

Draft Environmental Assessment  
Section 594  
Village of Crooksville Water System Improvement Project  
Perry County, Ohio



U.S. Army Corps of Engineers  
Huntington District  
Huntington, West Virginia  
June 2017



**Draft Environmental Assessment**  
**Section 594 Village of Crooksville Water System Improvements Project**  
**Perry County, Ohio**  
**Executive Summary**

The Village of Crooksville is proposing to design and construct a water system improvement project to replace existing water mains, fire hydrants, service connections and appurtenances, and storage tank as the current water system is failing. Much of the current cast-iron water distribution system dates to the 1920s and experiences frequent breaks and leaks, some requiring temporary “boil orders”. Frequent water line breaks lead to the potential backflow of contaminant sources into the system during depressurization events. Problems with water loss have resulted in increased costs as the Village of Crooksville pays for the lost water that is not delivered to and paid for by customers. Additionally, the system’s one-inch diameter water lines serving residences and four-inch diameter lines serving the fire hydrants are undersized for current standards. The need for the water system improvements in the proposed area is to provide residents with a safe, reliable water system and to reduce the increased costs that are currently straining the Village of Crooksville’s water system budget.

The Proposed Action Alternative would replace approximately 60,000 linear feet of existing water line that ranges from one-inch to eight-inch water line with appropriately sized (to current standards) new polyvinyl chloride plastic water lines, service lines, main valves and boxes, service connection valves and boxes, new fire hydrants, and leak detection meters that will serve approximately 1,609 customers in the Village of Crooksville. Replacement water lines would be installed at approximately four-feet deep in the ground and the majority of the proposed alignment would follow previously disturbed road right-of-ways or adjacent to mowed lawn areas. In addition, the proposed action includes replacement of an existing 600,000 gallon storage tank with a new, above ground tank adjacent to the existing tank. The existing water tank would be removed upon completion of the adjacent tank. The project includes several directional bores, including a crossing of Moxahala Creek, unnamed tributary, railroad crossing, and an identified wetland area to avoid direct impacts. After construction, the project area will be restored to preexisting conditions.

The proposed project is a partnership agreement between the Village of Crooksville and the U.S. Army Corps of Engineers (Corps) established under the authority of Section 594 of the Water Resources Development Act of 1999 (Public Law 106-109), as amended, which provides authority for the Corps to establish a program to provide environmental assistance to Non-Federal entities in Ohio. This law provides design and construction assistance for water related environmental infrastructure projects to Non-Federal interests in Ohio. Funding, as established under Section 594, shall be shared 75% Federal and 25% Non-Federal (State and Local). This Environmental Assessment is prepared pursuant to the National Environmental Policy Act,



Council on Environmental Quality Regulations (40 CFR 1500-1508), and Corps implementing regulation, ER 200-2-2.

SECTION 594  
VILLAGE OF CROOKSVILLE  
WATER SYSTEM IMPROVEMENTS PROJECT  
PERRY COUNTY, OHIO  
TABLE OF CONTENTS

<b>1.0</b>	<b>Project Description</b>	1
1.1	Project Background	1
1.2	Purpose, Need, and Authorization	1
<b>2.0</b>	<b>Proposed Actions and Alternatives</b>	2
2.1	Proposed Action	2
2.2	No Action Alternative	2
<b>3.0</b>	<b>Environmental Setting and Consequences</b>	2
3.1	Location	2
3.2	Land Use	5
3.3	Climate	5
3.4	Terrestrial Habitat	5
3.5	Floodplains	6
3.6	Prime and Unique Farmland	6
3.7	Aquatic Habitat/Water Quality	7
3.8	Wetlands	7
3.9	Wild and Scenic Rivers	7
3.10	Hazardous, Toxic, and Radioactive Wastes	7
3.11	Cultural Resources	8
3.12	Threatened and Endangered Species	8
3.13	Air Quality	9
3.14	Noise	9
3.15	Environmental Justice and Protection of Children	10
3.16	Aesthetics	11
3.17	Transportation and Traffic	11
3.18	Health and Safety	11
3.19	Cumulative Effects	12
<b>4.0</b>	<b>Status of Environmental Compliance</b>	13
<b>5.0</b>	<b>Required Coordination</b>	14
5.1	Agencies Contacted	14



5.2	Public Review and Comments	14
<b>6.0</b>	<b>Conclusion</b>	<b>14</b>

List of Tables

Table 1	Permissible Non-Department of Defense Noise Exposures	9
Table 2	Status of Environmental Compliance	13

List of Tables

Table 1	Permissible Non-Department of Defense Noise Exposures	10
Table 2	Status of Environmental Compliance	14

List of Appendices

Appendix A	Exhibits
Appendix B	Agency Coordination
Appendix C	Surface Water Determination Survey
Appendix D	Mailing List



*The brief and concise nature of this document is consistent with the 40 CFR requirements of the National Environmental Policy Act (NEPA) to reduce paperwork and delay by eliminating duplication with existing environmental documentation, incorporating pertinent material by reference, and by emphasizing interagency cooperation. The majority of data collection and analysis in this document was performed by Ohio Environmental Protection Agency (Ohio EPA) and Jobs Henderson & Associates in conjunction with the U.S. Army Corps of Engineers (Corps).*

## **1.0 PROJECT DESCRIPTION**

### **1.1 Project Background**

This Environmental Assessment (EA) examines the potential environmental impacts of the water system improvements project as proposed by the Village of Crooksville (Village). The purpose of the EA is to analyze the potential environmental impacts of the proposed project and to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

### **1.2 Purpose, Need, and Authorization**

The purpose of the proposed project is to replace existing water mains throughout the Village, fire hydrants, service connections and appurtenances, and replacement of a storage tank as the current water system is failing. The Village owns and operates a water system that spans approximately 26 miles. Since 2010, the Village purchases and distributes water from the Burr Oak Regional District. Much of the current cast-iron water distribution system dates to the 1920s and experiences frequent breaks and leaks, some requiring temporary “boil orders”. Frequent water line breaks lead to the potential backflow of contaminant sources into the system during depressurization events. Problems with water loss have resulted in increased costs as the Village pays for the lost water that is not delivered to and paid for by customers. Unaccounted for water loss ranges from 30-35% of water entering the system, far above the 15% threshold of acceptable water loss. Additionally, the systems one-inch diameter water lines serving residences and four-inch diameter lines serving the fire hydrants are undersized for current standards. The need for the water system improvements in the proposed area is to provide residents with a safe, reliable water system and to reduce increased costs that are currently straining the Village’s water system budget.

The proposed project is a partnership agreement between the Village and the Corps established under the authority of Section 594 of the Water Resources Development Act (WRDA) of 1999 (Public Law 106-109), as amended, which provides authority for the Corps to establish a program to provide environmental assistance to Non-Federal entities in Ohio. This law provides design and construction assistance for water related environmental infrastructure projects to Non-Federal interests in Ohio, including projects for wastewater treatment and related facilities, water supply, water storage, water treatment, water distribution facilities, and surface water resource protection and development.



This EA is prepared pursuant to NEPA, Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508), and Corps implementing regulation, ER 200-2-2.

## **2.0 PROPOSED ACTION AND ALTERNATIVES**

### **2.1 Proposed Action Alternative (PAA)**

The PAA would replace approximately 60,000 linear feet of existing water line that ranges from one-inch to eight-inch water line with appropriately sized (to current standards) new polyvinyl chloride plastic water lines, service lines, main valves and boxes, service connection valves and boxes, new fire hydrants, and leak detection meters that will serve approximately 1,609 customers in the Village of Crooksville. Replacement water lines would be installed at approximately four-feet deep in the ground and the majority of the proposed alignment would follow previously disturbed road right-of-ways or adjacent to mowed lawn areas. In addition, the proposed action includes replacement of an existing 600,000 gallon storage tank with a new, above ground tank adjacent to the existing tank. The existing water tank would be removed upon completion of the adjacent tank. The project includes several directional bores, including a crossing of Moxahala Creek, unnamed tributary, railroad crossing, and an identified wetland area to avoid direct impacts. After construction, the project area will be restored to preexisting conditions.

### **2.2 No Action Alternative (NAA)**

Under the NAA, the Corps would not provide funding for the project. Additionally, the Village would not replace the water system and residences would have continued use of an unsafe failing system. Without this proposed project, further deterioration of the water system would likely continue and result in potential increase of catastrophic losses due to inadequate fire-fighting pressure in the system. The Village would continue to experience a large amount of water line breaks (30% to 35%) that may increase in frequency due to an aged system resulting in millions of gallons of loss per month and boil water advisories. Health risks would continue and potentially worsen due to increased possibility of backflow of contaminant sources into the system during depressurization events caused by water line breaks. This alternative was considered unacceptable due to health and safety hazards for the community in the proposed project area.

## **3.0 ENVIRONMENTAL SETTING AND CONSEQUENCES**

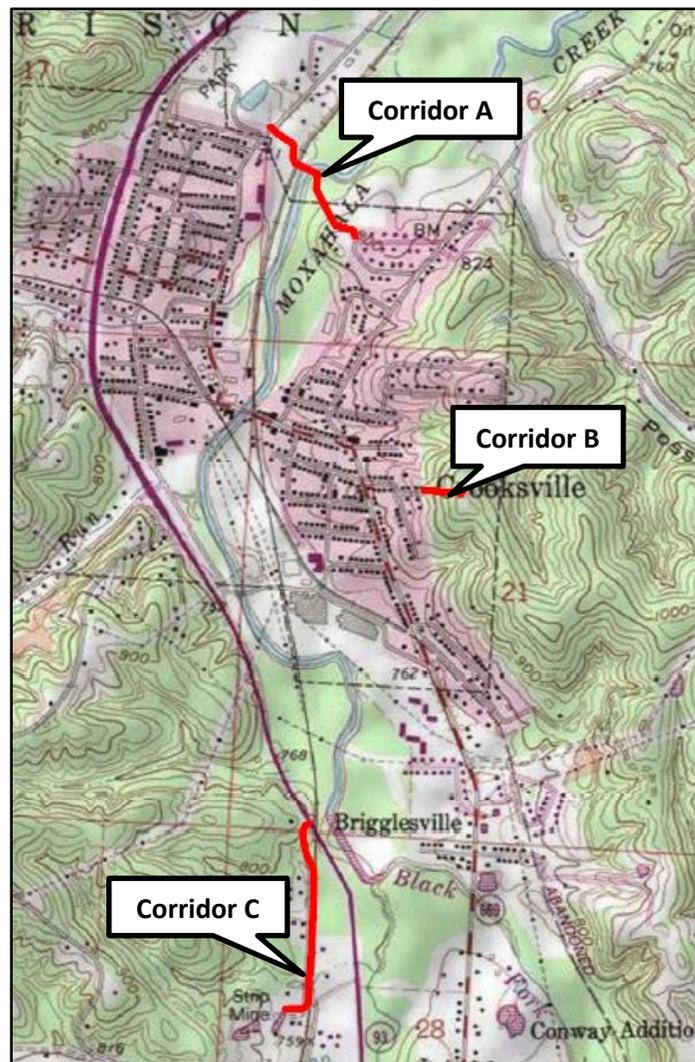
### **3.1 Location**

The affected area is located within the Village of Crooksville in Perry County, Ohio. The water system improvements would follow local roads including West Main Street, Cherry Lane, South Buckeye Street, Industrial Drive, Tunnel Hill Road, Brown Circle Drive, Cahalan Street, Whitehouse Street, Grant Street, Logan Street, McKinley Street, First Street, Sycamore Street,





Approximately 4,435 linear feet of the 60,000 linear feet project corridor is located outside of road rights-of-ways. There are three separate segments (Project Corridors A, B, and C) as presented in Figure 2<sup>2</sup>. Project Corridor A begins on the northern side of Crooksville on the eastern side of China Street and extends to the southeast, crosses Moxahala Creek, and ends on the northwestern corner of Mohican Drive. Project Corridor B (Tank and Tank Line), located south of Project Corridor A, begins at the eastern end of Grant Street and extends to the east near the existing water tank, where the new water tank will be installed. Project Corridor C, located south of Project Corridor B, begins on the northwestern side of the State Route 93/669 north of the railroad bridge and extends to the south along the western side of Tunnel Hill Road, and terminates on a private drive, southwest of the intersection of School Drive and Tunnel Hill Road. Project location mapping can be found in Appendix A.



**Figure 2: Project Corridor Outside of Road Right-of-Ways**

<sup>2</sup> Figure 2 provided by Jobes Henderson & Associates



### **3.2 Land Use**

Land use in the vicinity of the PAA is rural, consisting primarily of residential and small commercial properties. The majority of the proposed water system replacement would be constructed in road right-of-ways. As a result, the water lines would be installed in previously disturbed areas. A small portion of the proposed project is outside of road right-of-ways and would not impact land use as the water lines would be placed underground and the land surface would be restored to pre-construction contours. Additionally, through directional boring impacts to Moxahala Creek, an identified unnamed tributary, and wetland will be avoided. Replacement of the water storage tank would occur on property immediately adjacent to the existing tank this is currently cleared and maintained. After installation of the water system, existing conditions would be re-established.

There would be no impacts to land use as a result of either the PAA or NAA.

### **3.3 Climate**

The Muskingum Watershed's continental climate makes it susceptible to highly variable weather throughout the year. There are no abrupt changes in topography such as significant mountain ranges to cause great differences in climate. The watershed's climate is greatly influenced by oceanic and atmospheric interactions. The watershed experiences seasonal weather patterns throughout the year, with climatic conditions typical of summer, fall, winter, and spring seasons for the Mid-Atlantic Region of the United States. Summers are usually characterized by warm to hot weather with periods of high humidity. Winters within the watershed are typically mild to moderate for cold temperatures and experience snowfall. Fall is typically the driest season, while spring is usually the wettest season within the watershed.

On average, the winter temperature in Perry County is approximately 30 degrees Fahrenheit while the average summer temperature is 71 degrees Fahrenheit. The county receives 102 centimeters (40 inches) of precipitation annually with the average monthly precipitation of about 8 centimeters (3.3 inches). About 60 percent of the yearly rainfall occurs between April and September. October is the driest month, while July is the wettest month for Perry County.

The PAA would not involve any activity that could affect the environment in regard to climate change. This region is not projected to experience severe drought conditions and is instead expected to experience more precipitation in the future as larger and more intense rainfalls become more frequent. As a result, the PAA would not likely be influenced by or influence future climate change. For the same reasons, there are also no impacts expected with respect to climate as a result of the NAA.

### **3.4 Terrestrial Habitat**

The PAA would be constructed primarily on previously disturbed areas, including road right-of-ways; therefore, the majority of potential impacts to vegetation would be minimal and



temporary. The project also includes approximately 4,435 linear feet of water system replacement outside of road right-of-ways in which the removal of vegetation will take place to allow for trenching and installation of a bore pit for directional drilling operations. Tree clearing and trimming would be limited to those that are necessary for the project. Tree clearing greater than or equal to three inch diameter at breast height will occur only from October 1 – March 31 to minimize impacts to Federally listed bat species. Other mature trees are located outside of the work area and within the corridor of the nearby Moxahala Creek and would provide alternative habitat. Only short-term impacts during construction are anticipated to occur. All disturbed areas will be restored to pre-existing conditions. Long-term beneficial positive impacts would occur from the PAA with overall potable water quality and safety improvements.

As the selection of the NAA would entail no changes to the project area, there are no impacts to terrestrial habitat anticipated as part of the NAA.

### **3.5 Floodplains**

Executive Order 11988 requires Federal agencies to consider the potential effects of their proposed actions to floodplains. In order to determine the PAA's potential floodplain impact, the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) were reviewed and portions of the proposed project are located within the base floodplain or the area that has a 1-percent chance or greater of having a flood in any given year. Areas of the proposed project adjacent to Moxahala Creek or an unnamed tributary are located in the regulatory floodway (<https://www.fema.gov/floodplain-management/flood-zones>). The proposed water replacement system with the exception of the storage tank would be buried and result in no change in grade or elevation. The water storage tank location would be constructed outside of the floodplain.

Therefore, no impacts to floodplains are anticipated to occur from the PAA or NAA.

### **3.6 Prime and Unique Farmland**

The Farmland Protection Policy Act (FPPA) requires Federal agencies to minimize the conversion of prime and unique farmland to non-agricultural uses. The majority of the project area follows road right-of-ways, and previously disturbed areas. The exceptions are the river and stream crossings and short segments of the line that will be located outside of road right-of-ways. The Corps Huntington District has determined since the majority of the area is pre-disturbed the FPPA would not apply to this proposed project and no impacts on prime or unique, statewide, or locally important farmland is expected to occur. Coordination with Natural Resources Conservation Service (NRCS) is on-going and will be completed prior to issuance of a FONSI.

There are no impacts to Prime and Unique Farmland anticipated as part of the NAA.



### **3.7 Aquatic Habitat/Water Quality**

The Village is located within the Muskingum Watershed and near the center of the Moxahala Creek sub-watershed. Several waterbodies within the sub-watershed are listed on Ohio's 2016 Section 303(d) list of impaired waters. The major source of impairment in Moxahala Creek is acid mine drainage. Other causes of impairment include E.coli and acidic pH levels. Throughout the Muskingum Watershed other causes of impairment include: siltation, stream flow alteration, pathogens, habitat alterations, nutrient loading, and pH levels. Implementation of the PAA would not result in any new discharge of pollutants. Construction of the PAA will avoid any permanent and temporary in-stream impacts as stream crossings will be directionally bored beneath waters. Therefore, under the Clean Water Act, a 404 or 401 permit is not needed for this action. Impacts to the aquatic habitat will also be avoided at stream and water crossings due to directional boring. However, a National Pollutant Discharge Elimination System (NPDES) permit will be required due to the size of construction area. Best Management Practices (BMPs) would be used throughout the project to prevent runoff from the project into adjacent surface waters. Based on the above, implementation of the PAA would not result in significant short or long term environmental impacts to aquatic habitat and water quality.

Under the NAA, no aquatic impacts would occur and water quality in the project area would remain unchanged.

### **3.8 Wetlands**

National Wetland Inventory Maps (NWI) were reviewed for the proposed project area and a surface water determination was conducted to determine validity of NWI Maps. An ecologist with Jobes Henderson & Associates, Inc., conducted a surface water determination study on April 3, 2017. This assessment identified one wetland and two streams (Moxahala Creek and unnamed tributary) within the proposed project corridor. The identified wetland is potentially a jurisdictional Palustrine Forested (PFO) wetland. The wetland is dominated by pin oak and American sycamore and located in the vicinity of Project Corridor A mentioned above in Section 3.1. The water line will be directionally bored beneath the identified wetland to avoid impacts. Therefore, no impacts to wetlands are anticipated as part of the PAA.

There are no impacts to wetlands anticipated as part of the NAA.

### **3.9 Wild and Scenic Rivers**

No designated State Wild or Scenic Rivers are present within the Project Area. Therefore, no impacts to these resources are anticipated as part of the PAA or NAA.

### **3.10 Hazardous, Toxic, and Radioactive Waste (HTRW)**

A Phase 1 HTRW Environmental Site Assessment was conducted for the Village of Crooksville Water System Improvement Project to identify environmental conditions and to identify the



potential presence of HTRW contamination located in the project's construction work limits. Below are the following Phase 1 HTRW findings:

The Corps HTRW staff determined the Phase 1 HTRW showed no evidence of recognized environmental contamination within the property and no further HTRW action is required. Therefore, no impacts to HTRW are anticipated with the PAA. A clearance memorandum was signed by Corps HTRW staff March 27, 2017.

The NAA would not result in ground disturbing activities, and thus would not disturb areas of potential HTRW contamination. Therefore, there are no HTRW impacts associated with the NAA.

### **3.11 Cultural Resources**

A Phase 1 Archeological Survey for the Village of Crooksville Water System Improvements Project was conducted in March 2016. After review of the Crooksville Water System Improvements, Perry County, Crooksville, Ohio Cultural Resource Report, and associated correspondences with the Ohio State Historic Preservation Office (SHPO), the Corps, Huntington District concurs with the Ohio SHPO's determination that this undertaking will have no adverse effect on properties eligible for listing on the National Register of Historic Places. In accordance with 36 CFR 800.4(d)(1)(i), the Huntington District has fulfilled its obligations under Section 106.

If unanticipated archaeological deposits or human remains are discovered during construction, all work near the location of the discovery shall cease and the Project Manager and Huntington District Archaeologist shall be contacted immediately. The Ohio State Police, the Perry County Coroner, and Ohio Historic Preservation Office must also be notified immediately if human remains are discovered.

### **3.12 Threatened and Endangered Species**

According to the U.S. Fish and Wildlife Service (USFWS), the project area is within the range of the Indiana bat and northern long-eared bat. The proposed project would primarily occur in previously disturbed areas. Approximately 4,435 linear feet of water system replacement would occur outside of road right-of-ways in which the removal of vegetation would take place to allow for trenching and installation of a bore pits for directional bore drilling operations. Tree clearing greater than or equal to three inch diameter at breast height will occur only from October 1 – March 31 to minimize impacts to Federally listed bat species. Based on coordination from Ohio EPA, the Huntington District has determined the proposed project may affect but is not likely to adversely affect the Indiana bat or northern long-eared bat. In accordance to the letter dated February 23, 2016, the USFWS concurred with finding that the proposed project may affect but is not likely to adversely affect listed bat species. No further Section 7 consultation under the Endangered Species Act is required.



### 3.13 Air Quality

According to the U.S. Environmental Protection Agency (USEPA) website, Perry County is classified as “in attainment” (maintaining applicable standards) for all criteria pollutants. Emissions from construction equipment would occur during the construction period. Contractors would operate all equipment in accordance with local, state, and Federal regulations. The PAA is exempted by 40 CFR Part 93.153 from making a conformity determination, since estimated emissions from construction equipment would not be expected to exceed de minimis levels, direct emissions of a criteria pollutant, or its precursors. Any impacts would be short-term, localized, and would occur only during construction phase activities. Impacts to air quality under the PAA would be temporary during construction and minor.

No impacts to air quality are anticipated to occur as part of the NAA.

### 3.14 Noise

Noise associated with the PAA would be limited to that generated during construction. The noise associated with construction would be short in duration and would only occur during daylight hours. Noise is measured as Day Night average noise levels (DNL) in “A-weighted” decibels that the human ear is most sensitive to (dBA). There are no Federal standards for allowable noise levels. According to the Department of Housing and Urban Development Guidelines, DNLs below 65 dBA are normally acceptable levels of exterior noise in residential areas. The Federal Aviation Administration (FAA) denotes a DNL above 65 dBA as the level of significant noise impact. Several other agencies, including the Federal Energy Regulatory Commission, use a DNL criterion of 55 dBA as the threshold for defining noise impacts in suburban and rural residential areas. According to Dr. Paul Schomer in his 2001 Whitepaper, while there are numerous thresholds for acceptable noise in residential areas, research suggests an area’s current noise environment, which has experienced noise in the past, may reasonably expect to tolerate a level of noise about 5 dBA higher than the general guidelines. The Corps Safety and Health Requirements Manual provides criteria for temporary permissible noise exposure levels (see Table 3.1 below), for consideration of hearing protection or the need to administer sound reduction controls.

Duration/day (hours)	Noise level (dBA)
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105



Construction noise would be similar to that of farm equipment and other small machinery used in the local area. A backhoe, end loader, road grader and/or vibratory roller are examples of equipment that is likely to be used during construction. Each emits noise levels around 85 dBA at 45 feet. Construction equipment would be operated during daylight hours; therefore a reasonable exposure time of two hours would be expected during the time residents may be home during the day. Peak outdoor noise levels ranging from 78-90 dBA would occur during the time in which equipment is directly in front of or in proximity to homes and businesses (within 25-100 feet). A maximum noise exposure of approximately 98 dBA, for one hour could occur if equipment were within 10 feet of homes and business. The noise projections do not account for screening objects, such as trees, outbuildings or other objects that muffle and reduce the noise being emitted. The outdoor construction noise would be further muffled while residents are inside their homes. While the construction noise generated would be considered unacceptable according to HUD and FAA standards, these limited exposures and time intervals are still within allowable Corps safety levels. Further, they are similar to typical neighborhood noise generated by gas powered lawnmowers in the local area, which could range from 90-95 dBA at three feet and 70-75 dBA at 100 feet. Residents being exposed to these noise levels would occur if and/or when residents are home and outdoors.

Due to daytime construction and the short and limited duration of elevated noise levels associated with the PAA, impacts from the noise to local residences would be temporary and minor.

There would be no change in noise and thus no impact under the NAA.

### **3.15 Environmental Justice and Protection of Children**

Executive Order (E.O.) 12898 requires Federal actions to address environmental justice in minority populations and low-income populations. According to the U.S. Census Bureau, the 2016 population estimate for Perry County was 35,927 and does not contain significant minority populations. The 2015 census indicates Perry County is 97.6% white and has a median household income of \$42,017 compared with the median household income of \$49,429 for the State of Ohio. Individuals residing in the county below the poverty level is 18.8% compared to 14.8% statewide.

EO 13045 requires each Federal agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children” and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” This EO was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. The potential for impacts on the health and safety of children is greater where projects are located near residential areas.

Service provided by the water system improvements would serve residents who presently experience frequent breaks and leaks, resulting with unsafe potential backflow of contaminant



sources into the system during these events. Implementation of the PAA would provide residents and children with a safe reliable water system, thereby improving the living environment for all residents. No homes or buildings would be impacted by the proposed project; therefore, the PAA meets the directive of EO 12898 and EO 13045 by avoiding any disproportionately high adverse human health or environmental effects on minority or low income populations or children.

No positive impacts to minority or low income populations or children are anticipated to occur from the NAA.

### **3.16 Aesthetics**

The project area is rural, primarily consisting of residential properties and small commercial properties. Temporary disturbance of the local aesthetics would be anticipated during construction of the water system improvements; however after construction, the excavated sites would be restored to original conditions. Additionally, the existing water tank would be removed upon completion of the adjacent tank.

Neither the PAA nor NAA would significantly impact local aesthetics.

### **3.17 Transportation and Traffic**

The majority of the proposed water system would follow road right-of ways. New permanent traffic patterns would not occur as a result of this project. Construction of the PAA in and along existing road right-of-ways would involve some delays and potential detours in the normal traffic flow. If detours would occur, the distance associated with road detours would be relatively short and temporary in nature. Construction on and near road surfaces would be in compliance with standard traffic controls to minimize traffic disruptions and avoid public safety problems. Impacts anticipated to occur from the PAA would be minimal and temporary.

No impacts to transportation and traffic are anticipated to occur from the NAA.

### **3.18 Health and Safety**

The PAA has been designed to provide safe, reliable public water to residents of the project area that are currently utilizing a failing system that experiences frequent breaks and leaks, some requiring temporary boil orders. Providing improvements to the water system is necessary to provide safe, reliable water in the community. Therefore, the PAA is anticipated to have a long term beneficial impact on health and safety for the residents in the project area.

Under the NAA, residents would continue to experience unreliable access and potential contamination during breaks and leaks to the system; perpetuating health and safety concerns that could cause negative impacts on the community.



### 3.19 Cumulative Effects

The Corps must consider the cumulative effects of the proposed project on the environment as stipulated by NEPA. Cumulative effects are "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or Non-Federal) or person undertakes such actions". Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR Part 1508.7 Council on Environmental Quality [CEQ] Regulations).

The cumulative effects analysis is based on the potential effects of the proposed project when added to similar impacts from other projects in the region. An inherent part of the cumulative effects analysis is the uncertainty surrounding actions that have not yet been fully developed. The CEQ regulations provide for the inclusion of uncertainties in the analysis and states that "when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment...and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking" (40 CFR 1502.22).

Temporal and geographical limits for this project must be established in order to frame the analysis. These limits can vary by the resources that are affected. The construction of a water system would have minimal and insignificant negative impacts on the environment. Long term beneficial effects will result from the project and would include health and safety. The temporal limits for assessment of this impact would initiate in 1972 with the passage of the Clean Water Act and end 50 years after completion of this project. The geographical extent would be broadened to consider effects beyond the PAA. The geographical extent considered is the Muskingum Watershed.

The Muskingum Watershed is listed on Ohio's 2016 Section 303(d) list of impaired waters where it is rated as impaired for polychlorinated biphenyl (PCB), siltation, stream flow alteration, pathogens, habitat alterations, nutrients loadings, pH, acidity, and E. coli. In the past, other villages and counties within the watershed have performed upgrades to existing water systems. These past actions had similar temporary impacts but no significant cumulative impact. Additionally, in 2000, the Corps completed a Section 905(b) reconnaissance study for the Muskingum River Basin. The reconnaissance study identified several Local Flood Protection Projects for further study but to date, none of the identified projects have been implemented. In April 2012, the Corps in partnership with the Muskingum Watershed Conservancy District, completed an Initial Watershed Assessment for the Muskingum River Basin. The watershed assessment identified problems, issues, and opportunities throughout the basin along with recommended action such as improvements to water quality. In 2008, Ohio EPA sampled 47 sites on streams within the Moxahala Creek watershed, a sub-watershed of the Muskingum to collect data on water and sediment quality, aquatic biological communities, and habitat. This sampling effort determined what locations met criteria and identified sources of water impairment such as acid mine drainage.



Currently, the Corps is in the initial stages of conducting a Final Watershed Assessment (FWA) for the Muskingum River Basin. The purpose of the FWA will be to provide a Watershed Management Plan for the basin. The Perry County Soil and Water Conservation District currently offers natural resource assistance and education for conservation efforts within Perry County. In the future, watershed programs may address water quality and conservation activities. Impairment of the Muskingum Watershed is expected to continue but if proposed actions are implemented, a cleaner, healthier watershed would be promoted. Water quality standards and regulations are expected to remain as stringent today as in the future.

Section 3.0 documents the existing environment and potential environmental effects of the PAA and NAA with respect to existing conditions. The effects of the PAA, as discussed beforehand, are localized and minor. Past actions that may have resulted in similar effects may include water system improvement actions. No reasonably foreseeable future actions that would have similar impacts as the proposed action were identified. In scoping cumulative effects issues, no resources were identified as having a potential to be significantly affected. Only minor and temporary impacts to ecological resources would be sustained with the implementation of the PAA. These resources would be reestablished upon completion of construction.

The availability of Federal funds through programs, such as the 594 Program, to assist communities with installation and construction of water-related environmental infrastructure and resource protection and development projects in Ohio is an additional benefit to the area. The significance of this action on health, safety, and potable water quality would be positive. Given that the current program remains in place for the foreseeable future and the overall beneficial effect from implementation of the PAA, there is expected to be a positive, though small, cumulative effect on health and safety based on past, present, and reasonably foreseeable actions.

#### 4.0 Status of Environmental Compliance

The PAA is in full compliance with all local, state, and Federal statutes as well as Executive Orders with the exception of the Farmland Protection Policy Act. Coordination with the Natural Resource Conservation Service is on-going and coordination under the Farmland Protection Policy Act will be completed prior to issuance of a FONSI. Compliance is documented below in Table 2.

Statute/Executive Order	Full	Partial	N/A
National Environmental Policy Act (considered partial until the FONSI is signed)		X	
Fish and Wildlife Coordination Act	X		
Endangered Species Act	X		
Clean Water Act	X		
Wild and Scenic Rivers Act	X		
Clean Air Act	X		
National Historic Preservation Act	X		



Archeological Resources Protection Act			N/A
Comprehensive, Environmental Response, Compensation and Liability Act	X		
Resource Conservation and Recovery Act	X		
Toxic Substances Control Act	X		
Quiet Communities Act	X		
Farmland Protection Act		X	
Executive Order 11988 Floodplain Management	X		
Executive Order 11990 Protection of Wetlands	X		
Executive Order 12898 Environmental Justice in Minority Populations and Low-Income Populations	X		
Executive Order 13045 Protection of Children	X		

\*Anticipated FONSI signature to occur after public review

## 5.0 REQUIRED COORDINATION

### 5.1 Agencies Contacted

Direct coordination with the Ohio EPA, SHPO, and USFWS was completed prior to publication of the EA. Agency correspondence is included in Appendix B.

### 5.2 Public Review and Comments

The EA and FONSI will be made available for public review and comment for a period of 30 days, as required under NEPA. A Notice of Availability will be published in the local newspaper, Perry County Tribune, advising the public of this document's availability for review and comment. A copy of the EA will also be placed in the Perry County District Library Crooksville Branch and will be made available on-line at <http://www.lrh.Corps.army.mil/Missions/PublicReview.aspx>. The mailing list for the EA is located in Appendix C.

## 6.0 CONCLUSION

The Village of Crooksville is proposing to improve a failing water system. Customers in the area currently are on an outdated cast-iron water distribution system that dates to the 1920s and experiences frequent breaks and leaks, some requiring temporary "boil orders". Currently, there is potential for contamination in the water system when breaks occur. Water lines, including fire hydrants, are undersized for current standards. Additionally, problems with water loss have resulted in increased costs to the Village. By providing a safe, reliable water system, the proposed project is anticipated to have long-term beneficial impacts on health and safety for residents. No significant adverse impacts have been identified as a result of implementation of the proposed improvements project.



The majority of construction would take place on previously disturbed land. Health and safety would be realized immediately with project implementation. Effects associated with construction would be minor and temporary. BMPs would be implemented during construction to minimize impacts to residents and the environment. Therefore, the PAA would not be expected to have significant impacts on the human environment.