84" DIA RAW WATER CONDUIT
GRAVEL ACCESS ROAD SEE DWG C92
EXISTING SPOIL PILE REMOVAL AND REGRADING SEE DWG C92
EAST EMBANKMENT VEGETATED CHANNEL #3 SEE DWG C92
TOE DRAIN PIPE CLEANOUT (TYP.)
EAST EMBANKMENT VEGETATED CHANNEL #3-1 SEE DWG C92
MASONRY WALL DO NOT DISTURB
GATE DO NOT DISTURB
WEIR BOX SEE DWG C80
EAST TOE DRAIN PIPE SEE DWG C77
EAST TRAINING WALL
LIMIT OF CONSTRUCTION VEHICLE ACCESS
BUTT JOINT - TYPE 1 SEE DETAIL, DWG C103
BUTT JOINT - TYPE 2 SEE DETAIL, DWG C103
14' PAVED ROAD SEE DWG C76
TURNAROUND AREA SEE DWG C76
RIPRAP SEE DWG C76
CONCRETE CURB TOP EL. 918.0
INFLATABLE RUBBER DAM FULLY INFLATED CREST EL. 906.67
INSPECTION MANHOLE SEE DWG C108 FOR REPAIRS
WASTE GATE OUTLET CHANNEL
GATE HOUSE SEE DWGS C109 THRU C112 FOR REPAIRS
CONCRETE CURB TIE-IN TO EXISTING MASONRY WALL SEE DETAIL 3, DWG S19
CONCRETE CURB TIE-IN TO WEST TRAINING WALL SEE DETAIL 2, DWG S19
CONCRETE CORE WALL EXTENSION TOP EL. 918.0
CONCRETE CURB TO BE REMOVED SEE NOTE 3
ELECTRIC CONDUIT TO BE REMOVED
PRINCIPAL SPILLWAY MODIFICATIONS AND CONCRETE LINING SEE DWGS C24 THRU C29
TURNAROUND AREA SEE DWG C76
CONCRETE CURB TOP EL. 918.0
CONCRETE CORE WALL EXTENSION TOP EL. 918.0
FO, DO NOT DISTURB
PIEZOMETER (TYP.) SEE DWG C83 FOR EXTENSION DETAILS
CONCRETE CURB TO BE REMOVED SEE NOTE 3
14' PAVED ROAD SEE DWG C76
UE-3, TO BE REMOVED
FEMA ZONE A (TYP.)
RIPRAP SEE DWG C76
WETLAND (TYP.)
CONCRETE CURB TIE-IN TO EXISTING MASONRY WALL SEE DETAIL 4, DWG S19
CONCRETE CURB TIE-IN TO EXISTING MASONRY WALL SEE DETAIL 5, DWG S19
EAST ACCESS ROAD MODIFICATIONS SEE DWG C91
15' (TYP)
MEANDER CREEK RESERVOIR NORMAL POOL EL. 906.67 (CREST OF FULLY INFLATED RUBBER DAM)
N 546,000
E 2,442,500
E 2,443,000
N 546,500
MATCHLINE - THIS SHEET

NOTES:

1. SEE DWG G3 FOR PROJECT NOTES AND UTILITIES NOTES AND LEGEND.
2. PIEZOMETERS SHOWN ON THIS SHEET SHALL BE PROTECTED AND MODIFIED FOR PERMANENT USE AS DETAILED ON DWG C83. SEE SPECIFICATION SECTION 02498.
3. EXISTING CONCRETE CURB REMOVAL LIMITS: STA 2+40.5 D ± TO STA 10+84.6 D ± AND STA 13+83 D ± TO STA 19+84.5 D ±.
4. SEE DWGS C24, C30, AND C76 FOR ABANDONMENT OF EXISTING UTILITIES.

LEGEND:

NEW ASPHALT PAVEMENT

SCALE IN FEET: 60 -0- 60 120

STATE OF OHIO — PAUL G. SCHWEIGER — E-84713 — REGISTERED PROFESSIONAL ENGINEER

February 9, 2022

NO.	DESCRIPTION	DATE	BY

REVISIONS

DESIGNED	CADD	SCALE
EEF	EEF	AS SHOWN
DRAWN	CHECKED	APPROVED
EEF	TWJ	PGS

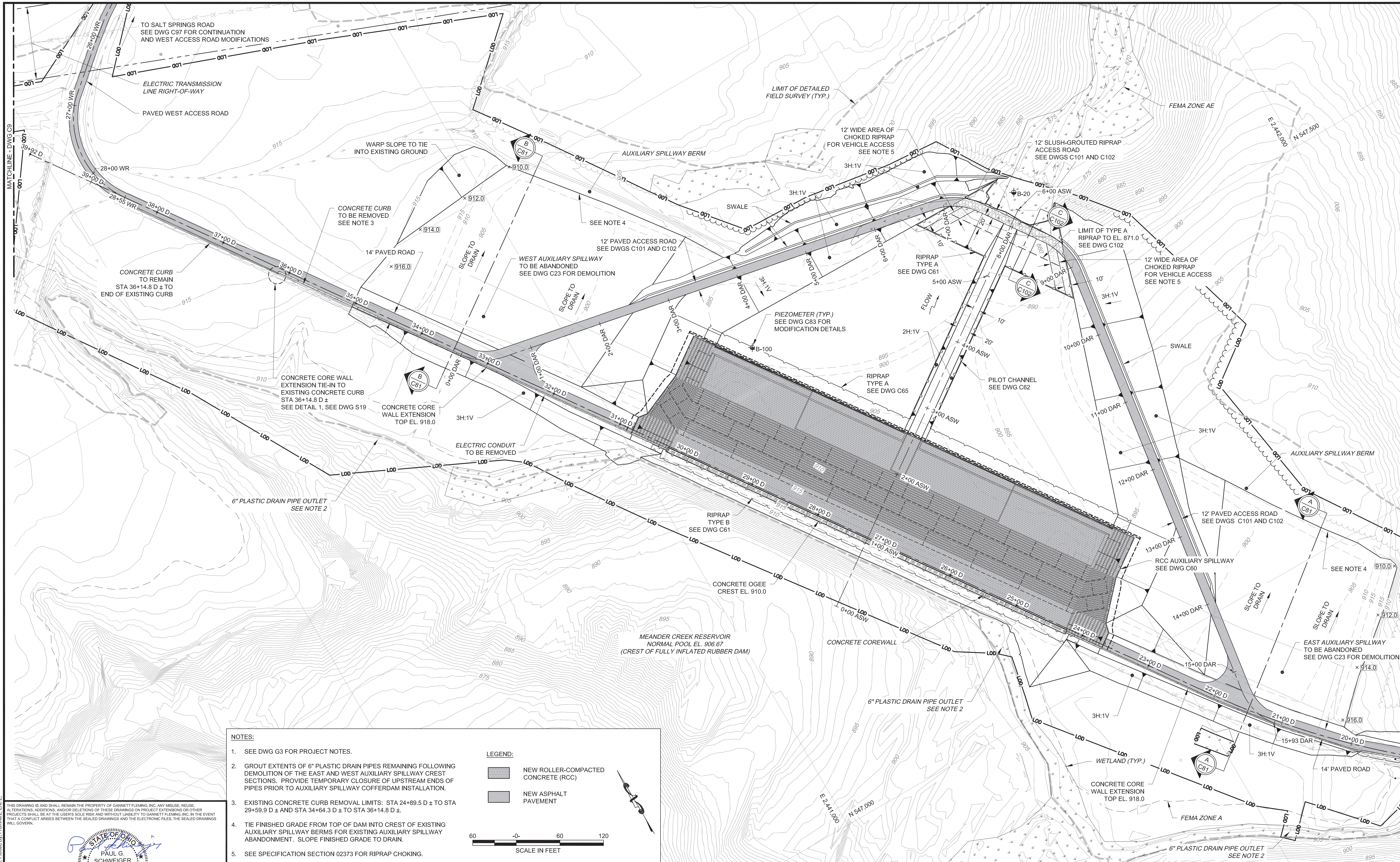
Gannett Fleming

THE MAHONING VALLEY SANITARY DISTRICT
MINERAL RIDGE, OHIO

MINERAL RIDGE DAM REHABILITATION PROJECT

PLAN OF MODIFICATIONS
SHEET 1 OF 3

JOB NO.	SHEET NO.
58721	18 OF 224
DATE	DRAWING NO.
FEB 2022	C7



NOTES:

1. SEE DWG G3 FOR PROJECT NOTES.
2. GROUT EXTENTS OF 6" PLASTIC DRAIN PIPES REMAINING FOLLOWING DEMOLITION OF THE EAST AND WEST AUXILIARY SPILLWAY CREST SECTIONS. PROVIDE TEMPORARY CLOSURE OF UPSTREAM ENDS OF PIPES PRIOR TO AUXILIARY SPILLWAY COFFERDAM INSTALLATION.
3. EXISTING CONCRETE CURB REMOVAL LIMITS: STA 24+89.5 D ± TO STA 29+59.9 D ± AND STA 34+64.3 D ± TO STA 36+14.8 D ±.
4. TIE FINISHED GRADE FROM TOP OF DAM INTO CREST OF EXISTING AUXILIARY SPILLWAY BERMS FOR EXISTING AUXILIARY SPILLWAY ABANDONMENT. SLOPE FINISHED GRADE TO DRAIN.
5. SEE SPECIFICATION SECTION 02373 FOR RIPRAP CHOKING.

LEGEND:

- NEW ROLLER-COMPACTED CONCRETE (RCC)
- NEW ASPHALT PAVEMENT

60 -0- 60 120
SCALE IN FEET

STATE OF OHIO
PAUL G. SCHWEIGER
E-84713
REGISTERED PROFESSIONAL ENGINEER
February 9, 2022

NO.	DESCRIPTION	DATE	BY

REVISIONS

DESIGNED	CADD	SCALE
EEF	EEF	AS SHOWN
DRAWN	CHECKED	APPROVED
EEF	TWJ	PGS

Gannett Fleming

THE MAHONING VALLEY SANITARY DISTRICT
MINERAL RIDGE, OHIO

MINERAL RIDGE DAM
REHABILITATION PROJECT

PLAN OF MODIFICATIONS
SHEET 2 OF 3

JOB NO.	SHEET NO.
58721	19 OF 224
DATE	DRAWING NO.
FEB 2022	C8

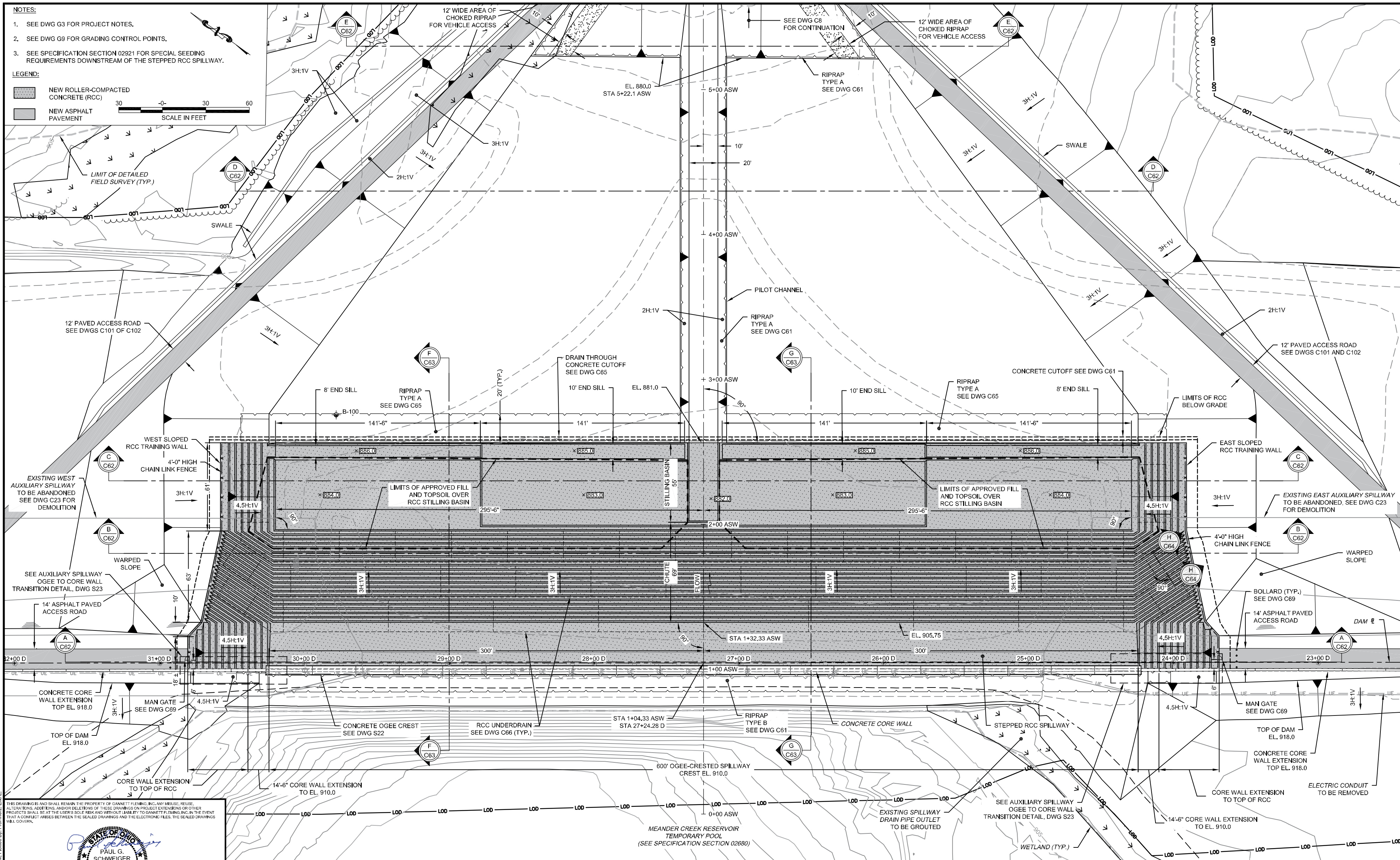
NOTES:

1. SEE DWG G3 FOR PROJECT NOTES.
2. SEE DWG G9 FOR GRADING CONTROL POINTS.
3. SEE SPECIFICATION SECTION 02921 FOR SPECIAL SEEDING REQUIREMENTS DOWNSTREAM OF THE STEPPED RCC SPILLWAY.

LEGEND:

- NEW ROLLER-COMPACTED CONCRETE (RCC)
- NEW ASPHALT PAVEMENT

SCALE IN FEET: 30 – 0 – 30 – 60



STATE OF OHIO — PAUL G. SCHWEIGER — E-84713 — REGISTERED PROFESSIONAL ENGINEER

February 9, 2022

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

DESIGNED	CADD	SCALE
EEF	EEF	AS SHOWN
DRAWN	CHECKED	APPROVED
EEF	TWJ	PGS

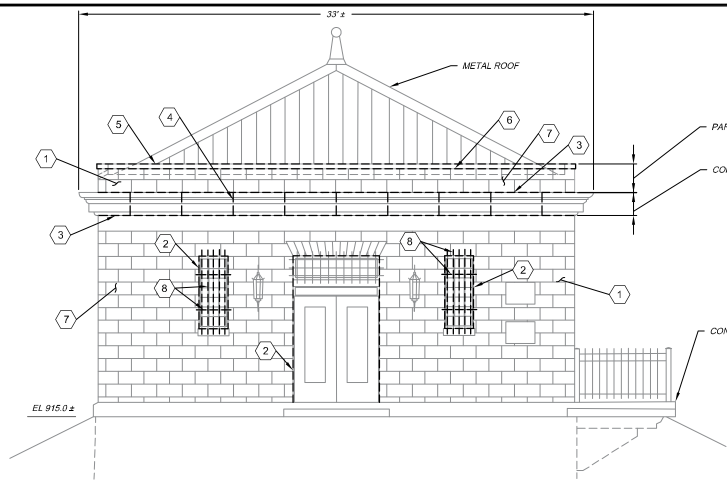
Gannett Fleming

THE MAHONING VALLEY SANITARY DISTRICT
MINERAL RIDGE, OHIO

MINERAL RIDGE DAM REHABILITATION PROJECT

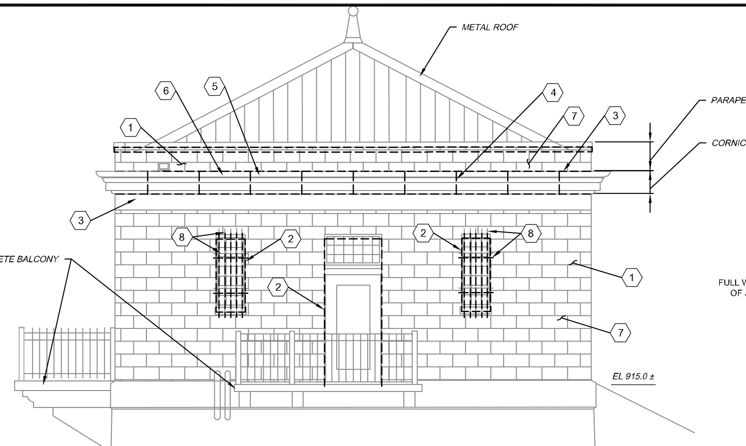
AUXILIARY SPILLWAY PLAN

JOB NO.	SHEET NO.
58721	71 OF 224
DATE	DRAWING NO.
FEB 2022	C60



GATE HOUSE - EAST ELEVATION

SCALE: 1"=4'-0"

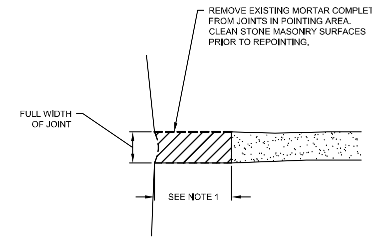


GATE HOUSE - WEST ELEVATION

SCALE: 1"=4'-0"

MORTAR REMOVAL NOTES:

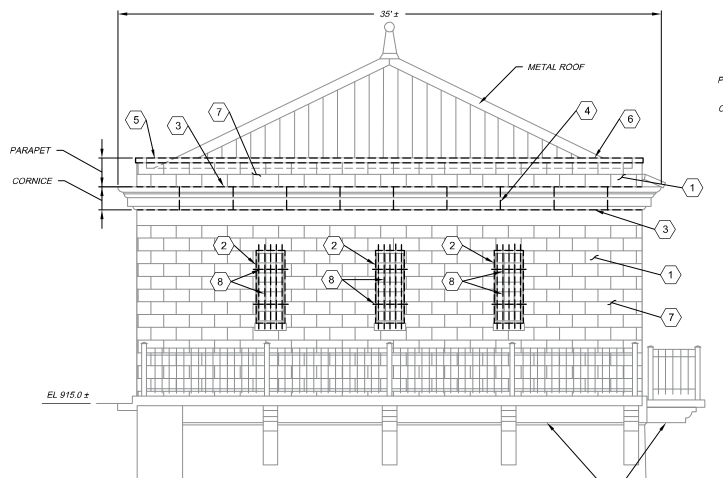
1. REMOVE A UNIFORM DEPTH OF MORTAR TO A DIMENSION OF 2 1/2 TIMES THE JOINT WIDTH BUT NO MORE THAN 1/3 DEPTH OF UNIT. IF MORTAR IS UNSOUND AND GREATER THAN 1/3 DEPTH OF UNIT, REPORT TO THE ENGINEER. DO NOT DAMAGE EXISTING STONE WITH POWER TOOLS. IF NECESSARY DO ALL MORTAR JOINT REMOVALS WITH HAND TOOLS.



MORTAR REMOVAL FOR REPOINTING

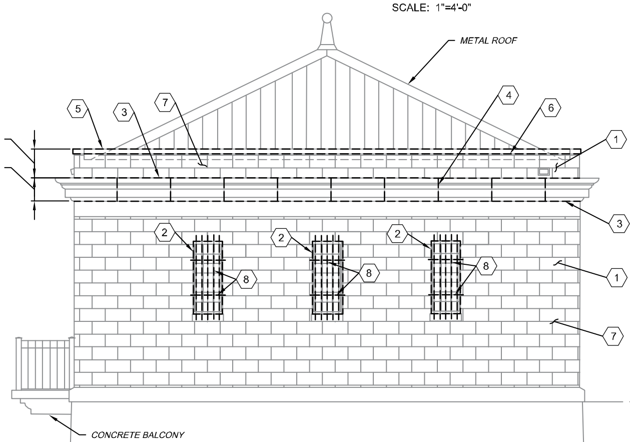
DETAIL 1/-

NOT TO SCALE



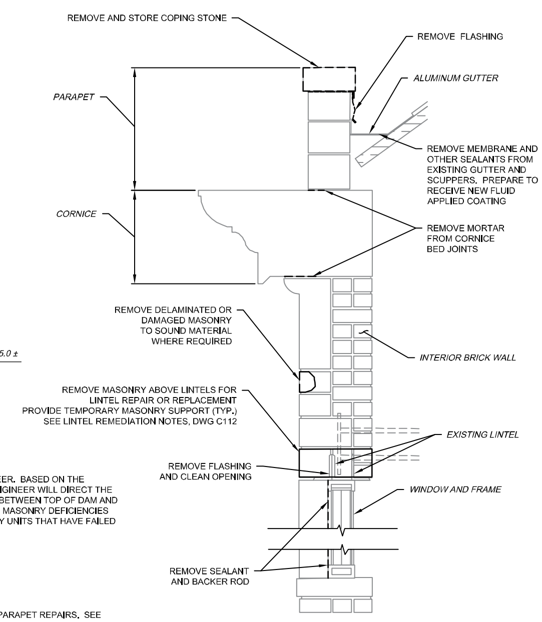
GATE HOUSE - NORTH ELEVATION

SCALE: 1"=4'-0"



GATE HOUSE - SOUTH ELEVATION

SCALE: 1"=4'-0"



EXISTING MASONRY WALL

DETAIL 2/-

NOT TO SCALE

KEYNOTES

1. PERFORM NON-DESTRUCTIVE SOUNDING OF EACH IN-SITU STONE USING A HAND HELD RUBBER TIPPED HAMMER IN THE PRESENCE OF THE ENGINEER. BASED ON THE RESULTS OF THE SOUNDING, THE ENGINEER WILL ASSESS WHETHER OR NOT A STONE IS TO BE REMOVED. UPON REMOVAL OF THE STONE, THE ENGINEER WILL DIRECT THE TYPE OF REPAIR TO BE PERFORMED AT THAT STONE LOCATION. PERFORM NON-DESTRUCTIVE SOUNDING OF THE EXTERIOR MASONRY LOCATED BETWEEN TOP OF DAM AND TOP OF COPING STONE, INCLUSIVE, TO IDENTIFY AREAS OF LOOSE, DETERIORATED, OR DELAMINATED MASONRY. DOCUMENT THE EXTENT OF THE MASONRY DEFICIENCIES TO BE USED FOR MEASUREMENT AND PAYMENT. REMOVE DELAMINATED OR DAMAGED MASONRY TO SOUND MATERIAL. REMOVE STONE MASONRY UNITS THAT HAVE FAILED TO THE EXTENT THAT SOUND MATERIAL CANNOT BE REACHED.
2. REMOVE DOOR/WINDOW SEALANT AND BACKER ROD.
3. REMOVE MORTAR FROM 100% OF THE CORNICE BED JOINTS TO A UNIFORM DEPTH OF 2 1/2 INCHES.
4. REMOVE MORTAR FROM 100% OF THE CORNICE HEAD JOINTS TO A UNIFORM DEPTH OF 2 1/2 INCHES.
5. REMOVE COPING STONE, CLEAN, AND STORE FOR REUSE. NUMBER THE COPING STONE FOR REINSTALLATION AFTER COMPLETION OF MASONRY PARAPET REPAIRS. SEE DETAIL 2, THIS SHEET.
6. REMOVE EXISTING FLASHING BETWEEN PARAPET AND COPING STONE. SEE DETAIL 2, THIS SHEET.
7. REMOVE MORTAR IN 100% OF THE EXISTING STONE MASONRY JOINTS AS REQUIRED PER DETAIL 1, THIS SHEET.
8. REMOVE AND STORE METAL WINDOW BARS TO ALLOW FOR REMOVAL AND REPLACEMENT OF WINDOW SEALANT.
9. REMOVE MEMBRANE FLASHING FROM GUTTER SEAMS. THOROUGHLY CLEAN GUTTER AND PREPARE TO RECEIVE FLUID APPLIED COATING PRIOR TO REINSTALLATION OF COPING.

4 -0- 4 8

SCALE IN FEET

NOTES:

1. EXISTING CONDITIONS EXTRACTED FROM EMERGENCY SPILLWAY & DAM IMPROVEMENTS AS-BUILT DRAWINGS (1995). DIMENSIONS SHOWN ARE REFERENCED FROM THE CONTRACT NO. 6 HISTORICAL DRAWINGS FOR THE CONSTRUCTION OF MINERAL RIDGE DAM AND APPURTENANT WORK (1928).
2. HATCHING SHOWN IN ELEVATION VIEWS REPRESENTING MASONRY IS FOR VISUAL PURPOSES ONLY AND DOES NOT ACCURATELY DEPICT EXTENTS OF REPOINTING.
3. PROVIDE CONSTRUCTION SKIRT PROTECTION AROUND BOTTOM OF BUILDING TO KEEP ALL DEBRIS RESULTING FROM DEMOLITION / CONSTRUCTION FROM ENTERING THE WATER SYSTEM. CLEAN AT REGULAR INTERVALS TO AVOID LEAKAGE INTO WATER.

STATE OF OHIO
PAUL G. SCHWEIGER
E-84713
REGISTERED PROFESSIONAL ENGINEER

February 9, 2022

NO.	DESCRIPTION	DATE	BY

REVISIONS

DESIGNED	CADD	SCALE
EEF	EEF	AS SHOWN
DRAWN	**CHECKED**	**APPROVED**
EEF	TWJ	PGS

Gannett Fleming

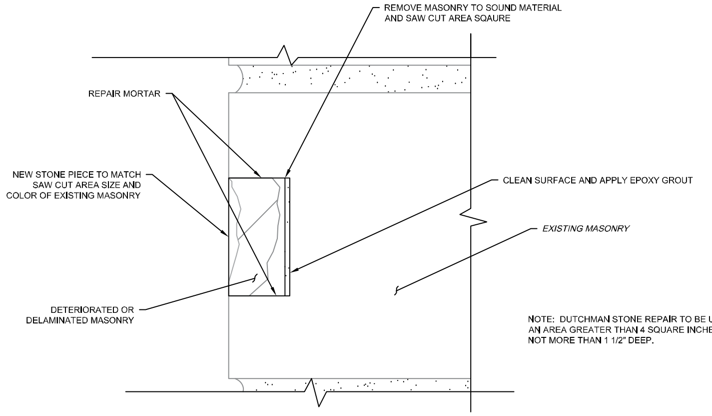
THE MAHONING VALLEY SANITARY DISTRICT
MINERAL RIDGE, OHIO

MINERAL RIDGE DAM
REHABILITATION PROJECT

GATE HOUSE REPAIRS
DEMOLITION

JOB NO.	SHEET NO.
58721	120 OF 224
DATE	**DRAWING NO.**
FEB 2022	C109

Q:\Earth Sciences CBG\Div-4-W\GDH\058721-Mineral Ridge\MRD CADD\MRD CADD\Design Set\GATE HOUSE MASONRY REPAIRS - SHEET 2 OF 3.dwg
Plot Date: 2/2/2022 8:14 PM, Plotted By: Fromherz, Eric E.

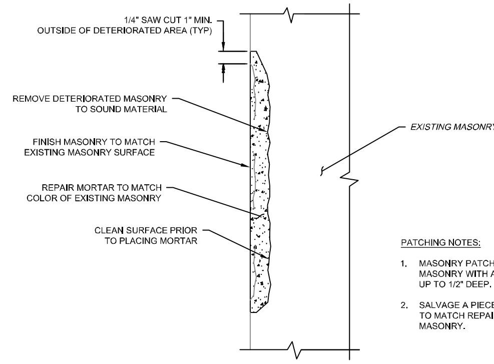


NOTE: DUTCHMAN STONE REPAIR TO BE USED FOR DAMAGED MASONRY WITH AN AREA GREATER THAN 4 SQUARE INCHES AND GREATER THAN 1/2" DEEP BUT NOT MORE THAN 1 1/2" DEEP.

DUTCHMAN STONE REPAIR

DETAIL 6/-

NOT TO SCALE



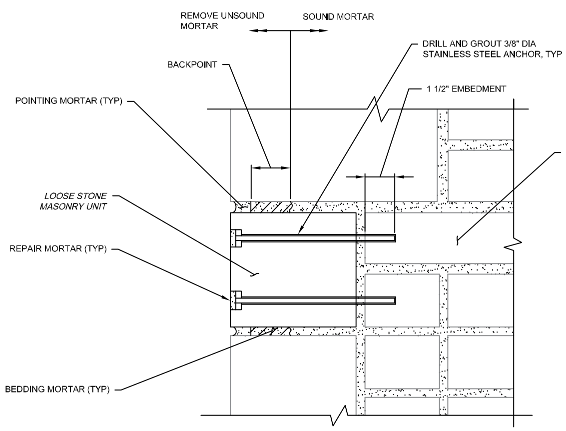
PATCHING NOTES:

1. MASONRY PATCHING REPAIR TO BE USED FOR DAMAGED MASONRY WITH AN AREA OF LESS THAN 4 SQUARE INCHES AND UP TO 1/2" DEEP.
2. SALVAGE A PIECE OF EXISTING DAMAGED MASONRY TO BE USED TO MATCH REPAIR MORTAR COLOR AND FINISH WITH EXISTING MASONRY.

MASONRY PATCHING

DETAIL 7/-

NOT TO SCALE



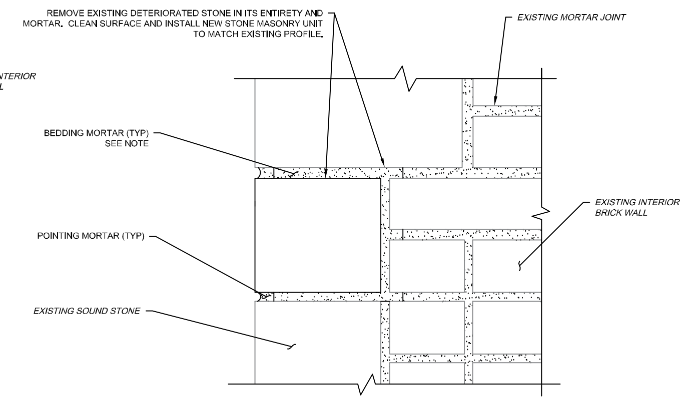
RETROFIT ANCHOR INSTALLATION

DETAIL 8/-

NOT TO SCALE

RETROFIT ANCHOR NOTES:

1. INSTALL A MINIMUM OF FOUR ANCHORS PER STONE. CONTRACTOR SHALL ASSESS EACH STONE REQUIRING ANCHORS AND SUPPLEMENT ADDITIONAL ANCHORS AS REQUIRED AND AS APPROVED BY THE ENGINEER.
2. RECESS THE END OF THE ANCHOR A MINIMUM OF 3/4 INCHES AND PATCH WITH REPAIR MORTAR TO MATCH STONE.

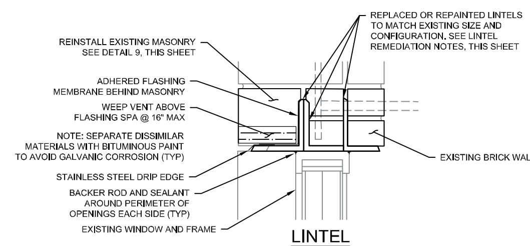


MASONRY REPLACEMENT

DETAIL 9/-

NOT TO SCALE

NOTE: PLACE NEW MORTAR FOR REPLACEMENT MASONRY OUT TO DEPTH OF REPOINTING. PLACE ADDITIONAL POINTING MORTAR AT NEW MASONRY JOINTS IN CONJUNCTION WITH REPOINTING OF EXISTING MASONRY JOINTS.



LINTEL

DETAIL 10/-

NOT TO SCALE

LINTEL REMEDIATION NOTES:

1. PROVIDE TEMPORARY SUPPORT FOR EXISTING MASONRY ABOVE EXISTING LINTELS IN ORDER TO SAFELY REMOVE MASONRY ABOVE LINTELS AS REQUIRED FOR INSPECTION. SUBMIT TEMPORARY SUPPORT DESIGN DRAWINGS AND CALCULATIONS BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OHIO SPECIALIZING IN MASONRY RESTORATION.
2. CAREFULLY REMOVE ONE COURSE OF MASONRY (OR 4" MINIMUM TO MORTAR JOINT) ABOVE LINTEL TO EXPOSE EXISTING LINTEL FOR INSPECTION. IF LINTEL IS SOUND WITHOUT SECTION LOSS DUE TO CORROSION, REMOVE EXISTING FLASHING (IF PRESENT) AND ANY EXISTING RUST, PRIME AND REPAINT WITH ANTI-CORROSIVE PAINT. PROVIDE FLASHING AND WEEPS AND REINSTALL MASONRY PER DETAIL 10.
3. IF LINTEL HAS BOWED (OUT OF LEVEL) OR HAS SIGNIFICANT RUST, REMOVE LINTEL AND REPLACE WITH NEW GALVANIZED STEEL LINTEL, SIZED AND PAINTED TO MATCH EXISTING. PROVIDE FLASHING AND WEEPS AND REINSTALL MASONRY PER DETAIL 10.
4. MASONRY COURSING SHOWN IS FOR GENERAL INFORMATION ONLY. EXISTING MASONRY COURSING DIFFERS AT DIFFERENT LOCATIONS. REPLACE REMOVED MASONRY TO MATCH EXISTING PATTERN.
5. EXISTING LINTEL ANGLES ARE ASSUMED TO BE LOOSE LAID. IF ONCE EXPOSED THE LINTELS ARE FOUND TO BE UNACCEPTABLY DETERIORATED AND UNABLE TO BE REMOVED DUE TO UNFORESEEN CIRCUMSTANCES (IE: LINTELS ARE STRUCTURALLY CONNECTED OR ANCHORED INTO THE BRICK OR STONE MASONRY) NOTIFY ENGINEER IMMEDIATELY AND DO NOT PROCEED WITH WORK AT THAT LINTEL LOCATION.

STATE OF OHIO
PAUL G.
SCHWEIGER
E-84713
REGISTERED
PROFESSIONAL ENGINEER

February 9, 2022

NO.	DESCRIPTION	DATE	BY

REVISIONS

DESIGNED	CADD	SCALE
EEF	EEF	AS SHOWN
DRAWN	CHECKED	APPROVED
EEF	TWJ	PGS

Gannett Fleming

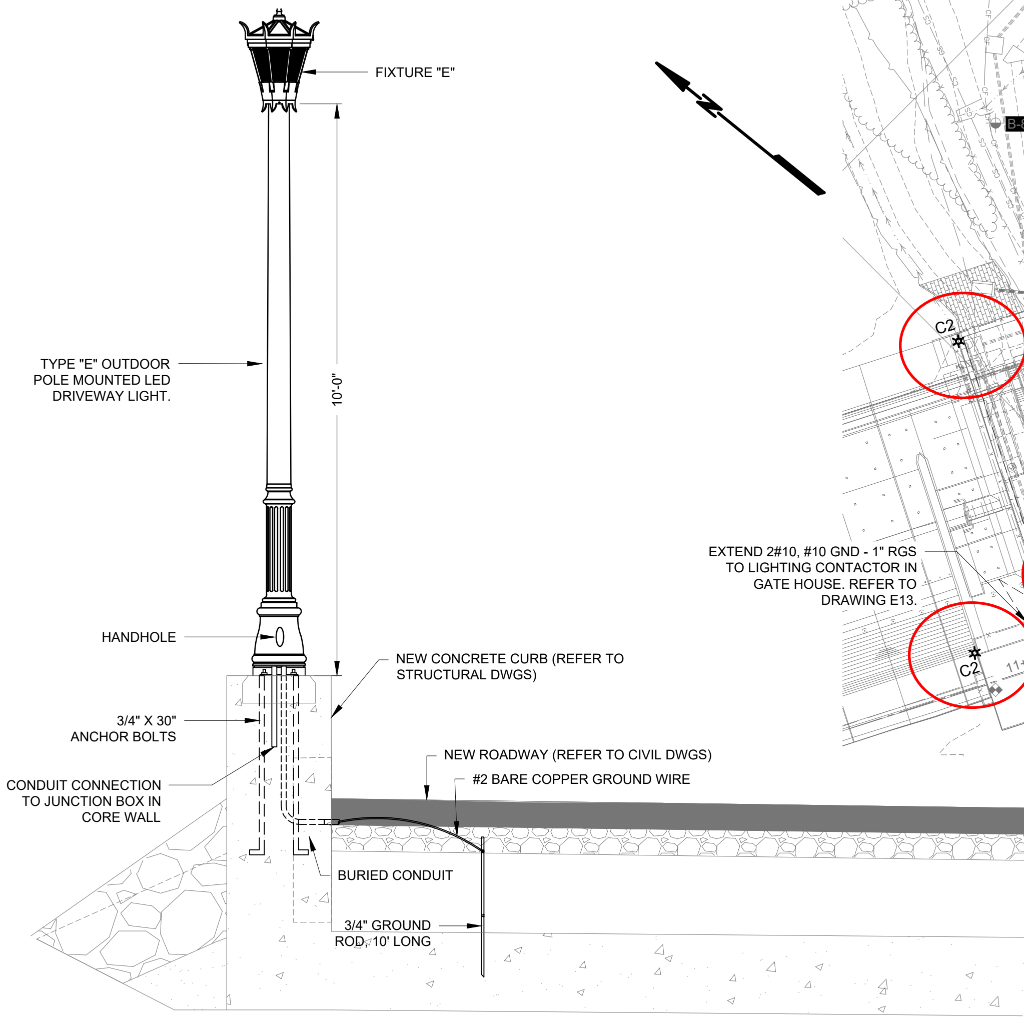
THE MAHONING VALLEY SANITARY DISTRICT
MINERAL RIDGE, OHIO

MINERAL RIDGE DAM
REHABILITATION PROJECT

GATE HOUSE REPAIRS
SHEET 3 OF 3

JOB NO.	SHEET NO.
58721	123 OF 224
DATE	DRAWING NO.
FEB 2022	C112

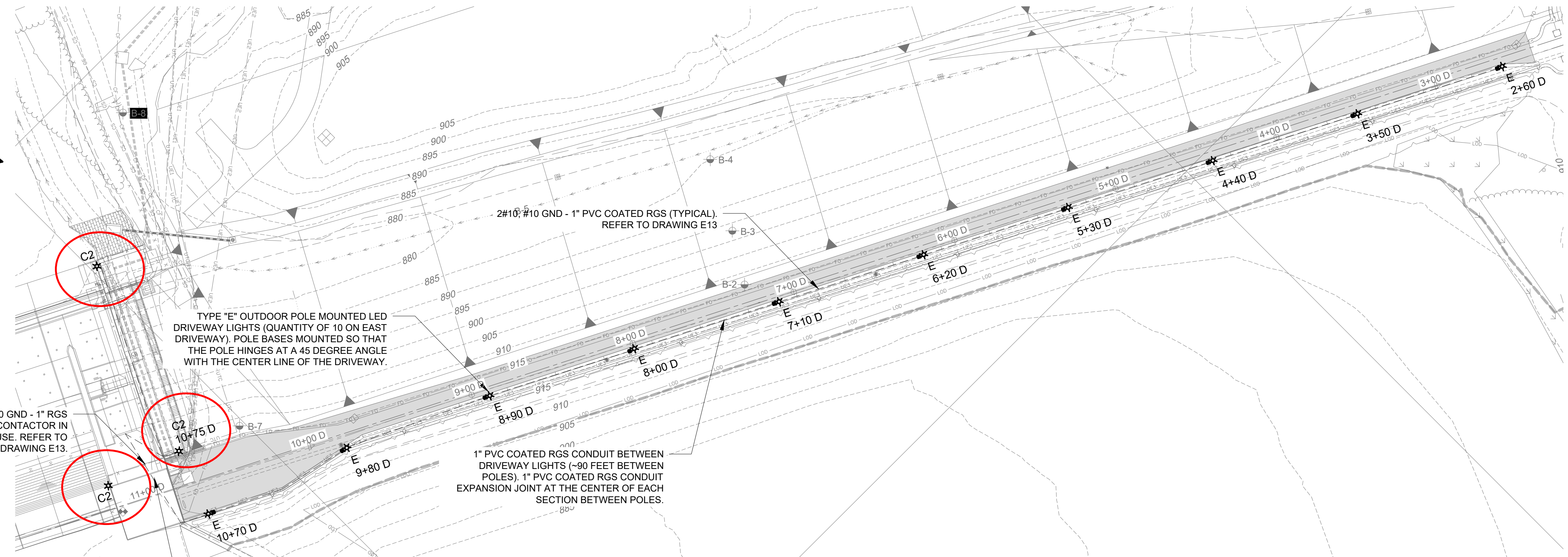
Q:\Earth Sciences CBG\Div-4-W\GDH\058721-Mineral Ridge\MRD CADD\MRD CADD\Design Set\GATE HOUSE MASONRY REPAIRS - SHEET 2 OF 3.dwg
Plot Date: 2/2/2022 8:14 PM, Plotted By: Fromherz, Eric E.



NOTE:
CONCRETE WORK & REINFORCING BY OTHERS. REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAIL AND REINFORCEMENT.

POLE DETAIL "C"

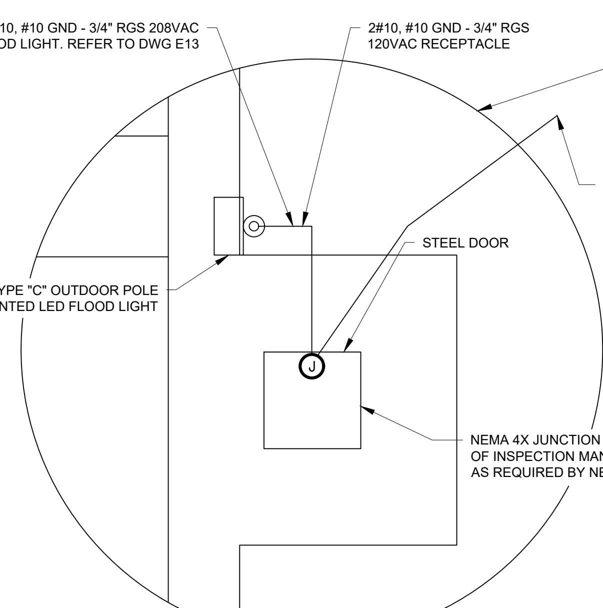
SCALE:NONE



EAST EMBANKMENT ROADWAY AND PRINCIPAL SPILLWAY SITE LIGHTING PLAN

SCALE: 1"=40'

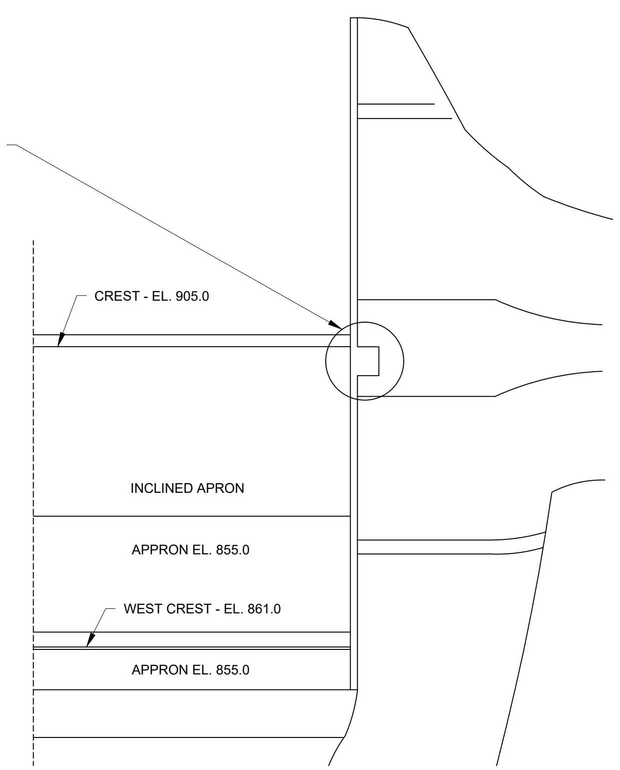
40' 20' 0 20' 40'
1" = 40'-0"



SEE NOTE 1

2 E-9 LIGHTING SITE PLAN EXISTING MANHOLE

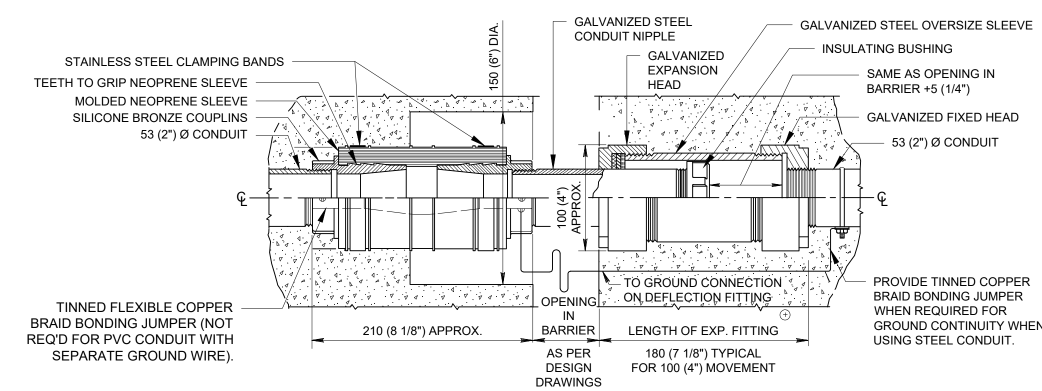
SCALE:NONE



SEE NOTE 1

3 E-9 LIGHTING SITE PLAN WEST SPILLWAY ABUTMENT & MANHOLE

SCALE:NONE



⊙ PROVIDE SLEEVE OF SUFFICIENT LENGTH TO ACCOMMODATE MAXIMUM EXPANSION & CONTRACTION OF EXPANSION JOINT.

PROVIDE EXPANSION AND DEFLECTION DETAIL AT ALL EXPANSION AND CONTRACTION JOINS SHOWN ON STRUCTURAL AND CIVIL DRAWINGS WHERE CONDUITS CROSS THESE JOINTS.

4 E-9 CONDUIT EXPANSION & DEFLECTION JOINT FITTINGS

SCALE:NONE

NOTES:

1. EXISTING CONDITIONS EXTRACTED FROM DRAWING E-0.10 FROM EMERGENCY SPILLWAY & DAM IMPROVEMENTS AS-BUILT DRAWINGS (1995).

STATE OF OHIO
QAYYUM AHMED MOHAMED ABDUL
E-84118
REGISTERED PROFESSIONAL ENGINEER
02/15/2022

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

DESIGNED	CADD	SCALE
BAS	EEF	AS SHOWN
DRAWN	CHECKED	APPROVED
EEF	WBH	QA

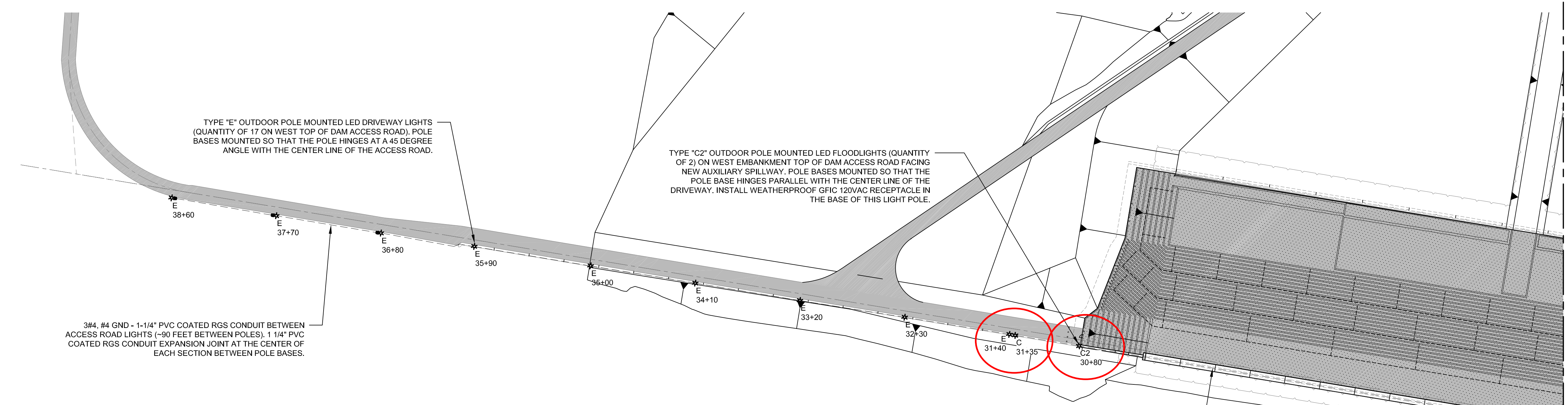
Gannett Fleming

THE MAHONING VALLEY SANITARY DISTRICT
MINERAL RIDGE, OHIO

MINERAL RIDGE DAM REHABILITATION PROJECT

EAST DRIVEWAY SITE PLAN

JOB NO.	SHEET NO.
58721	170 OF 224
DATE	DRAWING NO.
FEB 2022	E9



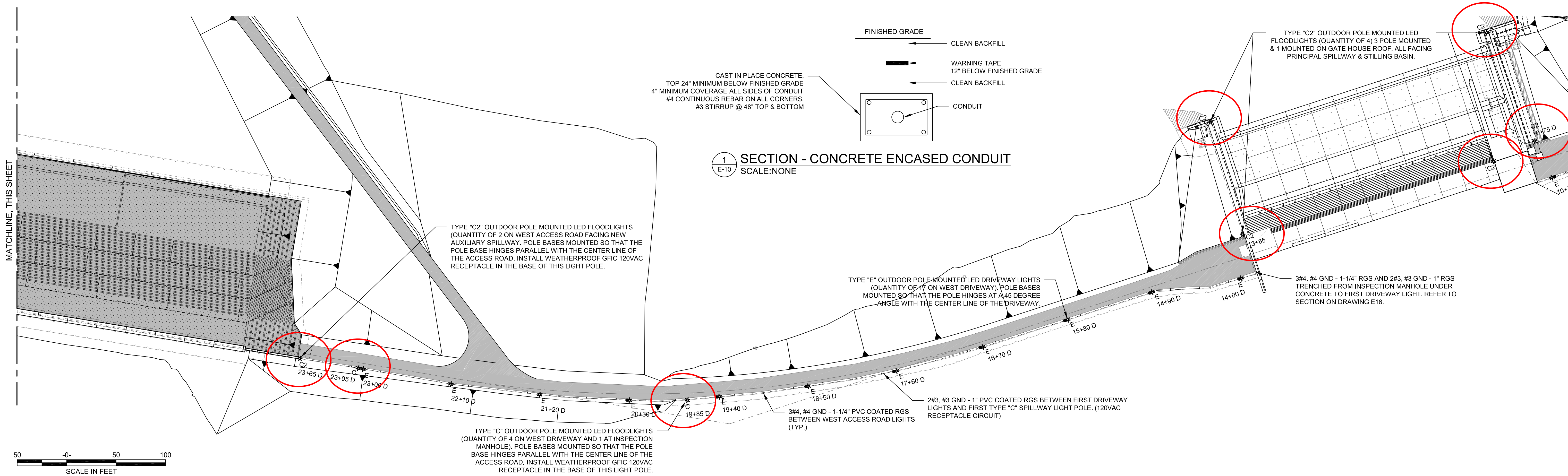
WEST EMBANKMENT SITE PLAN NEW WORK - SECTION 1

SCALE: 1"=50'

50' 20' 0 50' 100'
1" = 50'-0"

FINISHED GRADE
CLEAN BACKFILL
WARNING TAPE 12" BELOW FINISHED GRADE
CLEAN BACKFILL
CAST IN PLACE CONCRETE, TOP 24" MINIMUM BELOW FINISHED GRADE 4" MINIMUM COVERAGE ALL SIDES OF CONDUIT #4 CONTINUOUS REBAR ON ALL CORNERS, #3 STIRRUP @ 48" TOP & BOTTOM
CONDUIT

1 / E-10 SECTION - CONCRETE ENCASED CONDUIT
SCALE:NONE



50 -0- 50 100
SCALE IN FEET

WEST EMBANKMENT SITE PLAN NEW WORK - SECTION 2

SCALE: 1"=50'

50' 20' 0 50' 100'
1" = 50'-0"

NOTES:

1. ALL WIRES TO BE TYPE XHHW.

STATE OF OHIO
QAYYUM AHMED MOHAMED ABDUL
E-84118
REGISTERED PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

DESIGNED	CADD	SCALE
BAS	EEF	AS SHOWN
DRAWN	CHECKED	APPROVED
EEF	WBH	QA

Gannett Fleming

THE MAHONING VALLEY SANITARY DISTRICT
MINERAL RIDGE, OHIO

MINERAL RIDGE DAM REHABILITATION PROJECT

WEST DRIVEWAY
SITE PLAN

JOB NO.	SHEET NO.
58721	171 OF 224
DATE	DRAWING NO.
FEB 2022	E10

Q:\Earth Sciences CBG\Div-4-W\GDH\058721-Mineral Ridge\MRD CADD\MRD CADD\Electrical\E-10.dwg
Plot Date: 2/15/2022 1:37 PM, Plotted By: Fromherz, Eric E.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	CATALOG #	LAMP QTY.	LAMP TYPE	WATT	VOLTS	MOUNTING	REMARKS
A	NOT USED								
B	FLOODLIGHT LUMINAIRE	HOLOPHANE	PSLED P5 40K MVOLT 65-KM-BZDP-F2		LED 4100K	236	208	WALL	WALL BRACKET FOR 2" SLIP FITTER CATALOG NUMBER BKT-1-PP
C	FLOODLIGHT LUMINAIRE	HOLOPHANE	PSLED-P5-40K-MVOLT-66-KM-BZDP-F2	.....	LED 4100K	236	208	POLE 16'	FOR POLE INFORMATION, SEE NOTE 3
C2	FLOODLIGHT LUMINAIRE	HOLOPHANE	PSLED-P7-40K-MVOLT-66-KM-BZDP-F2	.....	LED 5100K	236	208	POLE/WALL	FOR POLE INFORMATION, SEE NOTE 3 (SPILLWAYS & STILLING BASIN)
D	STAIR LUMINAIRE	LITHONIA LIGHTING	XWMLED	---	LED 4100K	24	120	WALL/CEILING	
D2	GALLERY LUMINAIRE	LITHONIA LIGHTING	FEM-L48-3000L-MACD-WD-120	.....	LED 4100K	39	120	WALL/CEILING	WITH WET LOCATION FITTINGS AT BOTH ENDS (WLFEND2) AND STAINLESS STEEL MOUNTING BRACKETS
E	LANTERN POST TOP LUMINAIRE	HOLOPHANE	JFE-70-4K-AS-G3-H-S	.....	LED 4100K	70	208	POLE 12'	FOR POLE INFORMATION, SEE NOTE 2
F	LANTERN WITH DECORATIVE WALL BRACKET	HOLOPHANE	JFE-50-4K-AS-G3-H-S	.....	LED 4100K	50	120	WALL	PROVIDE WITH DECORATIVE WALL BRACKET, LVWB
G	LUMINAIRE **(NOT USED)**	CANLET	02 20W L W F OG 01		LED 4100K		120	NA	
H	FLOODLIGHT (FOR GALLERY INSPECTION SHAFT)	HOLOPHANE	PSLED-P3-40K-MVOLT-44-KM-BZDP-F2	.....	LED 4100K	118	120	WALL	WALL BRACKET FOR 2" SLIP FITTER CATALOG NUMBER 06387

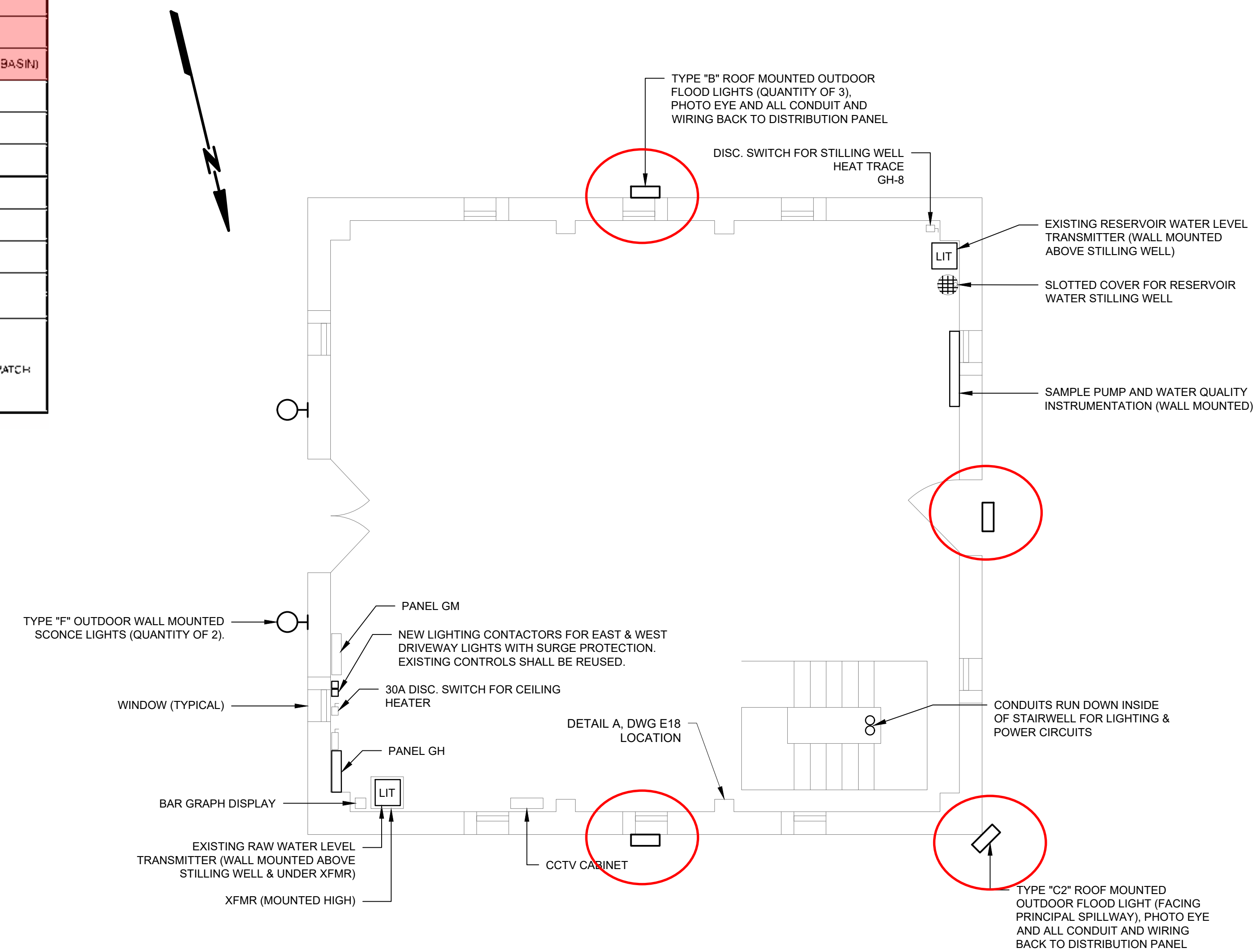
GENERAL FIXTURE NOTES:

1) MANUFACTURERS LISTED WITHOUT CATALOG NUMBERS ARE RESPONSIBLE FOR MEETING THE QUALITY STANDARDS, FEATURES AND PHOTOMETRIC PERFORMANCE SET BY THE SPECIFIED PRODUCT.

2) VALMONT 10 FOOT HIGH, 5 INCH O.D. ROUND NON-TAPERED ALUMINUM HINGED BASE POLE WITH COVERED HANDHOLE HARDWARE AND GROUNDING PROVISION. COLOR OF POLE SHALL MATCH FIXTURE COLOR

3) VALMONT 16 FOOT HIGH, 5 INCH O.D. ROUND NON-TAPERED ALUMINUM HINGED BASE POLE WITH COVERED HANDHOLE HARDWARE AND GROUNDING PROVISION. FLOODLIGHT SHALL BE TENON MOUNTED TO POLE. COLOR OF POLE SHALL MATCH FIXTURE COLOR. PROVIDE POLE WITH WEATHER PROOF RECESS GROUND FAULT CIRCUIT INTERUPTER RECEPTACLE AT BOTTOM OF POLE SHAFT

4) ALL FIXTURE POLES ALONG TOP OF DAM SHALL HAVE A HINGED BASE



GATE HOUSE FLOOR PLAN - ELECTRICAL NEW WORK

SCALE: 1/4"=1'

1' 0 2' 4' 8'
1/4" = 1'-0"

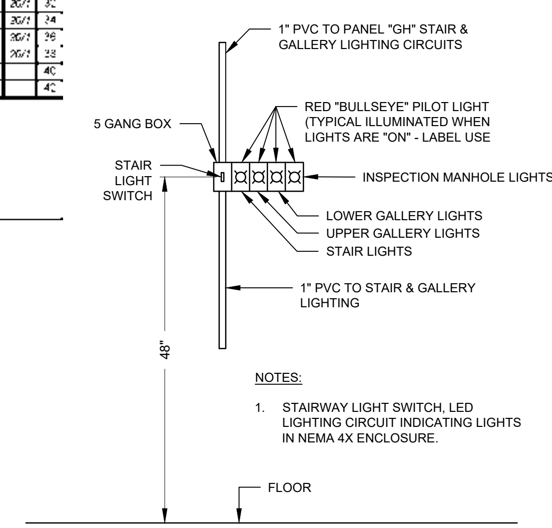
Existing PANEL DESIGNATION **GH**	TYPE: BRANCH CIRCUIT NUMBER OF POLES: 30 MAIN BUS RATING: MAIN RATING:	LOCATION: GATE HOUSE VOLTAGE: 208/120V, 3-PHASE, 4-WIRE PANEL MOUNTING: SURFACE PANEL ENCLOSURE (NEMA): SHORT CIRCUIT:

CIR. No.	CIR. BKR	DESCRIPTION	WIRE	GROUND	CONDUIT	LOAD - KVA ΦA	ΦB	ΦC	LOAD - KVA ΦA	ΦB	ΦC	WIRE	GROUND	CONDUIT	DESCRIPTION	CIR. BKR	CIR. No.
1	20/1	GATE HOUSE LTS & PHOTOCELL				-			-						GATE HOUSE RECEPTACLES	20/1	2
3	20/2	SPILLWAY FLOOD LIGHTS					0.70			-					LOWER GALLERY & MH LIGHT	20/1	4
5								0.70			-				PROG & HEATER RECEPTACLES	20/1	6
7	20/2	DRIVEWAY LIGHTS				1.92			0.40						HEAT TRACE IN RES. ST. WELL	15/2	8
9							1.92			0.40							10
11	20/1	WALL FLOOD LIGHTS						0.52			-						12
13	20/1	UPPER GALLERY & STAIR LIGHT				1.47			-						CRANE POWER	70/3	14
15	20/1	VENT FAN & DAMP MOTORS															16
17	20/1	STAIR & GALLERY RECEPTACLE						0.80			0.40				STAIRWAY LIGHTING	20/1	18
19	30/3	RUBBER DAM BLOWER				-			0.95						MANHOLE LIGHTING	20/1	20
21							-			0.60					INSPECTION WELL LIGHTING	20/1	22
23								-			-				PROG & HEATER RECEPTACLES	20/1	24
25	20/1	FLOOR RECEPTACLES							1.00						ROADWAY LIGHTS	30/3	26
27	20/1	FLOOR RECEPTACLES					-			1.00							28
29	20/1	CCTV CABINET						-			1.00						30
31	20/3	SPARE				-			0.80						GALLERY RECEPTACLES #2	20/1	32
33							-			1.60					MANHOLE FLOOD LTG REC.	20/1	34
35								-			0.40				WATER QUALITY SAMPLE PUMP	20/1	36
37	30/3	SAMPLE PUMP				-			-						SPARE	20/1	38
39							-			-					SPACE		40
41								-			-				SPACE		42
					TOTAL	-	-	-	-	-	-	TOTAL					

PANEL CONNECTED LOAD

ΦA -
ΦB -
ΦC -
\- *TOTAL*

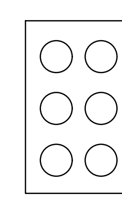
X SOLID NEUTRAL BUS
X EQUIPMENT GROUND BUS



NOTES:

1. STAIRWAY LIGHT SWITCH, LED LIGHTING CIRCUIT INDICATING LIGHTS IN NEMA 4X ENCLOSURE.

1 / E-15 DETAIL "A"
SCALE:NONE



INDICATING LIGHT SWITCH BOX LAYOUT AT LEFT. HARDWARE LISTED BELOW.

ENCLOSURE: HOFFMAN E6PBSS (1)
LIGHTS: ALLEN BRADLEY 800H-QRTH2R (5)
SWITCH: ALLEN BRADLEY800H-HR2D1 (1)
LEGEND PLATES: ENGRAVED AS REQUIRED (6)

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

DESIGNED	CADD	SCALE
BAS	EEF	AS SHOWN
DRAWN	CHECKED	APPROVED
EEF	WBH	QA

Gannett Fleming

THE MAHONING VALLEY SANITARY DISTRICT
MINERAL RIDGE, OHIO

MINERAL RIDGE DAM
REHABILITATION PROJECT

GATE HOUSE
FLOOR PLAN

JOB NO.	SHEET NO.
58721	179 OF 224
DATE	DRAWING NO.
FEB 2022	E18

OHIO HISTORY CONNECTION

In reply refer to
2018-TRU-43565

January 7, 2019

Steven C. Smith
Gannett Fleming, Inc.
P.O. Box 67100
Harrisburg, PA 17106-7100

Dear Mr. Smith:

RE: Mineral Ridge Dam Rehab, Mineral Ridge, Trumbull County, Ohio

This is in response to the receipt, on December 10, 2018, of *A Phase I Archaeological Survey for the Proposed Mineral Ridge Dam Rehabilitation Project, Weathersfield Township, Trumbull County, Ohio.* The comments of the Ohio Historic Preservation Office are submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended.

Subsurface testing and intensive visual inspection of the project area resulted in the identification of two previously unrecorded archaeological sites. These sites, 33 TR 279 and 33 TR 280, are small lithic scatter typical of short term occupations. Site 33 TR 279 also contains a small historic artifact scatter. These sites are not likely to yield additional information about Ohio prehistory or history. Based on the information provided, it is my opinion that these properties are not eligible for inclusion in the National Register of Historic Places.

Additionally, this office concurs with the finding that the dam, gatehouse and TRU-2460-23 are potentially eligible for inclusion in the National Register of Historic Places under Criterion A and C. As the undertaking is currently designed, this office will not object to a finding of No Adverse Effect if proposed by the United States Army Corps of Engineers. No further coordination is required unless the project changes or additional archaeological remains are discovered during the course of the project. In such a situation, this office should be contacted as per 36 CFR 800.13.

Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs. If you have any questions, please contact me at (614) 298-2000, or by email at nyoung@ohiohistory.org.

Sincerely,

Diana Welling, Department Head
Resource Protection and Review

Re: FEMA Scoping Document Mineral Ridge Dam, Trumbull County

Pearl, Tamara L. <tpearl@GFNET.com>

Thu 9/1/2022 9:41 AM

To: steven.baker@usda.gov <steven.baker@usda.gov>;Castaldi, Duane <Duane.Castaldi@fema.dhs.gov>

Cc: Poulson, Karen <Karen.Poulson@fema.dhs.gov>

1 attachments (2 MB)

HMGP-DR-4507-31-R-OH-MineralRidgeDamRehab-Scoping-2022817.pdf.pdf;

Good morning Steven,

Thank you for your email. During the scoping phase for the subject project, we've reached out to all agencies that we feel could potentially have scoping concerns to seek their feedback. NRCS is included on this list. However, if NRCS feels their governing regulations will not be impacted by the proposed action, a response is not required.

I hope this helps clarify why the NRCS Trumbull office received the scoping materials. Please let us know if you have any additional questions.

Thank you!
Tami

Tami Pearl, EIT, ENV SP | Project Environmental Scientist
Gannett Fleming | One Penn Plaza, 250 W 34th St, Suite 630, New York, NY 10119
C 914.208.1128 | **O** 212.884.2291 | tpearl@gfnet.com
Excellence Delivered As Promised
gannettfleming.com | Stay connected: *LinkedIn* | *Facebook* | *Twitter*

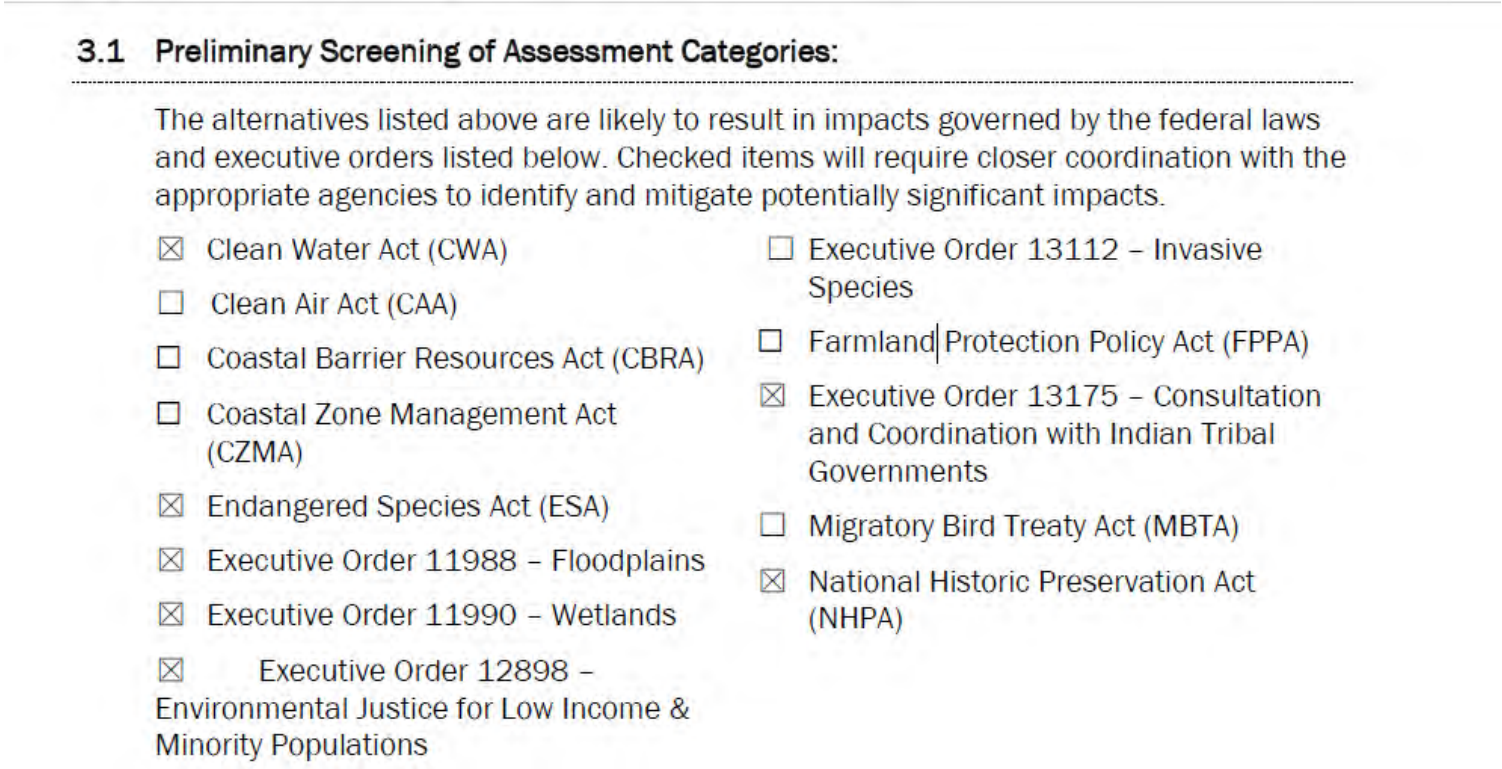
From: Baker, Steven - NRCS, Columbus, OH <steven.baker@usda.gov>
Sent: Wednesday, August 31, 2022 10:07 AM
To: duane.castaldi@fema.dhs.gov <duane.castaldi@fema.dhs.gov>; Pearl, Tamara L. <tpearl@GFNET.com>
Subject: FEMA Scoping Document Mineral Ridge Dam, Trumbull County

[EXTERNAL EMAIL]: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning Duane and Tamara.

Our Trumbull office has received the attached request from you, and I am not sure what response you would need from us, so thought I would email and ask for clarification.

From page 9, I see this:



3.1 Preliminary Screening of Assessment Categories:

The alternatives listed above are likely to result in impacts governed by the federal laws and executive orders listed below. Checked items will require closer coordination with the appropriate agencies to identify and mitigate potentially significant impacts.

- ☒ Clean Water Act (CWA)
- ☐ Clean Air Act (CAA)
- ☐ Coastal Barrier Resources Act (CBRA)
- ☐ Coastal Zone Management Act (CZMA)
- ☒ Endangered Species Act (ESA)
- ☒ Executive Order 11988 – Floodplains
- ☒ Executive Order 11990 – Wetlands
- ☒ Executive Order 12898 – Environmental Justice for Low Income & Minority Populations
- ☐ Executive Order 13112 – Invasive Species
- ☐ Farmland Protection Policy Act (FPPA)
- ☒ Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments
- ☐ Migratory Bird Treaty Act (MBTA)
- ☒ National Historic Preservation Act (NHPA)

NRCS would only be able to comment on the FPPA which is not checked off. For what it is worth, land used for water storage is not subject to the FPPA.

Please let me know if I am missing anything.

Thanks,

Steve Baker

State Soil Scientist
614-255-2483
Steven.baker@usda.gov

Ohio Environmental Protection Agency

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

September 15, 2022

TRANSMITTED ELECTRONICALLY

Federal Emergency Management
Agency, Region 5
c/o Duane Castaldi, Regional
Environmental Officer
536 South Clark Street, 6th Floor
Chicago, IL 60605-1521 1

RE: Mineral Ridge Dam Rehabilitation
General Correspondence
Trumbull County
Surface Water Program

Subject: FEMA Project ID: DR-4507-OH

Dear Duane Castaldi:

The Ohio EPA has reviewed the Mineral Ridge Dam Rehabilitation and Meander Creek Reservoir, Environmental Assessment Scoping Document.

Ohio EPA has reviewed the document and have no comments.

At this time, we will not be issuing hard-copy mail. This letter is an official response from Ohio EPA that will be maintained as a public record. If you have any questions regarding this letter, please contact me at (330) 963-1204.

Sincerely,

Kurt M. Princic
District Chief
Northeast District Office

KMP/ams

GANNETT FLEMING

Excellence Delivered As Promised

TELEPHONE CONVERSATION LOG

CALL PLACED BY:	TAMARA PEARL		
GF JOB NO.:	072966		
GF JOB NAME:	MAHONING VALLEY DAM & SPILLWAY IMPROVEMENT ENVIRONMENTAL ASSESSMENT		
GF PHONE NUMBER:	N/A		
DATE:	09/30/2022	TIME:	~3:00PM
COMPANY:	TRUMBULL COUNTY PLANNING COMMISSION		
SPOKE WITH:	KIMBERLY VAUGHN		
PHONE NUMBER:	330-675-2480		
SUBJECT:	MINERAL RIDGE DAM REHABILITATION CUMULATIVE IMPACTS ANALYSIS IN TRUMBULL COUNTY		

ITEMS DISCUSSED:

Status of any development plans within Trumbull County to document in NEPA environmental analysis for the proposed Mineral Ridge Dam Rehabilitation project. Ms. Vaughn indicated that there are no development plans at the moment within Trumbull County. Ms. Vaughn recommended contacting several other entities, including the Weathersfield Township Administration Office and the Ohio Dept. of Transportation. Both entities were part of the scoping consultation and thus not contacted post-conversation.

FOLLOW UP NOTES/ACTION ITEMS: N/A

Appendix B – Tribal Nation Consultation

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605

FEMA

July 22, 2022

Larry Heady, Tribal Historic Preservation Officer
Delaware Tribe of Indians
125 Dorry Lane
Grants Pass, Oregon 97527

Re: Mahoning Valley Sanitary District (MVSD) Mineral Ridge Dam Rehabilitation, Trumbull County, Ohio
FEMA Project #4507.31 Advanced Assistance / 41.15353, -80.77934

Dear Mr. Heady:

The Federal Emergency Management Agency (FEMA) recognizes the special and unique legal relationship that exists between the federal government and federally recognized American Indian Tribes (Tribes). FEMA also recognizes that Tribes may attach religious and cultural significance to historic properties located on aboriginal, ancestral, or ceded lands that are not contiguous with reservation lands. For this reason, FEMA consults with Tribes regarding the possible effects of FEMA-funded undertakings on cultural properties of historic or traditional significance, sometimes referred to as Traditional Cultural Properties (TCPs). The purpose of this communication is to provide information regarding the captioned FEMA-funded project and to invite comment on whether the Delaware Tribe of Indians or other Tribes have interests in the areas potentially affected by this undertaking.

MVSD proposes rehabilitation of the Mineral Ridge Dam to address dam safety requirements. The MVSD applied to the Federal Emergency Management Agency (FEMA) through the Ohio Emergency Management Agency (OEMA) for grant assistance under the Hazard Mitigation Grant Program (HMGP). The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5170c. The key purpose of FEMA's HMGP Program is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. The project reviewed here is related to Federal disaster declaration DR-4507-OH, Covid-19 Pandemic beginning January 20, 2020, and continuing. The disaster was declared on March 31, 2020, and designated the entire state as eligible for public assistance. The declaration also made HMGP assistance available statewide to fund hazard mitigation measures.

The Mineral Ridge Dam, constructed in 1931, currently does not meet the required factor of safety for numerous criteria that are evaluated for the stability of dams. It is considered unstable if the probable maximum flood (PMF) were to occur and if maximum credible earthquake were to occur. Due to the increase in intense precipitation, the likelihood of the PMF occurring is increased. The dam does not meet U.S. Army Corps of Engineers (USACE) stability requirements for several loading cases which are also considered normal operating conditions. The Mineral Ridge Dam impounds the Meander Reservoir which is the sole drinking water source for 220,000 customers. There currently is no back-up water source for the region should the dam fail and the reservoir be lost. The proposed rehabilitation of the Mineral Ridge Dam includes the repair and lining of the principal spillway ogee weir, replacement of the auxiliary spillway system, and embankment modifications which include a chimney and toe drainage system as well as flattening of slopes. The project location is noted on the enclosed map.

In accordance with the National Historic Preservation Act (NRHP) and other legislation, FEMA determined that this project constitutes a federally assisted undertaking requiring review under Section 106 of the National Historic Preservation Act of 1966, as amended. In accord with 36 CFR 800.2(c)(2)(ii), FEMA is providing this opportunity for the Delaware Tribe of Indians to identify concerns about historic properties that may be affected by this undertaking. Consultation was previously initiated with SHPO for the same project as proposed by the USACE regarding the potential of this project to affect historic properties. Consultation included a Phase I Archaeological Investigation and a Historic Assessment of the project area. Subsurface testing and intensive visual inspection of the project area resulted in the identification of two previously unrecorded archaeological sites. These sites, 33TR279 and 33TR280, are small lithic scatters typical of short-term occupation. Site 33TR279 also contained a small historic scatter. In a letter of January 7, 2019, SHPO concurred that 33TR279 and 33TR280 are not eligible to the NRHP. SHPO additionally concurred with a no adverse effect finding for the proposed work on the dam, the gatehouse, and TRU-2460-23 (Mahoning Valley Sanitary District, Water Treatment Plant) that are eligible for inclusion on the NRHP.

We invite your comments on the potential impacts this undertaking may have on lands traditionally used by or sacred to the Delaware Tribe of Indians or other Native American groups. We understand the sensitive nature of much of the information regarding TCPs and assure you in advance that any information you provide will be considered privileged and confidential. In order to safeguard TCPs of interest to Native Americans, we are contacting the following Tribes to request information regarding their interest in this undertaking.

- Delaware Tribe of Indians
- Nottawaseppi Huron Band of the Potawatomi Tribe
- Seneca Nation of Indians
- Seneca-Cayuga Nation

Receiving notice of your interest to join the consultation regarding this undertaking or notice of Tribes other than those listed above that may have an interest in this undertaking would improve FEMA's efforts to protect resources that may exist in the areas noted on the enclosures. A response form has been provided for your convenience.

We would appreciate a response by email from your office within thirty (30) days of your receipt of this documentation. If FEMA receives no response from your office within thirty (30) days, we will move forward with the project without comment from the Delaware Tribe of Indians. If you have any questions or comments, please do not hesitate to contact me at fema-r5-environmental@fema.dhs.gov or at 312-408-5549.

Sincerely,

Duane Castaldi
Regional Environmental Officer
FEMA Region 5

Sent by email to lheady@delawaretribe.org

++++++++*You may email this page to fema-r5-environmental@fema.dhs.gov* ++++++++

Re: Mahoning Valley Sanitary District (MVSD) Mineral Ridge Dam Rehabilitation, Trumbull County, Ohio
FEMA Project #4507.31 Advanced Assistance / 41.15353, -80.77934

☐ The Delaware Tribe of Indians has no interest in the area potentially affected by the captioned undertaking.

☐ The Delaware Tribe of Indians has an interest in the area potentially affected by the captioned undertaking. Contact information is provided below.

☐ The Tribal Nations noted below may have an interest in the area potentially affected by this undertaking.

_____ _____

Delaware Tribe of Indians Date

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605

FEMA

July 22, 2022

Douglas Taylor, Tribal Historic Preservation Officer
Nottawaseppi Huron Band of the Potawatomi
1301 T Drive S
Pine Creek Indian Reservation
Fulton, Michigan 49052

Re: Mahoning Valley Sanitary District (MVSD) Mineral Ridge Dam Rehabilitation, Trumbull County, Ohio
FEMA Project #4507.31 Advanced Assistance / 41.15353, -80.77934

Dear Mr. Taylor:

The Federal Emergency Management Agency (FEMA) recognizes the special and unique legal relationship that exists between the federal government and federally recognized American Indian Tribes (Tribes). FEMA also recognizes that Tribes may attach religious and cultural significance to historic properties located on aboriginal, ancestral, or ceded lands that are not contiguous with reservation lands. For this reason, FEMA consults with Tribes regarding the possible effects of FEMA-funded undertakings on cultural properties of historic or traditional significance, sometimes referred to as Traditional Cultural Properties (TCPs). The purpose of this communication is to provide information regarding the captioned FEMA-funded project and to invite comment on whether the Nottawaseppi Huron Band of the Potawatomi or other Tribes have interests in the areas potentially affected by this undertaking.

MVSD proposes rehabilitation of the Mineral Ridge Dam to address dam safety requirements. The MVSD applied to the Federal Emergency Management Agency (FEMA) through the Ohio Emergency Management Agency (OEMA) for grant assistance under the Hazard Mitigation Grant Program (HMGP). The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5170c. The key purpose of FEMA's HMGP Program is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. The project reviewed here is related to Federal disaster declaration DR-4507-OH, Covid-19 Pandemic beginning January 20, 2020, and continuing. The disaster was declared on March 31, 2020, and designated the entire state as eligible for public assistance. The declaration also made HMGP assistance available statewide to fund hazard mitigation measures.

The Mineral Ridge Dam, constructed in 1931, currently does not meet the required factor of safety for numerous criteria that are evaluated for the stability of dams. It is considered unstable if the probable maximum flood (PMF) were to occur and if maximum credible earthquake were to occur. Due to the increase in intense precipitation, the likelihood of the PMF occurring is increased. The dam does not meet U.S. Army Corps of Engineers (USACE) stability requirements for several loading cases which are also considered normal operating conditions. The Mineral Ridge Dam impounds the Meander Reservoir which is the sole drinking water source for 220,000 customers. There currently is no back-up water source for the region should the dam fail and the reservoir be lost. The proposed rehabilitation of the

Mineral Ridge Dam includes the repair and lining of the principal spillway ogee weir, replacement of the auxiliary spillway system, and embankment modifications which include a chimney and toe drainage system as well as flattening of slopes. The project location is noted on the enclosed map.

In accordance with the National Historic Preservation Act (NRHP) and other legislation, FEMA determined that this project constitutes a federally assisted undertaking requiring review under Section 106 of the National Historic Preservation Act of 1966, as amended. In accord with 36 CFR 800.2(c)(2)(ii), FEMA is providing this opportunity for the Nottawaseppi Huron Band of the Potawatomi to identify concerns about historic properties that may be affected by this undertaking. Consultation was previously initiated with SHPO for the same project as proposed by the USACE regarding the potential of this project to affect historic properties. Consultation included a Phase I Archaeological Investigation and a Historic Assessment of the project area. Subsurface testing and intensive visual inspection of the project area resulted in the identification of two previously unrecorded archaeological sites. These sites, 33TR279 and 33TR280, are small lithic scatters typical of short-term occupation. Site 33TR279 also contained a small historic scatter. In a letter of January 7, 2019, SHPO concurred that 33TR279 and 33TR280 are not eligible to the NRHP. SHPO additionally concurred with a no adverse effect finding for the proposed work on the dam, the gatehouse, and TRU-2460-23 (Mahoning Valley Sanitary District, Water Treatment Plant) that are eligible for inclusion on the NRHP.

We invite your comments on the potential impacts this undertaking may have on lands traditionally used by or sacred to the Nottawaseppi Huron Band of the Potawatomi or other Native American groups. We understand the sensitive nature of much of the information regarding TCPs and assure you in advance that any information you provide will be considered privileged and confidential. In order to safeguard TCPs of interest to Native Americans, we are contacting the following Tribes to request information regarding their interest in this undertaking.

- Delaware Tribe of Indians
- Nottawaseppi Huron Band of the Potawatomi Tribe
- Seneca Nation of Indians
- Seneca-Cayuga Nation

Receiving notice of your interest to join the consultation regarding this undertaking or notice of Tribes other than those listed above that may have an interest in this undertaking would improve FEMA's efforts to protect resources that may exist in the areas noted on the enclosures. A response form has been provided for your convenience.

We would appreciate a response by email from your office within thirty (30) days of your receipt of this documentation. If FEMA receives no response from your office within thirty (30) days, we will move forward with the project without comment from the Nottawaseppi Huron Band of the Potawatomi. If you have any questions or comments, please do not hesitate to contact me at fema-r5-environmental@fema.dhs.gov or at 312-408-5549.

Sincerely,

Duane Castaldi
Regional Environmental Officer
FEMA Region 5

Sent by email to dgreen@nhbpi.com

++++++++*You may email this page to fema-r5-environmental@fema.dhs.gov* ++++++++

Re: Mahoning Valley Sanitary District (MVSD) Mineral Ridge Dam Rehabilitation, Trumbull County, Ohio
FEMA Project #4507.31 Advanced Assistance / 41.15353, -80.77934

☐ The Nottawaseppi Huron Band of the Potawatomi has no interest in the area potentially affected by the captioned undertaking.

☐ The Nottawaseppi Huron Band of the Potawatomi has an interest in the area potentially affected by the captioned undertaking. Contact information is provided below.

☐ The Tribal Nations noted below may have an interest in the area potentially affected by this undertaking.

_____ _____

Nottawaseppi Huron Band of the Potawatomi Date

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605

FEMA

July 22, 2022

Joe Stahlman, Tribal Historic Preservation Officer
Seneca Nation of Indians
82 W. Hetzel St.
Salamanca, New York 14779

Re: Mahoning Valley Sanitary District (MVSD) Mineral Ridge Dam Rehabilitation, Trumbull County, Ohio
FEMA Project #4507.31 Advanced Assistance / 41.15353, -80.77934

Dear Dr. Stahlman:

The Federal Emergency Management Agency (FEMA) recognizes the special and unique legal relationship that exists between the federal government and federally recognized American Indian Tribes (Tribes). FEMA also recognizes that Tribes may attach religious and cultural significance to historic properties located on aboriginal, ancestral, or ceded lands that are not contiguous with reservation lands. For this reason, FEMA consults with Tribes regarding the possible effects of FEMA-funded undertakings on cultural properties of historic or traditional significance, sometimes referred to as Traditional Cultural Properties (TCPs). The purpose of this communication is to provide information regarding the captioned FEMA-funded project and to invite comment on whether the Seneca Nation of Indians or other Tribes have interests in the areas potentially affected by this undertaking.

MVSD proposes rehabilitation of the Mineral Ridge Dam to address dam safety requirements. The MVSD applied to the Federal Emergency Management Agency (FEMA) through the Ohio Emergency Management Agency (OEMA) for grant assistance under the Hazard Mitigation Grant Program (HMGP). The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5170c. The key purpose of FEMA's HMGP Program is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. The project reviewed here is related to Federal disaster declaration DR-4507-OH, Covid-19 Pandemic beginning January 20, 2020, and continuing. The disaster was declared on March 31, 2020, and designated the entire state as eligible for public assistance. The declaration also made HMGP assistance available statewide to fund hazard mitigation measures.

The Mineral Ridge Dam, constructed in 1931, currently does not meet the required factor of safety for numerous criteria that are evaluated for the stability of dams. It is considered unstable if the probable maximum flood (PMF) were to occur and if maximum credible earthquake were to occur. Due to the increase in intense precipitation, the likelihood of the PMF occurring is increased. The dam does not meet U.S. Army Corps of Engineers (USACE) stability requirements for several loading cases which are also considered normal operating conditions. The Mineral Ridge Dam impounds the Meander Reservoir which is the sole drinking water source for 220,000 customers. There currently is no back-up water source for the region should the dam fail and the reservoir be lost. The proposed rehabilitation of the Mineral Ridge Dam includes the repair and lining of the principal spillway ogee weir, replacement of the

auxiliary spillway system, and embankment modifications which include a chimney and toe drainage system as well as flattening of slopes. The project location is noted on the enclosed map.

In accordance with the National Historic Preservation Act (NRHP) and other legislation, FEMA determined that this project constitutes a federally assisted undertaking requiring review under Section 106 of the National Historic Preservation Act of 1966, as amended. In accord with 36 CFR 800.2(c)(2)(ii), FEMA is providing this opportunity for the Seneca Nation of Indians to identify concerns about historic properties that may be affected by this undertaking. Consultation was previously initiated with SHPO for the same project as proposed by the USACE regarding the potential of this project to affect historic properties. Consultation included a Phase I Archaeological Investigation and a Historic Assessment of the project area. Subsurface testing and intensive visual inspection of the project area resulted in the identification of two previously unrecorded archaeological sites. These sites, 33TR279 and 33TR280, are small lithic scatters typical of short-term occupation. Site 33TR279 also contained a small historic scatter. In a letter of January 7, 2019, SHPO concurred that 33TR279 and 33TR280 are not eligible to the NRHP. SHPO additionally concurred with a no adverse effect finding for the proposed work on the dam, the gatehouse, and TRU-2460-23 (Mahoning Valley Sanitary District, Water Treatment Plant) that are eligible for inclusion on the NRHP.

We invite your comments on the potential impacts this undertaking may have on lands traditionally used by or sacred to the Seneca Nation of Indians or other Native American groups. We understand the sensitive nature of much of the information regarding TCPs and assure you in advance that any information you provide will be considered privileged and confidential. In order to safeguard TCPs of interest to Native Americans, we are contacting the following Tribes to request information regarding their interest in this undertaking.

- Delaware Tribe of Indians
- Nottawaseppi Huron Band of the Potawatomi Tribe
- Seneca Nation of Indians
- Seneca-Cayuga Nation

Receiving notice of your interest to join the consultation regarding this undertaking or notice of Tribes other than those listed above that may have an interest in this undertaking would improve FEMA's efforts to protect resources that may exist in the areas noted on the enclosures. A response form has been provided for your convenience.

We would appreciate a response by email from your office within thirty (30) days of your receipt of this documentation. If FEMA receives no response from your office within thirty (30) days, we will move forward with the project without comment from the Seneca Nation of Indians. If you have any questions or comments, please do not hesitate to contact me at fema-r5-environmental@fema.dhs.gov or at 312-408-5549.

Sincerely,

Duane Castaldi
Regional Environmental Officer
FEMA Region 5

Sent by email to joe.stahlman@sni.org

++++++++*You may email this page to fema-r5-environmental@fema.dhs.gov* ++++++++

Re: Mahoning Valley Sanitary District (MVSD) Mineral Ridge Dam Rehabilitation, Trumbull County, Ohio
FEMA Project #4507.31 Advanced Assistance / 41.15353, -80.77934

☐ The Seneca Nation of Indians has no interest in the area potentially affected by the captioned undertaking.

☐ The Seneca Nation of Indians has an interest in the area potentially affected by the captioned undertaking. Contact information is provided below.

☐ The Tribal Nations noted below may have an interest in the area potentially affected by this undertaking.

_____ _____

Seneca Nation of Indians Date

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605

FEMA

July 22, 2022

William Tarrant, Tribal Historic Preservation Officer
Seneca-Cayuga Nation
PO BOX 45322
Grove, Oklahoma 74345

Re: Mahoning Valley Sanitary District (MVSD) Mineral Ridge Dam Rehabilitation, Trumbull County, Ohio
FEMA Project #4507.31 Advanced Assistance / 41.15353, -80.77934

Dear Mr. Tarrant:

The Federal Emergency Management Agency (FEMA) recognizes the special and unique legal relationship that exists between the federal government and federally recognized American Indian Tribes (Tribes). FEMA also recognizes that Tribes may attach religious and cultural significance to historic properties located on aboriginal, ancestral, or ceded lands that are not contiguous with reservation lands. For this reason, FEMA consults with Tribes regarding the possible effects of FEMA-funded undertakings on cultural properties of historic or traditional significance, sometimes referred to as Traditional Cultural Properties (TCPs). The purpose of this communication is to provide information regarding the captioned FEMA-funded project and to invite comment on whether the Seneca-Cayuga Nation or other Tribes have interests in the areas potentially affected by this undertaking.

MVSD proposes rehabilitation of the Mineral Ridge Dam to address dam safety requirements. The MVSD applied to the Federal Emergency Management Agency (FEMA) through the Ohio Emergency Management Agency (OEMA) for grant assistance under the Hazard Mitigation Grant Program (HMGP). The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5170c. The key purpose of FEMA's HMGP Program is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. The project reviewed here is related to Federal disaster declaration DR-4507-OH, Covid-19 Pandemic beginning January 20, 2020, and continuing. The disaster was declared on March 31, 2020, and designated the entire state as eligible for public assistance. The declaration also made HMGP assistance available statewide to fund hazard mitigation measures.

The Mineral Ridge Dam, constructed in 1931, currently does not meet the required factor of safety for numerous criteria that are evaluated for the stability of dams. It is considered unstable if the probable maximum flood (PMF) were to occur and if maximum credible earthquake were to occur. Due to the increase in intense precipitation, the likelihood of the PMF occurring is increased. The dam does not meet U.S. Army Corps of Engineers (USACE) stability requirements for several loading cases which are also considered normal operating conditions. The Mineral Ridge Dam impounds the Meander Reservoir which is the sole drinking water source for 220,000 customers. There currently is no back-up water source for the region should the dam fail and the reservoir be lost. The proposed rehabilitation of the Mineral Ridge Dam includes the repair and lining of the principal spillway ogee weir, replacement of the

auxiliary spillway system, and embankment modifications which include a chimney and toe drainage system as well as flattening of slopes. The project location is noted on the enclosed map.

In accordance with the National Historic Preservation Act (NRHP) and other legislation, FEMA determined that this project constitutes a federally assisted undertaking requiring review under Section 106 of the National Historic Preservation Act of 1966, as amended. In accord with 36 CFR 800.2(c)(2)(ii), FEMA is providing this opportunity for the Seneca-Cayuga Nation to identify concerns about historic properties that may be affected by this undertaking. Consultation was previously initiated with SHPO for the same project as proposed by the USACE regarding the potential of this project to affect historic properties. Consultation included a Phase I Archaeological Investigation and a Historic Assessment of the project area. Subsurface testing and intensive visual inspection of the project area resulted in the identification of two previously unrecorded archaeological sites. These sites, 33TR279 and 33TR280, are small lithic scatters typical of short-term occupation. Site 33TR279 also contained a small historic scatter. In a letter of January 7, 2019, SHPO concurred that 33TR279 and 33TR280 are not eligible to the NRHP. SHPO additionally concurred with a no adverse effect finding for the proposed work on the dam, the gatehouse, and TRU-2460-23 (Mahoning Valley Sanitary District, Water Treatment Plant) that are eligible for inclusion on the NRHP.

We invite your comments on the potential impacts this undertaking may have on lands traditionally used by or sacred to the Seneca-Cayuga Nation or other Native American groups. We understand the sensitive nature of much of the information regarding TCPs and assure you in advance that any information you provide will be considered privileged and confidential. In order to safeguard TCPs of interest to Native Americans, we are contacting the following Tribes to request information regarding their interest in this undertaking.

- Delaware Tribe of Indians
- Nottawaseppi Huron Band of the Potawatomi Tribe
- Seneca Nation of Indians
- Seneca-Cayuga Nation

Receiving notice of your interest to join the consultation regarding this undertaking or notice of Tribes other than those listed above that may have an interest in this undertaking would improve FEMA's efforts to protect resources that may exist in the areas noted on the enclosures. A response form has been provided for your convenience.

We would appreciate a response by email from your office within thirty (30) days of your receipt of this documentation. If FEMA receives no response from your office within thirty (30) days, we will move forward with the project without comment from the Seneca-Cayuga Nation. If you have any questions or comments, please do not hesitate to contact me at fema-r5-environmental@fema.dhs.gov or at 312-408-5549.

Sincerely,

Duane Castaldi
Regional Environmental Officer
FEMA Region 5

Sent by email to wtarrant@sctribe.com

++++++++*You may email this page to fema-r5-environmental@fema.dhs.gov* ++++++++

Re: Mahoning Valley Sanitary District (MVSD) Mineral Ridge Dam Rehabilitation, Trumbull County, Ohio
FEMA Project #4507.31 Advanced Assistance / 41.15353, -80.77934

☐ The Seneca-Cayuga Nation has no interest in the area potentially affected by the captioned undertaking.

☐ The Seneca-Cayuga Nation has an interest in the area potentially affected by the captioned undertaking. Contact information is provided below.

☐ The Tribal Nations noted below may have an interest in the area potentially affected by this undertaking.

_____ _____

Seneca-Cayuga Nation Date

Appendix C – Township Meeting Notes

(TO BE POPULATED PRIOR TO FINAL EA SUBMITTAL)

Appendix D – Public Notice and Comments

Tribune-Chronicle Legal Ads Print Ad Proof

ADNo: 7344 Customer Number: C18192
Customer Name: Company: MAHONING VALLEY SANI
Address: 1181 OHLTOWN-MCDONAL
City/St/Zip: MINERAL RIDGE ,OH 44440
Phone: (330) 652-3614 Solicitor: 153
Category: 9000 Class: 9005 Rate: LE-0 Start: 5-27-2022 Stop: 5-27-2022
Lines: 26 Inches: 2.51 Words: 209

Credit Card: Expire:
Order Number:
Cost: 237.64 Extra Charges: .00 Adjustments: .00
Payments: .00 Discount: .00
Balance: 237.64

PUBLIC NOTICE

The Mahoning Valley Sanitary District, 1181 Ohltown McDonald Road, Mineral Ridge, Mahoning County, in conjunction with the Ohio Emergency Management Agency, has applied for Hazard Mitigation Assistance (HMA) funding from the Federal Emergency Management Agency for the Mineral Ridge Dam Rehabilitation Environmental Assessment. The objective of HMA programs is to fund mitigation measures that reduce the risk of loss of life and property from future hazard events or disasters. The Mineral Ridge Dam became operational in 1931. It is in need of rehabilitation to sustain a probable maximum flood. An Environmental Assessment will be completed to determine any potential impacts.

Under the National Environmental Policy Act, EO 11988 and EO 11990, public notice is required of any federal actions that may affect floodplains or wetlands. Under the National Historic Preservation Act, public notice is also required for some projects which have the potential to affect historic properties. All necessary permits and approvals will be obtained prior to construction and completion of the project.

Public participation is encouraged. Those interested are invited to comment within 30 days by e-mail to fema-r5-environmental@fema.dhs.gov or by mail to:

Duane Castaldi, Regional Environmental Officer
FEMA Region V
536 South Clark Street, 6th Floor
Chicago, IL 60605

#147- 1T- May 27, 2022- #7344

Appendix E – Supporting Documentation

LARGE FILES CAN BE ACCESSED AT:

https://www.meanderwater.org/

EXECUTIVE ORDER 11988
Floodplain Management Checklist (44 CFR Part 9)

TITLE: Mineral Ridge Dam Rehabilitation Project

PROPOSED ACTION: Rehabilitate Mineral Ridge Dam located on Meander Creek in Weathersfield Township, Trumbull County, Ohio. Major project features include permanently flattening the embankment slopes, repairs to the principal spillway, and replacement of the auxiliary spillway.

APPLICABILITY: Actions which have the potential to affect floodplains or their occupants, or which are subject to potential harm by location in floodplains.

☒ **YES** ☐ **NO** The proposed action could potentially adversely affect the floodplain.

☐ **YES** ☒ **NO** The proposed action could potentially be adversely affected by the floodplain.

REMARKS: A No-Rise Certification was prepared by Gannett Fleming, signed on February 9, 2022, and approved by the Trumbull County Planning Commission on March 28, 2022 as part of the Flood Hazard Area Development Permit. The dam and appurtenent structures are designed to withstand flood events exceeding the 500-year event without potential harm. All of the proposed auxiliary spillway design alternatives resulted in identical unavoidable minor wetland impacts.

IF BOTH ANSWERS ARE NO, REVIEW IS COMPLETE; OTHERWISE CONTINUE WITH REVIEW.

Mark the review steps required per applicability: ☒ All 8 / ☐ 1, 4, 5, 8 / ☐ 1-6, 8

CRITICAL ACTION: ☐ **YES** Review against 500 Year floodplain.
☒ **NO** Review against 100 Year floodplain

SCOPE OF WORK: So that it may continue to provide a safe and reliable water supply source to it's 220,000 customers, the Mahoning Valley Sanitary District (MVSD) is proposing a dam rehabilitation project to address dam safety deficiencies identified at Mineral Ridge Dam to bring the facility into compliance with current ODNR and federal dam safety criteria, and address needed upgrades and repairs. The major components of the dam rehabilitation project include the following: replace the existing auxiliary spillway with a new roller-compacted concrete auxiliary spillway, extend the existing embankment concrete core wall approximately 0.3 feet above the computed Probable Maximum Flood (PMF) elevation, flatten the downstream embankment slope and install internal filter drains, modify and repair the existing principal spillway, including raising and buttressing the existing training walls with new reinforced concrete walls, lining the

ogee surface and stilling basin with a new reinforced concrete liner slab, installing rock anchors in the stilling basin slab to improve stability and concrete surface repairs, install post-tensioned anchors into the dam's foundation to improve the stability of the principal spillway concrete ogee structure and the gate house structure, replace the existing inflatable rubber dam and controls at the principal spillway, replace the stairway on the east embankment slope, remove the existing spoil pile to improve surface drainage adjacent to the downstream toe of the east embankment slope, upgrade dam-related instrumentation, electrical and lighting systems on the gatehouse and road, improve the existing east and west access roads leading to the dam, and re-grade the low area at the east abutment of the dam to eliminate the area of overtopping during the PMF.

STEP 1: Determine whether the proposed action is in the 100-year floodplain, or, for critical actions, in the 500-year floodplain.

FLOOD HAZARD DATA:

☒ **YES** ☐ **NO** FIRM Panels 39155C0391D to 39155C0394D. Meander Creek Reservoir is Zone A. Meander Creek is Zone AE.

WETLAND DATA:

☒ The project is located in a wetland as mapped by the U.S. Fish and Wildlife Service's National Wetlands Inventory.
Wetland Classification Code: L1UBHh Dated: May 2018.

☒ The proposed action may be in a wetland based on evaluation from soil surveys, aerial photographs, site visit or other data.

☐ The project is outside of a designated wetland but has potential to affect the wetland, including support or encouragement of wetland development.

IF THE ANSWERS IS YES, CONTINUE WITH THE FOLLOWING STEPS; OTHERWISE REVIEW IS COMPLETE.

STEP 2: Notify the public at the earliest possible time of the intent to carry out an action in a floodplain and involve the affected and interested public in the decision-making process.

☒ Notice was provided as part of a disaster cumulative notice.
Publication: FEMA–4507–DR–OH Public Notice and Ohio; Amendment No. 5 to Notice of a Major Disaster Declaration
Date: April 2, 2020 and September 24, 2021, respectively

☐ Project-specific notice provided.
Publication: Click or tap here to enter text.
Date: Click or tap here to enter text.

☐ Per allowances noted at 44 CFR Part 9.12(d)6, this notice is understood to meet the requirements of both Steps 2 and 7.

STEP 3: Identify and evaluate practicable alternatives to locating the proposed action in a floodplain (including alternatives sites, actions and the "no action" option). If a practicable alternative exists outside the floodplain, FEMA must locate the action at the alternative site..

☐ **YES** ☒ **NO** Is there a practicable alternative site location outside of the floodplain / wetland?

REMARKS: The existing dam is located in Zone AE and cannot be rehabilitated without the proposed action in the floodplain.

☐ **YES** ☒ **NO** Is there a practicable alternative action outside of the floodplain / wetland that will not affect the floodplain / wetland?

REMARKS: The existing dam is located in Zone AE and cannot be rehabilitated without the proposed action in the floodplain. The wetland impacts are unavoidable for all of the alternatives besides the No Action Alternative.

☐ **YES** ☒ **NO** Is the No Action Alternative the most practicable alternative?

REMARKS: The no-action alternative would not eliminate the identified hazards to the water supply storage and the downstream population.

IF ANY ANSWER IS YES, THEN FEMA SHALL TAKE THAT ACTION AND THE REVIEW IS CONCLUDED.

STEP 4: Identify the potential direct and indirect impacts associated with the occupancy or modification of floodplains and the potential direct and indirect support of floodplain development that could result from the proposed action. 44CFR Part 9.10.

☐ **YES** ☒ **NO** Is the Proposed Action based on incomplete information?

☒ **YES** ☐ **NO** Is the proposed action in compliance with the NFIP?

☐ **YES** ☒ **NO** Does the proposed action increase the risk of flood loss?

☐ **YES** ☒ **NO** Will the proposed action result in an increased base discharge or increase the flood hazard potential to other properties or structures?

☒ **YES** ☐ **NO** Does the proposed action minimize the impact of floods on human health, safety and welfare?

☐ **YES** ☒ **NO** Will the proposed action induce future growth and development, which will potentially adversely affect the floodplain?

☒ **YES** ☐ **NO** Does the proposed action involve dredging and/or filling of a floodplain?

☐ **YES** ☒ **NO** Will the proposed action result in the discharge of pollutants into the floodplain?

☒ **YES** ☐ **NO** Does the proposed action avoid long- and short-term adverse impacts associated with the occupancy and modification of floodplains?

☐ **YES** ☒ **NO** Will the proposed action result in any indirect impacts that will affect the natural values and functions of floodplains or wetlands?

☐ **YES** ☒ **NO** Will the proposed action forego an opportunity to restore the natural and beneficial values served by floodplains?

☐ **YES** ☒ **NO** Does the proposed action restore and/or preserve the natural and beneficial values served by floodplains?

☒ **YES** ☐ **NO** Will the proposed action result in an increase to the useful life of a structure or facility?

REMARKS: The auxiliary spillway alternatives avoided impacts to the floodplains and resulted in identical wetland impacts. The principal spillway repairs will not impact wetlands and will not result in additional floodplain impacts compared to the existing condition.

STEP 5: Minimize the potential adverse impacts to or within floodplains identified under Step 4; restore and preserve the natural and beneficial values served by floodplains.

☒ **YES** ☐ **NO** For sites in the 100-Year floodplain, were flood hazard reduction techniques applied to the proposed action to minimize the flood impacts?

☒ **YES** ☐ **NO** Were avoidance and minimization measures applied to the proposed action to minimize the short and long-term impacts on the 100-Year floodplain?

☐ **YES** ☒ **NO** Were measures implemented to restore and preserve the natural and beneficial values of the floodplain?

REMARKS: The design sought to minimize or avoid flood impacts. Opportunities to restore or preserve the natural and beneficial values of the floodplain were minimal.

STEP 6: Reevaluate the proposed action to determine first, if it is still practicable in light of its exposure to flood hazards, the extent to which it will aggravate the hazards to others, and its potential to disrupt floodplain values and second, if alternatives preliminarily rejected at Step 3 are practicable in light of the information gained in Steps 4 and 5. FEMA shall not act in a floodplain unless it is the only practicable location.

☒ **YES** ☐ **NO** The action is still practicable at a floodplain site considering the exposure to flood risk and ensuing disruption of natural values.

☒ **YES** ☐ **NO** The floodplain site is the only practicable alternative.

☒ **YES** ☐ **NO** There is no potential for limiting the action to increase the practicability of previously rejected sites outside the floodplain and alternative actions.

☒ **YES** ☐ **NO** Minimization of harm to or within the floodplain can be achieved using all practicable means.

☒ **YES** ☐ **NO** The action in a floodplain clearly outweighs the requirement of E.O. 11988 and EO 11990.

REMARKS: Rehabilitation of the existing dam will reduce the potential for loss of life and will maintain the benefits of the existing reservoir including water supply and flood control.

STEP 7: Prepare and provide the public with a finding and public explanation of any final decision that the floodplain is the only practicable alternative.

☐ Per allowances noted at 44 CFR Part 9.12(d)6, notice provided under Step 2 is understood to meet the requirements of both Steps 2 and 7.

☐ Notice was provided as part of a disaster cumulative notice.
Publication: Click or tap here to enter text.
Date: Click or tap here to enter text.

☐ Project-specific notice provided.
Publication: Click or tap here to enter text.
Date: Click or tap here to enter text.

AFTER PROVIDING THE FINAL NOTICE, FEMA SHALL, WITHOUT GOOD CAUSE SHOWN, WAIT AT LEAST 15 DAYS BEFORE CARRYING OUT THE PROPOSED ACTION.

STEP 8: Review the implementation and post-implementation phases of the proposed action to ensure that the requirements stated in Section 9.11 are fully implemented. Oversight responsibility shall be integrated into existing processes (44 CFR §9.11).

☐ **YES** ☐ **NO** Was grant conditioned on review of implementation and post-implementation phases to ensure compliance with EO 11988 and EO 11990?.

REMARKS: Click or tap here to enter text.

FAILURE TO COMPLY WITH CONDITIONS ENUMERATED IN THE RECORD OF ENVIRONMENTAL CONSIDERATION MAY JEOPARDIZE FEDERAL FUNDING.

TRUMBULL COUNTY PLANNING COMMISSION

www.planning.co.trumbull.oh.us
185 East Market Street NE, Suite A, 2nd Floor • Warren, Ohio 44481
Telephone: (330) 675-2480 • Fax: (330)675-2790

Julie M. Green
Director

FLOOD HAZARD AREA DEVELOPMENT PERMIT

This permit is issued based on documentation that the information provided in the Flood Hazard Development Permit Application is in compliance with the Trumbull County Flood Damage Reduction Regulations.

Permit Number:	WEA-22-01
Date Issued:	March 28, 2022
Name of Property Owner:	Mahoning Valley Sanitary District
Address of Property:	1181 Salt Springs Road Mineral Ridge, OH 44440
Parcel ID# of Property:	21-003000
Flood Hazard Area Zone:	Zone AE (including Floodway)
FIRM Panel:	39155C0392D
Flood Protection Elevation:	N/A

Description of Development Activity:
The proposed development activity includes abandoning the existing duel auxillary spillways and replacing them with a new roller compacted concrete auxillary spillway. A "No-Rise" certificate submitted with the application materials states the activation of the spillway does not change and there will be no increase to flood levels within the community during the occurrence of the base flood discharge.

The permittee understands and agrees that:

- The permit is issued on the representations made herein and on the application for permit;
- The permit may be revoked because of any breach of representation;
- Once a permit is revoked all work shall cease until the permit is reissued or a new permit is issued;
- The permit will not grant any right or privilege to erect any structure or use any premises described for any purposes or in any manner prohibited by the codes or regulations of the community;
- The permittee hereby gives consent to the Floodplain Administrator to enter

and inspect activity covered under the provisions of the Floodplain Management Regulations;

- The permit form will be posted in a conspicuous place on the premises in plain view; and
- The permit will expire if no work has commenced within one year of issuance.

Issued by: Thomas J Keiran Date: 3/28/22

Thomas "TJ" Keiran, GISP
Environmental Coordinator/Floodplain Administrator
Trumbull County Planning Commission
185 East Market Street NE, 2nd Floor, Suite A
Warren, OH 44481
330-675-6640| 330-675-2790 fax
PCKeiran@co.trumbull.oh.us
www.planning.co.trumbull.oh.us

Celebrating 30 Years 1992 - 2022
Stream and Wetlands
FOUNDATION

123 South Broad Street, Suite 238
P.O. Box 369
Lancaster, Ohio 43130
T: (740) 654-4016
F: (740) 689-0890

April 7, 2022

Mr. Michael McNinch
Mahoning Valley Sanitary District
PO Box 4119
Youngstown, OH 44515

RE: Wetlands Mitigation for the Mineral Ridge Dam Rehabilitation Project located at 1181 Ohltown McDonald Rd, Mineral Ridge, Weathersfield Township, Trumbull County, OH 44440.
ACCT. NO. MAHO-68
Army Corp No.- 2019-00783

Dear Mr. McNinch:

The Stream + Wetlands Foundation received on April 7, 2022, a full payment of $22,000 (check #003557) for Mineral Ridge Dam Rehabilitation project.

Please find enclosed the executed purchase agreement that completes the payment requirements for the purchase of 0.4 acres of non-forested wetlands mitigation credits from our Pittsburgh In-Lieu Fee Program.

Thank you very much for allowing Stream + Wetlands Foundation to assist you with the wetlands mitigation needs of this project. Should you need further assistance, please feel free to call anytime.

Sincerely,

Vincent E. Messerly, P.E.
President

Cc: Steve Smith, Gannett Fleming, Inc., via email
Tyler Bintrim, USACE Pittsburgh District, North Regulatory Brach Chief, via email

Stream and Wetlands FOUNDATION

IN-LIEU FEE CREDIT PURCHASE AGREEMENT

APPLICANT INFORMATION + IMPACT SUMMARY

PERMIT APPLICANT'S/CLIENT'S INFORMATION

Applicant Name: **Mahoning Valley Sanitary District**

Address: PO Box 4119 Youngstown, OH 44515	Contact Name: Michael McNinch, P.E. E-mail: michael.mcninch@meaderwater.oh.gov Phone: 330-652-3614

ENVIRONMENTAL CONSULTANT INFORMATION

Consultant Firm: **Gannett Fleming, Inc.**

Address: 207 Senate Avenue Camp Hill, PA 17011	Contact Name: Steve Smith E-mail: scsmith@gfnet.com Phone: 717-886-5413

PROJECT INFORMATION

Project Name: **Mineral Ridge Dam Rehabilitation Project**

Project Type (commercial, industrial, residential, utility, roadway, etc.): Utility (Public Water)

Location (street address, city/twp., county): 1181 Ohltown McDonald Road
Mineral Ridge, Weathersfield Township, Trumbull County, OH 44440

Latitude: N 41° 9' 33.0"	8-Digit USGS Watershed:
Longitude: W 80° 46' 14.3"	05030103 Mahoning
USACE Application No. (if available): LRP 2019-783	Ohio EPA SWIMS No. if available):

ANTICIPATED IMPACTS

Wetland Impacts (acres)		Category 1	Category 2	Category 3	Total (acres)
Jurisdictional Wetlands:	Forested				0.000
	Non-forested	0.007	0.391		0.398
Isolated Wetlands:	Forested				0.000
	Non-forested				0.000
				Wetlands Total (acres)	0.398

Streams (linear feet)	Perennial	Intermittent	Ephemeral	Total (linear feet)
				0

TERMS OF PAYMENT

Wetland Mitigation Credits	Forested Credits:	0.0	(round up to 1/10 acre)
	Non-Forested Credits:	0.4	(round up to 1/10 acre)
	Total Wetland Credits:	0.4	
Total Cost of Wetland ILFP Credits @ $55,000 per credit:		**$22,000.00**	
Stream Mitigation Credits	**Total Stream Credits:**	0	(round up to 1-foot)
Total Cost of Stream ILFP Credits @ $285 per credit:		**$0.00**	
Total Cost of Purchase of ILFP Credits:		**$22,000.00**	
Initial Deposit (15% of Total Cost):		**$3,300.00**	

IN-LIEU FEE PROGRAM
CREDIT PURCHASE AGREEMENT
HUNTINGTON & PITTSBURGH CORPS DISTRICTS

WHEREAS, the discharge of dredged or fill material into waters of the United States and waters of the State of Ohio, including streams and wetlands, is regulated pursuant to Section 404 of the Clean Water Act, 33 U.S.C. §1344, and/or Ohio Revised Code Chapter 6111;

WHEREAS, entities planning to place dredged or fill material into waters of the United States or waters of the State of Ohio, including streams and wetlands, must comply with standards and conditions imposed by the Army Corps of Engineers (the "Corps") and/or the Ohio Environmental Protection Agency (the "Ohio EPA") including, in many cases, the mitigation of impacts;

WHEREAS, the Stream + Wetlands Foundation ("S+W") has established an In-Lieu Fee Program ("ILFP") in the Huntington and Pittsburgh Corps Districts that has been approved by the IRT and is authorized to provide ILFP credits to entities required to provide compensatory mitigation for stream and wetland impacts; and

THEREFORE, Mahoning Valley Sanitary District ("Client") and S+W agree they will comply with the following guidelines and procedures by which Client will purchase ILFP wetland mitigation credits from S+W to provide compensatory mitigation for stream and/or wetland impacts permitted under Sections 404 and 401 of the Clean Water Act and/or Ohio Revised Code Chapter 6111.

A. Initial Reservation Period

This Agreement shall become effective on upon the date this Agreement is signed by both S+W and Client. Upon receipt of a complete, signed copy of this Agreement and the 15% Initial Deposit, S+W will reserve the ILFP mitigation credits designated above for a period of six (6) months (the "Initial Reservation Period"). In the event that Client withdraws its stream and/or wetland fill permit application or the application is denied, the deposit will be refunded upon the written request of Client confirming permit withdrawal or denial, provided such request is received by S+W within six (6) months from the Effective Date.

B. Extension of Reservation Period

Client may extend the Initial Reservation Period for additional six (6) month periods (not to exceed 24 months from the Effective Date) by delivering payment(s) to S+W of 15% of the total ILFP credit purchase price for each six (6) month extension period and timely providing S+W with written notice requesting such extension. All deposit payments are non-refundable upon expiration of the Initial Reservation Period. Full payment is due no later than two years after the Effective Date of this Agreement. If S+W does not receive full payment within two years of the Effective Date, all deposit payments will be retained by S+W and the previously reserved ILFP credits will be immediately available for sale to third parties.

C. Within thirty (30) days of issuance of the Clean Water Act Section 404 permit and, if necessary, the Section 401 Certification and/or Ohio Isolated Wetland Permit, whichever is later received (the "Permit Issue Date"), Client will tender in full the outstanding balance of the cost of the ILFP credits. Client will concurrently provide S+W with a copy of the Section 404 permit and, if applicable, the Section 401 Certification and/or the Ohio Isolated Wetland Permit or other approval to impact wetlands on the project. If payment is not received by S+W within thirty (30) days of the Permit Issue Date, the Client will be considered to be in Default of Payment and a late payment penalty of $500 or 2.0% interest on outstanding balance, whichever is greater, shall be immediately applied for each month or portion thereof until payment is received in full, including all late payment penalties.

D. If the Client is in Default of Payment for greater than ninety (90) days, S+W may, at its sole discretion, notify the Client that this Agreement is terminated and elect to market and sell the Client's reserved ILFP credits to a third party. The Corps and/or Ohio EPA shall be notified by S+W that this Agreement has been terminated and the ILFP credits are no longer held in reserve for the Client. The Client's deposit payment(s) will be forfeited to S+W; provided, however, that S+W may, in its sole discretion, and written request of the Client apply the amount of the deposit payment or any portion thereof against the cost of future ILFP credit purchases by the Client from S+W.

E. The Client shall have no obligation other than the payments set forth in this Agreement for the completion of compensatory mitigation represented by the purchase of the ILFP credits. S+W is solely responsible for the successful implementation of all compensatory mitigation represented by the purchase of the ILFP credits consistent with the ILFP Final Instrument. This Agreement does not constitute a permit or other authority to proceed with the proposed stream and/or wetland impacts and the Client is solely responsible for obtaining all necessary permits and other approvals required for the project.

I. OBLIGATIONS OF STREAM + WETLANDS

A. S+W has established the Huntington and Pittsburgh Corps District ILFP and the IRT has confirmed that S+W is authorized to sell ILFP credits to entities required to provide compensatory mitigation for stream and wetland impacts.

B. In consideration for the payment by Client of **$22,000.00** (plus any subsequently accrued late payment penalties), S+W hereby agrees to provide **0.4** approved wetland ILFP credits and **n/a** approved stream ILFP credits established in the Huntington and Pittsburgh Corps District ILFP for the benefit of Client consistent with the terms of the Agreement. S+W shall be solely responsible for completing the compensatory mitigation requirements consistent the purchase of ILFP credits and the terms of the Huntington and Pittsburgh Corps Districts ILFP Instrument, including applying wetland mitigation credits purchased by Client and ensuring the quality and performance of wetland ecosystems serving as mitigation for Client. S+W shall indemnify Client from any damages or liabilities which may arise out of any act or omission of S+W.

C. S+W will promptly provide written confirmation to the Client that full payment has been received for the purchase of ILFP credits specified in paragraphs II of this Agreement.

II. GENERAL PROVISIONS

A. This Agreement shall be governed and construed in accordance with the laws of the State of Ohio. Venue for the resolution of any dispute shall be in the Court of Common Pleas of Franklin County, Ohio or in the federal court in the Southern District of Ohio in Columbus, Ohio.

B. The signatories hereto represent and covenant that they are authorized to execute this Agreement and to bind the respective parties to this Agreement.

C. This Agreement is the entire agreement between S+W and Client and supersedes any prior agreements of communications relating thereto. No modification hereof or subsequent agreement related to the sale of ILFP credits described herein shall be binding on either party unless reduced to writing and signed by both parties hereof.

STREAM + WETLANDS FOUNDATION

Signed By: _____

Vincent E. Messerly, President

Date: 4/7/22

CLIENT: _____

Signed By: _____

Printed Name: Michael O. McNinch

Title: Chief Engineer

Date: 4/4/22

FOR STREAM + WETLANDS FOUNDATION USE ONLY

Assigned to In-Lieu Fee Project HUC No.	
ILFP Project Name	
Date of Permit Issuance by OEPA/USACE (as applicable)	

Gannett Fleming

Excellence Delivered ***As Promised***

December 1, 2021

Mr. Mike Pettegrew
Ohio Department of Natural Resources
Office of Real Estate
2045 Morse Road, Bldg. E-2
Columbus, OH 43229

RE: 21-0991; Mineral Ridge Dam Rehabilitation Project Update 19-536
Winter Bat Desktop Habitat Assessment
Weatherfield Township, Trumbull County, Ohio

Dear Mr. Pettegrew:

Gannett Fleming, Inc. (GF) has been contracted by the Meander Water Authority to complete a winter bat desktop habitat assessment for the proposed Mineral Ridge Dam Rehabilitation (Project). The proposed Project, which consists of a limit of disturbance (LOD) totaling approximately 63 acres is located approximately 6 miles south of Warren, Ohio in Weatherfield Township, Trumbull County, Ohio. The LOD was dominated by the existing dam and auxiliary spillway. Refer to the attached Project Location Maps.

On November 29, 2021, GF completed a desktop review for potential winter bat habitat within 0.25 miles of the LOD. Based upon the review of United States Geological Survey Topographic Maps, and Ohio Department of Natural Resources records of mine locations and statuses from the Division of Mineral Resources, and the Division of Geological Survey, no potential winter bat habitat areas occur within 0.25 miles of the LOD. The closest occurrence of a potential winter bat habitat area to the LOD is 0.54 miles. Refer to the attached Mines of Ohio map. Additionally, no open mine portals that could provide bats with potential winter bat habitat were observed during the wetland and stream delineations.

If you have any questions or require additional information, please contact Neil Bossart at nbossart@windstream.net or by phone at (717) 860-7679.

Very truly yours,

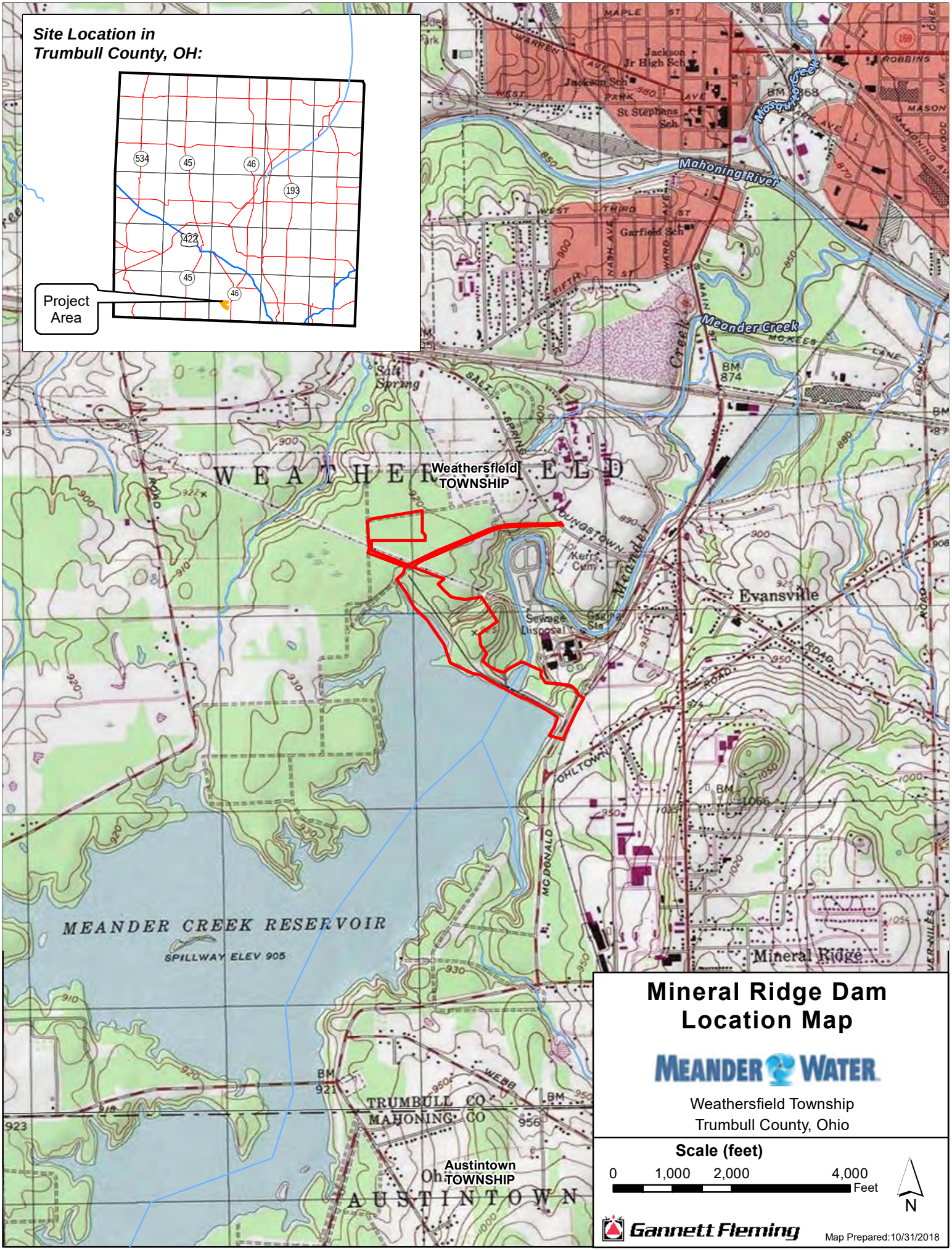
Neil Bossart
Environmental Resources Division

Gannett Fleming, Inc.

Valley Forge Corporate Center • 1010 Adams Avenue • Audubon, PA 19403-2402
t: 610.650.8101 • f: 610.650.8190
www.**gannettfleming**.com

Attachments:

- Project Location Maps
- Mines of Ohio Map



Mineral Ridge Dam Location Map

MEANDER WATER

Weathersfield Township
Trumbull County, Ohio

Scale (feet)

0 1,000 2,000 4,000 Feet

N

Gannett Fleming

Map Prepared:10/31/2018

Data Source: USGS 7.5' Quadrangle - Mahoning and Warren, Ohio provided by ESRI through ArcGIS Online webservice.

Mineral Ridge Dam Location Map

MEANDER WATER

Weathersfield Township
Trumbull County, Ohio

Scale (feet)

0 250 500 1,000 Feet

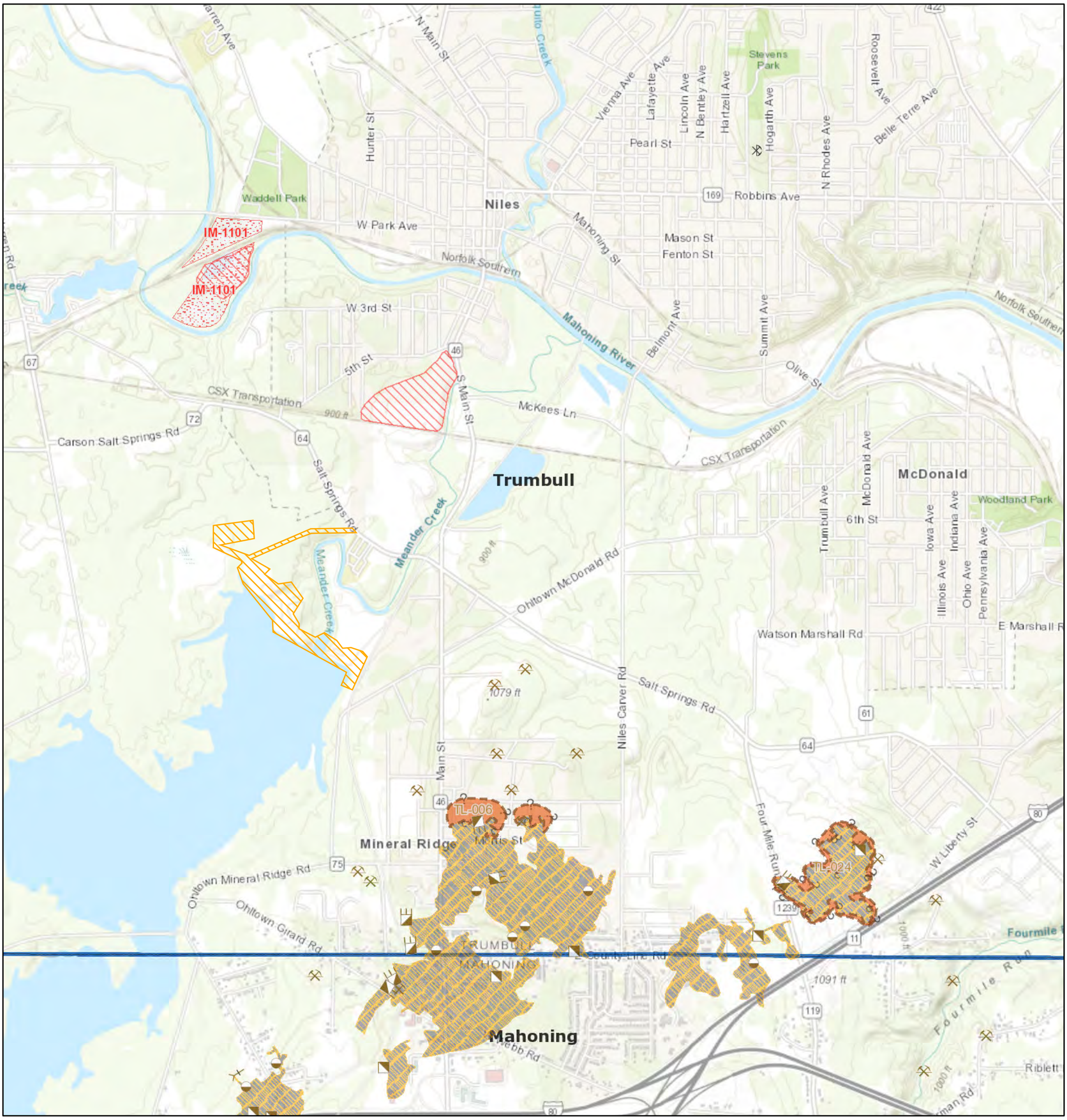
N

Gannett Fleming

Map Prepared:11/21/2018

Data Source: Aerial Image provided by ESRI through ArcGIS Online webservice.

Mines of Ohio



November 29, 2021

1:36,112

0 0.425 0.85 1.7 mi

0 0.5 1 2 km

Current
- Air Shaft
- Drift Entry
- Vertical Mine Shaft
- Slope Entry

Past
- Air Shaft
- Drift Entry
- Vertical Mine Shaft
- Slope Entry
- Locations

Locations - From Geologic Maps
- Abandoned pit
- Abandoned quarry
- Quarry area
- Sand, gravel, or barrow pit
- Locations

- Surface Affected Area

Proposed
- Original Application
- Adjacent Area Application
- Current

Past
- A Law (1965 - 1972)
- B Law (1972 - 1975)
- C Law (1976 - 1981)
- D Law (1982 - Present)
- Historic - From Topo Maps
- Historic - From Geology Maps

Proposed
- Original Application
- Adjacent Area Application
- Permitted
- Current

- Past
- Partially Known
- Known

Proposed
- Original Application
- Adjacent Area Application
- Current
- Past
- Historic - From Geology Maps

Proposed
- Original Application
- Adjacent Area Application
- Current
- Past
- Abandoned before 1977

Ohio Dept. of Natural Resources

Data Collection Summary: Socioeconomic Conditions in Downstream Population by Census Tract

Geographical Area - Census Tracts Downstream of Dam	*Population*	*Percent Minority **	*Median Household Income ***	*Percent Below Poverty (households)*	*Per Capita Income ***	*Percent Below Poverty (individuals)*	*Average Household Size*	*Percent Population in Owner Occupied Housing Units*	*Percept Population in Renter Occupied Housing Units*
Trumbull County, Ohio	**67,566**	**11.3%**	**$47,399**	**15.1%**	**$27,661**	**15.7%**			
39.155.9213.00	2,191	17.3%	$37,328	22.5%	$21,851	26.2%	1.9	43.3%	56.7%
39.155.9214.00	3,165	12.2%	$53,554	11.2%	$37,567	10.7%	1.95	78.1%	21.9%
39.155.9215.00	5,712	9.2%	$34,444	19.1%	$23,840	20.3%	1.98	65.3%	34.7%
39.155.9310.00	5,594	3.1%	$64,375	9.2%	$41,438	6.5%	2.16	81.6%	18.4%
39.155.9323.00	5,874	4.7%	$45,619	9.6%	$26,583	9.1%	2.26	66.7%	33.3%
39.155.9325.00	3,054	4.6%	$53,295	5.9%	$29,727	6.3%	2.19	83.4%	16.6%
39.155.9326.00	3,969	7.4%	$45,759	9.3%	$26,759	6.6%	2.17	58.5%	41.5%
39.155.9327.01	5,518	9.8%	$44,759	9.1%	$31,860	6.0%	1.96	54.5%	45.5%
39.155.9327.02	2,280	7.7%	$40,507	15.7%	$25,044	15.8%	2.26	58.6%	41.4%
39.155.9328.01	2,741	10.6%	$48,550	15.7%	$26,774	14.8%	2.16	66.0%	34.0%
39.155.9328.02	3,298	10.0%	$40,469	17.0%	$20,905	17.2%	2.35	61.1%	38.9%
39.155.9329.00	2,475	10.8%	$66,686	15.8%	$31,426	19.6%	2.5	62.4%	37.6%
39.155.9330.02	4,359	8.5%	$67,288	3.5%	$32,954	5.1%	2.3	77.5%	22.5%
39.155.9333.01	2,505	0.7%	$37,764	26.3%	$21,300	26.7%	2.23	70.3%	29.7%
39.155.9333.02	4,977	1.7%	$60,445	8.5%	$26,659	8.5%	2.49	85.4%	14.6%
39.155.9334.00	3,270	4.6%	$59,063	9.8%	$26,711	8.4%	2.62	86.8%	13.2%
39.155.9339.00	1,652	17.3%	$33,580	16.1%	$33,815	21.9%	2.17	71.3%	28.7%
39.155.9340.00	4,932	62.9%	$19,700	46.8%	$12,683	52.7%	2.42	37.7%	62.3%
Mahoning County, Ohio	**26,998**	**44.2%**	**$30,788**	**34.1%**	**$19,348**	**35.6%**			
39.099.8006.00	1,562	81.1%	$23,606	40.6%	$13,398	41.9%	2.23	46.9%	53.1%
39.099.8013.00	2,754	45.4%	$30,717	31.5%	$17,637	33.2%	2.76	54.1%	45.9%
39.099.8040.00	2,424	46.8%	$21,528	41.8%	$10,606	46.5%	2.02	28.2%	71.8%

Geographical Area - Census Tracts Downstream of Dam	*Population*	*Percent Minority **	*Median Household Income ***	*Percent Below Poverty (households)*	*Per Capita Income ***	*Percent Below Poverty (individuals)*	*Average Household Size*	*Percent Population in Owner Occupied Housing Units*	*Percept Population in Renter Occupied Housing Units*
39.099.8102.00	1,997	50.5%	$24,440	48.1%	$30,075	44.7%	2.24	70.0%	30.0%
39.099.8106.00	2,664	25.3%	$40,682	17.8%	$22,299	29.1%	2.52	50.9%	49.1%
39.099.8108.00	2,171	11.3%	$31,167	30.2%	$23,836	34.6%	2.42	69.8%	30.2%
39.099.8109.00	2,098	6.1%	$61,094	5.2%	$37,130	6.4%	2.27	90.5%	9.5%
39.099.8111.00	1,113	2.3%	$45,948	14.9%	$25,273	12.4%	2.22	71.3%	28.7%
39.099.8137.00	2,867	58.4%	$18,580	49.5%	$13,583	39.8%	1.93	39.9%	60.1%
39.099.8139.00	1,625	90.1%	$26,346	39.0%	$14,019	31.5%	1.83	38.2%	61.8%
39.099.8140.00	3,009	57.9%	$17,633	45.2%	$7,507	48.0%	2.21	46.7%	53.3%
39.099.8141.00	2,714	55.6%	$27,711	45.4%	$16,815	58.8%	2.32	45.0%	55.0%
Lawrence County, Pennsylvania	**14,949**	**5.4%**	**$48,041**	**12.5%**	**$26,885**	**14.2%**			
42.073.0010.00	1,595	18.7%	$33,167	22.4%	$17,442	29.4%	2.4	56.2%	43.8%
42.073.0105.00	2,889	0.0%	$45,575	8.7%	$26,990	7.9%	2.32	87.4%	12.6%
42.073.0106.00	2,139	0.5%	$50,788	8.2%	$29,559	11.0%	2.09	82.5%	17.5%
42.073.0111.00	4,042	5.1%	$48,542	13.0%	$29,347	12.4%	2.11	76.5%	23.5%
42.073.0113.00	4,284	2.8%	$62,132	10.1%	$31,086	10.4%	2.45	86.2%	13.8%
Downstream Area	***109,513***	***20.3%***	***$42,076***	***20.5%***	***$24,631***	***21.8%***			
Trumbull County, OH	199,144	12.2%	$47,799	16.0%	$27,255	17.3%	2.27	70.4%	29.6%
Mahoning County, OH	228,452	21.6%	$47,092	17.4%	$31,703	17.6%	2.24	69.6%	30.4%
Ohio	11,675,275	19.5%	$58,116	13.4%	$32,465	13.6%	2.41	66.3%	33.7%
Lawrence County, PA	86,148	7.6%	$50,080	13.0%	$28,898	12.9%	2.25	74.8%	25.2%
Pennsylvania	12,794,885	20.6%	$63,627	11.8%	$35,518	12.0%	2.42	69.0%	31.0%

Source: data.census.gov: 2020 ACS 5-year estimates

** Percent (%) minority are those who identified as something other than "White alone"*

*** in 2020 inflation-adjusted dollars. 42.073.0111.00 Census Tract in 2019 dollars*

cra
cultural resource analysts, inc.

November 15, 2018

Steven C. Smith
Environmental Scientist and Permit Coordinator
Gannett Fleming, Inc.
207 Senate Avenue
Camp Hill, PA 17011

RE: Historic Architectural Assessment of the Mineral Ridge Dam in Trumbull County, Ohio
CRA Project Number: W18G003
Contract Publication Series: 18-415

Dear Mr. Smith:

In August 2018, Cultural Resource Analysts, Inc. (CRA), personnel completed a cultural historic survey for the proposed rehabilitation project of the Mineral Ridge Dam in Trumbull County, Ohio (Figures 1 and 2). The study was conducted at the request of Gannett Fleming, Inc. The purpose of the project is for the rehabilitation of the Mineral Ridge Dam near the community of Mineral Ridge, Ohio. Figure 3 illustrates the location of each photograph found within this report. Figures 4 and 5 illustrate the project area.

The survey was conducted to comply with federal regulations concerning the impact of federal actions on sites and structures listed in, or eligible for nomination to, the National Register of Historic Places (NRHP). These regulations include Section 106 of the National Historic Preservation Act of 1966, the regulations published in the Code of Federal Regulations at 36 CFR Part 800, and 33 CFR 325 Appendix C of the U.S. Army Corps of Engineers procedures for protection of historic properties.

Investigations focused on the Mineral Ridge Dam and associated Gate House. The objective of the historic architectural assessment was to evaluate the significance and integrity of the dam in order to recommend if it is eligible for listing in the National Register of Historic Places.

CRA completed a records review of the Ohio State Historic Preservation Office's (SHPO) Online Mapping System (OMS) on August 8, 2018. Information contained in the OMS indicated that the dam had not been previously surveyed. However, it is noted the Trumbull County Planning Commission had previously surveyed the Mahoning Valley Sanitary District (TRU-2460-23). No date of this survey was indicated on the site form. The survey included the complex of buildings constructed from 1929 – 1932. TRU-2460-23 was recommended as eligible on its associated Ohio Historic Inventory (OHI) form. The OMS database has it coded as surveyed but no official determination of eligibility has been stated by the SHPO.

Since TRU-2460-23 is located beyond the limits of the dam rehabilitation project, it is not directly included in the scope of CRA's investigation. However, during the survey, the previously identified site (TRU-2460-23) was visited and several overview photographs taken to assist in placing the Mineral Ridge Dam within its proper context. The National Register Bulletin, *How to Apply the National Register Criteria for Evaluation,* published by the National Park Service was followed in regards to evaluating the dam and gatehouse within their historic context.

Robert Ball of CRA completed the historic architectural assessment on August 13th and 14th, 2018, noting the dam's current condition and assessing it for potential significance. Detailed digital photographs were taken of the dam, the gatehouse, and surrounding area. The location of the dam and gatehouse are described below and mapped on Figures 1 and 2.

Site 1 – Mineral Ridge Dam

SHPO Survey #: TRU-02944-23
Photographs: Figures 6 – 15
Map: Figures 1 and 2
Zone: 17
Quad: 1994 Warren, OH
Northing: 4555944 Easting: 518301
Property Address: Meander Creek Reservoir, Mineral Ridge, OH 44440
Owner Information: Mahoning Valley Sanitary District
Construction Date: circa 1928–1930, modifications and repairs in 1995

The Mahoning Valley Sanitary District (MVSD) was established on February 2, 1926 by order of the local court systems after hearing petitions from the cities of Youngstown and Niles concerning their need for a water supply. The MVSD's Board of Directors adopted a plan on November 8, 1927, which was subsequently approved by the court on February 8, 1928. The plan detailed the acquisition of land for the establishment of the Meander Reservoir and associated infrastructure necessary for the production of a clean water supply. Construction began in 1928 and the Meander Water Supply System was operational in 1932. The system is comprised on the dam, reservoir, purification works, pumping station, pressurized pipelines, a distribution reservoir in Youngstown, and a stand pipe in Niles.

TRU-02944-23 consists of an embankment dam and associated gatehouse that impounds the Meander Creek Reservoir (Figure 6). The dam is owned and operated by the Mahoning Valley Sanitary District, which also operates a water treatment plant (TRU-2460-23) located 400 feet to the northeast. The Mineral Ridge Dam has been classified as a Class I dam based on its storage volume, overall height, and in the event of a sudden collapse there would either be a probable loss of life or a structural collapse of at least one residence or one commercial or industrial business. Its primary purpose is that of water supply. Construction on the dam began in 1928 and was completed two years later in 1930. Modifications and repairs were made to the dam in 1995.

The following details describing the dam comes from the As Built Drawings for Contract No. 152 Emergency Spillway and Dam Improvements dated November 13, 1995 prepared by MS Consultants (1995 As Built Drawings), Inc. and technical report, *Mineral Ridge Dam Field Investigation Summary Report,* produced by Gannett Fleming in 2014. The dam consists of a 3,480-foot earth embankment with a height of 60 feet and a crest width of 20 feet (Figure 7). The main spillway of the dam is located 900 feet from the east abutment and is comprised of a 260-foot long concrete ogee spillway with a rubber bladder affixed to its crest. The gatehouse is located at the east abutment of the principal spillway and contains the controls for the rubber bladder, sluice gates, and other equipment (Figure 8).

The gatehouse is constructed of brick and clad in sandstone. It is topped by a hip metal roof with a stone parapet wall. Windows on the façade, north and south elevations all contain metal bars over them. The façade (east elevation) of the gatehouse contains centered, double-leaf metal doors topped by a copper band and glass block transom (Figure 9). Flanking the doors are metal, wall sconces, and glass block windows (Figure 10). The north edge of the facade contains two plaques; one dedicating the construction of the dam and reservoir, and the second commemorating the spillway and dam improvements in 1995. The north elevation has three glass block windows and a concrete deck with a metal balustrade that runs the length of the elevation (Figure 11). The south elevation (towards the reservoir) also contains three, glass block windows (Figure 12). The west elevation contains a centered, single-leaf metal door that is topped by a copper band and glass block transom. Flanking the door are single, glass block windows. A small, concrete deck with a metal balustrade is present on this elevation (Figure 13).

Just to the east of the east abutment and gatehouse is a concrete stairway with metal handrails leading down to the base of the embankment (Figure 14). Two emergency, concrete spillways are located on the west embankment. Access to the gatehouse and dam from the east is via a concrete road running along the dam crest. Stone walls and metal gates located at the end of the dam crest restrict use of the road (Figure 15). A paved road leads from Salt Springs Road to the west end of the dam.

Historically, the dam, gatehouse and other associated features have undergone modifications since the facilities were put into service in 1932. The most recent major modifications, which were completed in 1995 and shown on the 1995 As Built Drawings, included the following changes:

1. The gatehouse roof, concrete balcony and handrailing, windows, doors, light fixtures were replaced, new exhaust fan and louvers were added and mortar in stone masonry joints was removed and replaced.
2. The entire top of dam was removed and replaced with a new concrete roadway, curb, light poles and fixtures. The top elevation of dam elevation was raised.
3. The embankment slope was modified.
4. The surface of the original principal spillway ogee structure and stilling basin was lined with gunite and a rubber bladder was installed on the ogee crest. The maximum normal operating pool level in the reservoir was raised 1.5 feet by inflation of the bladder.
5. Two, 750 foot-long concrete-lined emergency spillway structures with converging outlet channels were added on the west dam embankment.
6. Concrete steps and a concrete landing platform and handrailing were added just to the east of the east abutment and gatehouse.

In or around the timeframe of the 1995 dam modifications, a spoil area located west of the dam was developed to contain excavated material from construction of nearby water treatment lagoons.

NRHP Evaluation: Eligible as a contributing resource to the Mahoning Valley Sanitary District (TRU-2460-23); Not Eligible Individually. Site TRU-02944-23 would not be individually eligible for listing in the NRHP since it does not hold sufficient significance as a single object. However, when placed within its proper context and combined with the resources contained within the Mahoning Valley Sanitary District, they are collectively an excellent example of an early twentieth century water supply station.

In the early twentieth century, as populations were growing across the country, a demand for a larger source of clean water was occurring. Cities responded with the creation of sanitary districts or water supply complexes such as the Mahoning Valley Sanitary District. As an intact, representation of this public works movement, CRA recommends that the dam, gatehouse and, TRU-2460-23 are eligible for inclusion in the NRHP under Criterion A.

Research revealed no significant persons associated with TRU-02944-23 and as such, it is not recommended as eligible for listing in the NRHP under Criterion B.

As detailed earlier, the Mahoning Valley Sanitary District was previously surveyed and an OHI form completed by Gregory A. Griffith of the Trumbull County Planning Commission. The survey form indicated the complex had NHRP potential and stated that it was, "an interesting complex of Art Deco structures." It goes on to detail that the Mahoning Valley Sanitary District was created in 1926 and the plan was adopted in 1927, construction was started in 1929 and the facilities were put into service in 1932. The dam and associated gatehouse also date to this time and are mentioned in the survey form as part of the environment.

Collectively, the resources are a great example of a water supply station complex constructed in the Art Deco style in the early twentieth century. The resource retains integrity in location, design, setting, materials, workmanship, feeling, and association and the retention of significant architectural details set it apart. Thus, CRA recommends that the dam, gatehouse and, TRU-2460-23 are eligible for inclusion in the NRHP under Criterion C.

Consequently, CRA recommends that TRU-02944-23 is eligible for inclusion in the NRHP under Criterion A and C as a contributing resource to the larger complex of TRU-2460-23. A few photos of the Mahoning Valley Sanitary District (TRU-2460-23) are included for reference (Figures 16 – 19). A copy of the draft Ohio Inventory Form is also attached for review.

Effects Determination:

The Mineral Ridge Dam Rehab project contains the following associated items:

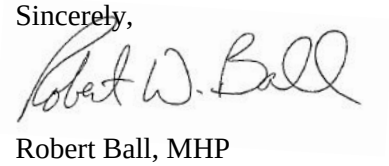
1. repairing the deteriorated concrete on the principal spillway (see Figure 6) and replacing the rubber bladder,
2. flattening the embankment slope,
3. replacing mortar on the gatehouse (where needed), with mortar that matches the color of the existing stone masonry,
4. replacing modern flood lighting and electrical wiring on the gatehouse (see Figures 8 and 11),
5. replacing wall mounted sconce lights on the façade of the gatehouse (see Figure 10),
6. replacing the road, curb and lampposts (Figure 20) at the crest of the dam on both sides,
7. replacing the twin emergency spillways with a single spillway structure (Figures 21 and 22),
8. replacing the stairway and landing adjacent to the east spillway training wall (see Figure 14).

cra
cultural resource analysts, inc.

Even though the resource underwent modifications in 1995, those changes were not significant to the point of removing or altering character defining elements that affected its overall integrity. The Dam Rehab project items listed above are impacting features that were previously changed or modified after the original construction. In addition, with the commitment of matching the new mortar color to the existing masonry, it is CRA's opinion that the proposed project would not alter or affect the characteristics of the contributing resource that makes it eligible for listing in the NRHP.

Thus, CRA recommends that the proposed dam rehabilitation project would result in a No Adverse Effect on the eligible resource. If you have any questions, please feel free to contact me at 1 (859) 252 4737.

Sincerely,



Robert Ball, MHP
Architectural Historian, Principal Investigator

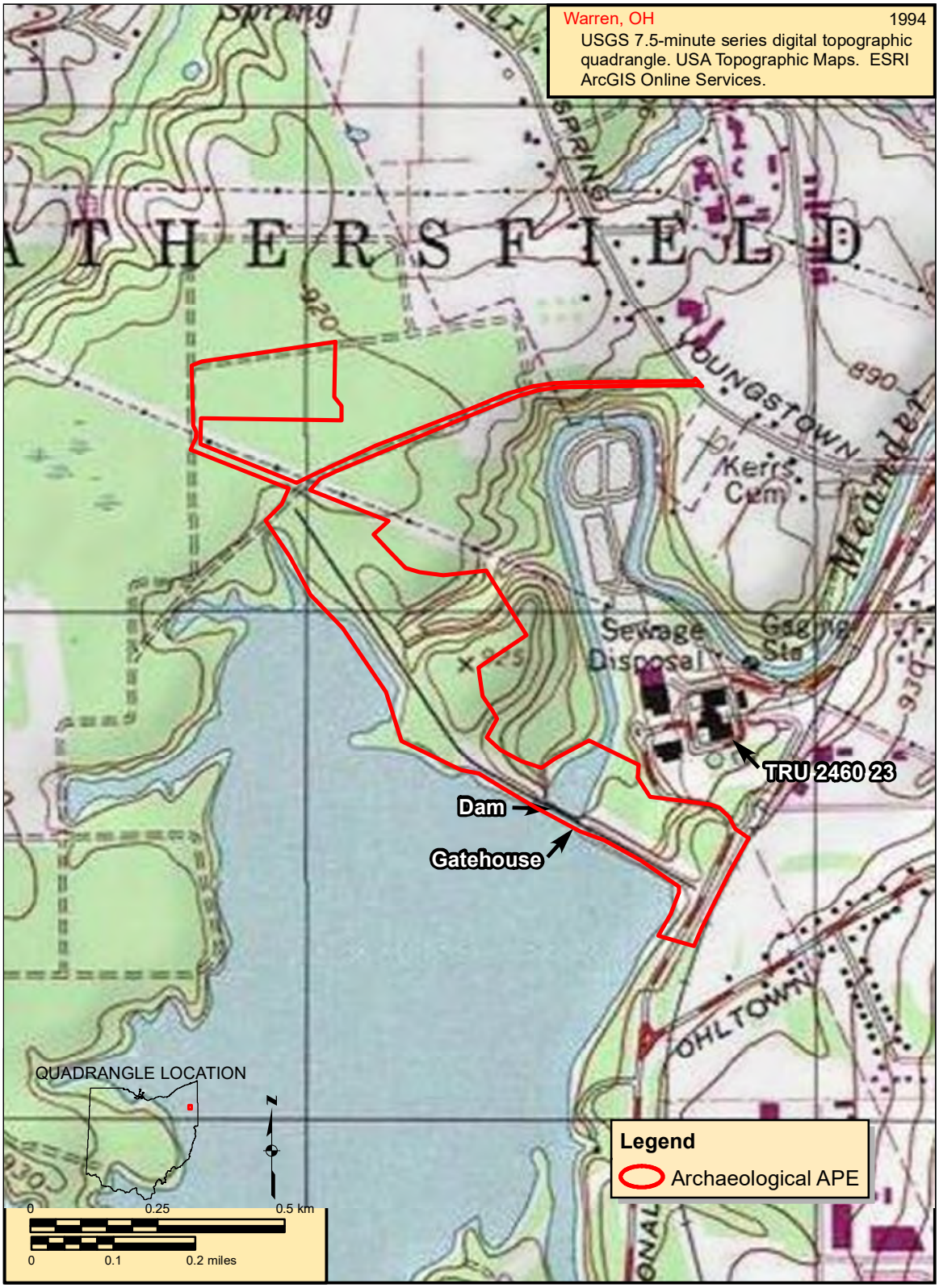


Figure 1. Topographic map depicting the Project Area, Archaeological APE, and previously identified and newly surveyed resources.

Figure 2. Aerial depicting the Project Area, Archaeological APE, and previously identified and newly surveyed resources.

Figure 3. Photo location map.

Figure **4**. Overview, looking south along Mineral Ridge Dam towards reservoir.

Figure **5**. Overview, looking north from Gatehouse towards TRU-2460-23.

Figure **6**. TRU-02944-23: Mineral Ridge Dam, looking southwest.

Figure **7**. TRU-02944-23: Embankment, looking west.

Figure **8**. TRU-02944-23: Gatehouse, looking southwest.

Figure **9.** TRU-02944-23: Façade **of** the Gatehouse, looking west.

Figure **10**. TRU-02944-23: Wall sconce located on the Gatehouse façade.

Figure 1**1**. TRU-02944-23: North elevation, looking south.

Figure 12. TRU-02944-23: South elevation and facade, looking northwest.

Figure 13. TRU-02944-23: West elevation, looking east.

Figure 14. TRU-02944-23: Stairway on the east embankment, looking south.

Figure 15. TRU-02944-23: Stone walls and gates, looking west.

Figure 16. TRU-2460-23: Overview of complex, looking northeast.

Figure 17. TRU-2460-23: Tower building, looking north.

Figure 18. TRU-2460-23: Building #21, looking west.

Figure 19. TRU-2460-23: Entrance gate, looking south.

Figure **20**. TRU-02944-23 Lamppost example along west embankment.

Figure **21**. TRU-02944-23 **Western emergency spillway, looking southeast**.

Figure **22**. TRU-02944-23 **Eastern emergency spillway, looking northwest.**