Draft Detailed Project Report
and Environmental Assessment

Continuing Authorities Program (CAP)
Village of Pomeroy, State Route 833, Meigs County, Ohio
Section 14 Emergency Streambank Protection Project

Photo above shows portion of failing streambank and Adjacent Village of Pomeroy, Ohio infrastructure

June 2016

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Section 14 Streambank Protection Project

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Draft Detailed Project Report and Environmental Assessment Village of Pomeroy, State Route 833, Meigs County, Ohio Section 14 Streambank Protection Project

1 INTRODUCTION

1.1 STUDY PURPOSE AND SCOPE

This Detailed Project Report (DPR) which includes an Environmental Assessment (EA) is being prepared by the Huntington District of the U.S. Army Corps of Engineers (USACE) to identify the most cost effective alternative for providing streambank protection along the Ohio River in the Village of Pomeroy, Ohio while minimizing environmental, economic, and social impacts. The Village of Pomeroy (Village) is the non-Federal sponsor. The Village requested Federal assistance in addressing streambank erosion issues under the Section 14 authority in July 2014.

The purpose of the project is to provide a cost-effective means to prevent subsidence of Ohio State Route (SR) 833 and adjacent utilities. SR 833, also referred to as East Main Street, provides the main source of transportation through the Village which is located directly adjacent to the reach of the streambank in need of immediate protection due to flood stage erosion, recessional impacts, and retaining wall failure. Approximately 8,000 linear feet (LF) of streambank is located within the project area, of which approximately 3,300 LF is in immediate need of streambank protection. Since 2013, the streambank erosion and retaining wall collapse have resulted in the displacement of the northbound lane of SR 833. Without treatment, the streambank would continue to undergo flood related erosion and failure, leading to the undercutting and collapse of SR 833. Failure to protect this road would result in loss of access to the only thoroughfare and endanger adjacent utilities and Village infrastructure. As a result, the primary purpose of the study is to identify the sections of the streambank and wall system in immediate need of treatment and to develop a viable treatment solution for the protection of SR 833 and infrastructure.

1.2 LOCATION

1.2.1 Study Area

The Village is located along the right descending bank of the Ohio River in Meigs County, Ohio (39.03003, -82.02184) between river miles 248 and 251. The Village is the County Seat of Meigs County, Ohio. The study area falls within the Upper Ohio-Shade Watershed, which is identified by Hydrologic Unit Code (HUC) 05030202. The Ohio River is 981 miles long, starting in Pittsburgh, Pennsylvania and running to Cairo, Illinois where it joins the Mississippi River. The Ohio River Basin is subject to periodic flooding and is the cause of frequent streambank erosion and recessional failure. A site location map is shown in Figure 1.

Figure 1 – Pomeroy Site Location

1.2.2 Project Area

The project area is located between river miles 248 and 251 and includes approximately 8,000 LF of relic wall adjacent to the Village and SR 833, which runs through downtown Pomeroy, Ohio. The Village is proximate to the Ohio River communities of Lakin, West Columbia, Middleport, Minersville, Hartford City, New Haven, and Racine. The relic wall and subsequent streambank failure is due to the Ohio River flood stage erosion and recessional conditions. The project reach includes 3,300 LF of relic wall and streambank in need of immediate stabilization. SR 833, along with adjacent utilities and private infrastructure, are threatened by the failure of the relic wall and streambank.

Throughout the early 20th century, Pomeroy was the center of one of the largest salt producing regions in the country. Adjacent towns were also developed during this period to utilize extensive coal deposits. An electric interurban railway was constructed in 1900 and provided transportation through these

communities, including the haulage of freight and passengers. Although this system was abandoned in 1929, relic components remain along the alignment. These components include rail, crossties, ballast, and a sandstone masonry wall. This relic wall, which was constructed along the river, was located to maintain adequate horizontal widths for road and railway construction and operation.

As previously referenced, the relic wall was built in 1900, prior to the construction of wicket dam 25 and the subsequent retention of the Gallipolis (now R.C. Byrd) navigation pool to provide for coal transport by railroad and river. Subsequent to the abandonment of the railroad in 1929 and the cessation of extensive underground mining around 1935, this right of way was utilized for the construction and maintenance of SR 833. To better define near-bank subaqueous topography, bathymetric surveys together with cross sections were obtained by side-scan sonar and shallow water soundings. This data was evaluated to determine the extent of shallow water features and navigation pool inundation of coal transfer mooring structures including tipples, landings, and ice piers. It is improbable that flood flow erosional oversteepening, within this outside of bend reach, would result in the destabilization of the proposed treatments.

1.3 STUDY AUTHORITY

Section 14 of the Flood Control Act of 1946, as amended, authorizes USACE to study, design and construct emergency streambank and shoreline works to protect public services including (but not limited to) streets, bridges, schools, water and sewer lines, National Register sites, and churches from damage or loss by natural erosion. The Section 14 authority falls under the Continuing Authorities Program (CAP), which focuses on water resource related projects of relatively smaller scope, cost, and complexity. Traditional USACE civil works projects are of wider scope and complexity and require specific authorization by Congress. Certain types of water resource and environmental restoration projects completed under CAP are delegated authority to plan, design, and construct recommendations without specific Congressional authorization.

1.4 RELEVANT PRIOR STUDIES AND REPORTS

No previous studies have been conducted in current project reach. In 1975, an adjacent Section 14 project was completed directly downstream of the current project area. The proposed treatment stemming from this report will tie in to the existing Section 14 project for stability.

Huntington District has completed multiple bank stabilization projects along the Ohio River in the vicinity of Pomeroy. Stabilization was required along SR 124 within Minersville and sewage treatment lagoons within Middleport. Minersville is the adjacent community upstream from Pomeroy, and Middleport is downstream. Evaluations conducted during these projects determined that bank erosion and wall failures had resulted from flood flows and recessional conditions. Seeps, piping features, and localized surface scour were observed during and subsequent to these events. The project at Minersville included the stabilization of a relic sandstone retaining wall that, similar to Pomeroy, was a component of the Ohio River Electric railway. Additionally, similar wall and road failure conditions existed at Minersville and Pomeroy. Flood flows and recession-related piping resulted in subsidence features adjacent to this wall. The project at Middleport included longitudinal dike and stone slope protection, which stabilized adjacent sewage treatment lagoon embankments.

2 AFFECTED ENVIRONMENT - EXISTING CONDITIONS

2.1 CLIMATE

Executive Order (EO) 13653 requires Federal actions to address climate change. The Ohio River Basin's mid-latitude position makes it susceptible to highly variable weather throughout the year. The Basin's climate is greatly influenced by oceanic and atmospheric interactions. The Basin experiences seasonal weather patterns throughout the year, with climatic conditions typical of summer, fall, winter, and spring seasons for the Mid-Atlantic and Southeast Regions of the United States. Variability in weather tends to be greater during the late winter, spring, and fall seasons. Summers are usually characterized by warm to hot weather with periods of high humidity. Winters are typically mild, with areas at higher elevations experiencing slightly harsher winters and greater snowfall. Fall is typically the driest season, while spring is typically the wettest. This region is projected to receive more precipitation within the watershed system at a higher frequency as described in the July 2015 Ohio River Basin Climate Change Impacts and Adaptation Draft Pilot Study. In this study, an Ohio River gage at the City of Huntington was identified and used as the optimum forecast point to assess future climate change impacts. Historic data from that gage was included in the base flow analysis and future flow projections were produced for that gage point as well to determine more precipitation in the watershed is projected to occur.

2.2 SOILS AND GEOLOGY

2.2.1 Geology and Physiography

Meigs County is located in the Allegheny Plateau, a physiographic section of the larger Appalachian Plateau physiographic province. The Allegheny Plateau is characterized by deep valleys, high hills, and winding streams. During the last ice age, the majority of Ohio was covered with glaciers. The glaciers scoured and flattened the landscape and covered it with thick layers of glacial till comprised of sands, gravel, and clay. Meigs County falls in the part of the State of Ohio that had not been covered by glaciers and therefore, remains hilly and rugged. Elevations within this plateau vary from 100 feet in the glaciated section to 4,000 feet in the unglaciated section.

The Village is located along the right descending bank of the Ohio River, and this protection project would be defined by an area of frequent inundation and soil rework, transport, and seasonal deposition. This alluvial soil is often silt to sand-size. Project elevations are referenced to the R.C. Byrd normal pool elevation of 538 feet msl. Top of bedrock has been encountered in borings completed by Ohio Department of Transportation (ODOT) at approximate elevations of 530 to 525 feet. This project includes limited clearing of vegetation and the construction of longitudinal dikes, so this project will not encounter underlying bedrock, which was described as sandstone containing micas and thin clay seams.

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2.2.2 Soil Associations

River bank soils at this project include recent and relic alluvium[1], colluvium[2], and fill, which are retained landward of the failing sandstone block wall. Proximate to elevation 538 feet, soils generally include silty fine sand and sandy silt, as would be expected at this location of normal navigation pool contact along the river. Fill includes slag and coal materials that were most likely a byproduct of local mining and industry. Silts and sands are the dominant soils in the project area. These soils are susceptible to flood recession-related piping and erosion. Voids between sandstone blocks in the relic wall provide a path for water to infiltrate and, on recession, internally erode previously retained soils. As the river recedes from flood crest more rapidly than these soils can drain, the fill is eroded within areas underlying SR 833. Continued internal erosion results in undermining of the wall and will continue to cause progressive failure and collapse as erosion encompasses tieback layers and SR 833 fill. Without treatment, these flood-related erosion and failure processes would result in retaining wall collapse and breaching of SR 833.

2.2.3 Hydric Soils

According to the Soil Use, National Hydric Soils list published by the Natural Resources Conservation Service (NRCS), for Pomeroy, Ohio there are no hydric soils present within the project area.

2.3 HYDRAULIC ANALYSIS

Stone requirements for bank protection alternatives were determined, based on the criteria and procedures outlined in Engineering Manual (EM) 1110-2-1601, as revised. The average channel velocity for the 100-year discharge was computed to be 6.75 feet per second for this reach of the Ohio River. Based on the computed velocity, and the procedures outlined in the aforementioned regulation, the analysis indicates that a minimum stone buttress thickness of at least 15 inches is required to ensure the integrity of the stone against tractive force failure mechanisms. The recommended gradation limits for the stone size distribution are provided in Table 1. A flood frequency summary at Ohio River Mile 248 is provided in Table 2.

Table 1 – Gradation Limits for Stone Slope Protection

Percent Lighter by Weight	Maximum Stone Diameter (in.)	Minimum Stone Diameter (in.)
D_{100}	10.0	7.5
D_{50}	7.0	6.0
D_{15}	5.0	4.0

[1] Alluvium - a deposit of clay, silt, sand, and gravel left by flowing streams in a river valley or delta, typically producing fertile soil.
[2] Colluvium - material that accumulates at the foot of a steep slope.

Table 2 – Flood Frequency Summary of Elevations and Discharges at Ohio River Mile 248.0

Percent Chance Exceedance (yr.)	Discharge (cfs)	Water Surface Elevation (feet above m.s.l.)
99.9%	242,000	543.8
50%	292,000	549.0
20%	347,000	554.3
10%	388,000	557.5
5%	428,000	560.2
2%	486,000	565.1
1%	537,000	568.1

2.4 SURFACE WATER AND OTHER AQUATIC RESOURCES

2.4.1 Surface Water

Water quality in the Ohio River adjacent to the project area is relatively poor. In general, industrial pollutants, municipal sewers, storm water discharge, urban runoff, and loss of riparian habitat buffer have resulted in long-term impacts on the water quality. The current wall failure and fill displacement is resulting in additional soil rework and transport during flood events. Per Section 303(d) of the Clean Water Act (CWA) and the Water Quality Planning and Management Regulations (40CFR130.7), the entire length of the Ohio River is listed as impaired due to elevated polychlorinated biphenyls (PCB) levels. In addition, the water quality in the project area is also impaired by high levels of iron and bacteria. The Ohio River is not a listed river under the Wild and Scenic River Act.

2.4.2 Groundwater

The southeast region of Ohio is known to have sand and gravel wells with sandstone aquifers that store groundwater. An Ohio Department of Natural Resources (ODNR) study completed in 2012 identified Acid Mine Drainage (AMD) in the project area. When water flows through a mine, which was inadequately sealed, coal bed areas are subjected to pyrite corrosion and bacterial action, which results in the formation of AMD. This drainage has high conductivities and low pH which, without treatment, results in iron and manganese hydroxides and diluted sulfuric acid. AMD can contaminate drinking water, disrupt growth and reproduction of aquatic plants and animals, and can corrode infrastructure such as bridges.

2.4.3 Floodplains

EO 11988 requires Federal agencies to consider the potential effects of their purposed actions to floodplains. The project area is located adjacent to the Ohio River which experiences occasional periods of flooding. According to the Flood Insurance Rate Map (FIRM) 39105CIND1B dated May 19, 2014, produced by the Federal Emergency Management Agency (FEMA), the project area is within the regulatory floodway and Special Flood Hazard Area (SFHA) (See Appendix B). The regulatory floodway

areas of the SFHA must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

2.4.4 Wetlands

A National Wetland Inventory Map (NWI) was reviewed for the project area and a site reconnaissance was conducted to determine validity of the NWI maps. The NWI map indicated that there are no wetlands on or adjacent to the project area (See Appendix B). The site reconnaissance also indicated no wetlands are located within the project area.

2.5 FISH AND WILDLIFE HABITATS

2.5.1 Terrestrial and Aquatic Vegetation

Terrestrial vegetation within the project area is limited due to streambank erosion throughout the reach. The project area lacks diversity of riparian hardwoods along the river bank. Sycamore trees are the dominant native tree species; however, the riparian area has been compromised by invasive species such as Tree of Heaven. A portion of the project is maintained and mowed to the top of bank. Other areas of the project consist predominately of low quality small sapling shrubs and invasive herbaceous and woody vegetation. There is no aquatic vegetation along this portion of the Ohio River due to the near-bank shallow water depth and degraded water quality.

2.5.2 Fauna

With little vegetation, cover, habitat, and space, few animals are found in the project area. Terrestrial species observed onsite include various bird species, which are highly mobile. The Ohio River supports an aquatic community of species that include invertebrates, mussels, fish, amphibians, and reptiles. All of the listed aquatic species could be found within the project area.

2.5.3 Existing Terrestrial and Aquatic Habitats

The project area contains a low quantity of riparian habitat within the failed relic wall and streambank reaches along the Ohio River. The Ohio River supports an aquatic community of species that include invertebrates, mussels, fish, amphibians, and reptiles, which live in spite of these human disturbances. Riparian habitats, the strips of inundation-tolerant vegetation along rivers, are important for the aquatic health of a river system. Riparian habitat captures and filters silt and pollution during flooding and provides an influx of plant and insect matter that serves as food for the aquatic ecosystem. Dense riparian vegetation is becoming increasingly rare. Because the project area is prone to wall and streambank failure leaving limited soil for growth, riparian vegetation is stressed. Fill transported away from the structure can harm sensitive mussel species, which are filter feeders and live in the benthic substrate. Fish, which breed, feed, and find shelter near riparian habitat, are also impacted by excess sedimentation. In general, industrial pollutants, municipal sewers, urban runoff, loss of riparian buffer, and adverse effects from navigational dams and tow boats have resulted in long-term impacts on water quality in the Ohio River and its tributaries.

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2.6 ENDANGERED AND THREATENED SPECIES

2.6.1 Federal

The Endangered Species Act of 1973 requires Federal agencies to consider the effects of actions on Federally listed endangered, threatened, and/or candidate species. There are 30 threatened or endangered species found within Ohio as listed by the U.S. Fish and Wildlife Service (USFWS). Of these, six species could potentially be found within Meigs County. The species include two bats – Indiana bat (*Myotis sodalis*) and Northern long-eared bat (*Myotis septentrionalis*) – and four mussels – Fanshell (*Cyprogenia stegaria*), Rabbitsfoot (*Quadrula c. cylindrica*), Sheepnose (*Plethobasus cyphyus*), and Snuffbox (*Epioblasma triquetra*). Meigs County is also within range of the Bald Eagle. The Bald Eagle is protected under the Bald and Golden Eagle Protection Act.

2.6.2 State

The ODNR Division of Wildlife has indicated that 24 state listed state species could be located within the project area. Some species overlap with the Federally listed species. Coordination with ODNR and an account of state listed species in the project area can be found in Appendix B.

2.6.3 Critical Habitat

According to the USFWS database, there is no critical habitat found in the project area.

2.7 RECREATIONAL, SCENIC, AND AESTHETIC RESOURCES

2.7.1 Local Resources

The Village along SR 833 consists of commercial properties including locally owned businesses, shops, and restaurants along with residential and some industrial properties. The Village hosts multiple festivals and events including the annual Gold Wings and Ribs festival, Kickin' Summer Bash, Big Bend Blues Bash, and Sternwheel Riverfest. The Ohio River adjacent to the Village provides recreational tourism. Adjacent to the project area, a boat launching ramp and public river access offer boating and fishing access. In addition, churches, municipal buildings, and public services provide other community resources.

The project area contains low quality and quantity riparian vegetation near the bank line. The aesthetic quality of the project is further diminished by the presence of stone and failing relic wall features. A restricted view of the project area is accessible from the top of bank, while a full view of the project can be seen from the opposing bank in Mason County, West Virginia. Recreational boating is common in the Ohio River. This site would be primarily visible to recreational boaters and barge industry workers.

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2.7.2 Regional Resources

The Ohio River, which runs from Pittsburgh, Pennsylvania to Cairo, Illinois, is the largest tributary to the Mississippi River. The Ohio River is a major channel for commercial, industrial, and recreational uses. Commercial and industrial uses include shipping of resources and commodities through barge traffic. Recreational uses include boating, water-skiing, jet skis, and fishing. The western terminus of SR 833, the primary thoroughfare for the Village, is located at the Pomeroy-Mason Bridge, which connects the Village with the State of West Virginia. The eastern terminus of SR 833 joins the intersection of primary transportation arteries two miles north of the Village, which includes US Route 33.

2.8 CULTURAL RESOURCES

2.8.1 Cultural History

Historically, all of the lands within Meigs County were part of a colonization initiative called the Scioto Company Lands, which preyed upon unsuspecting early French colonists at the conclusion of the eighteenth century. Most of the French were ill-prepared to deal with the rigors of frontier life in southeastern Ohio, but some remained to etch out a life within the region. Meigs County was named in 1810, after an early Governor of Ohio, Mr. Return J. Meigs. The fertile agricultural lands of Meigs County attracted Western European settlers to the region and Pomeroy, which is now the county seat of Meigs County, Ohio. The first settler, believed to be Nathaniel Clark, arrived in 1816. The Village was named for Samuel Wyllis Pomeroy, who was an early resident of the community. Although Meigs County was formed in 1819, the Village did not become the county seat until 1841.

The Village grew quickly. This growth primarily resulted from an abundance of coal in the region. Thousands of people during the 1800s made their living from mining coal. The first coal mine opened in 1819. By 1846, approximately 1,600 people resided in the Village, which contained four churches, one newspaper office, two iron foundries, one machine shop, and ten stores. The Village continued to grow over the next several decades, attaining a population of 5,560 people in 1880. During the 1880s, most residents found employment in salt or coal mining. Two bromine factories existed in the Village, as did two newspapers, seventeen churches, and two banks. Due to a declining amount of coal and salt production in the region, the Village's population dropped to 4,726 residents in 1890. Circa 1900, the Pomeroy & Middleport Railway was constructed along the bank of the Ohio River around 1900, which operated an interurban railroad between Middleport and Racine, including the haulage of freight and passengers. The railway was abandoned around 1936, however relic components remain along the alignment. Many of the coal miners used this railway frequently to access coal mines in the region. Also associated with the Railway was a sandstone retaining wall built along the Ohio River. The wall is composed of quarried sandstone blocks with tieback course a header course at the top. It is estimated that the wall's date of construction is 1898, and was associated with the Pomeroy & Middleport Railway that operated from 1900 through 1936. The retaining wall is located within the proposed project area. Figure 2 shows the approximate railroad alignment in a 1908 state map, and Figure 3 is a recent photograph of the sandstone wall constructed as a component for this railroad.

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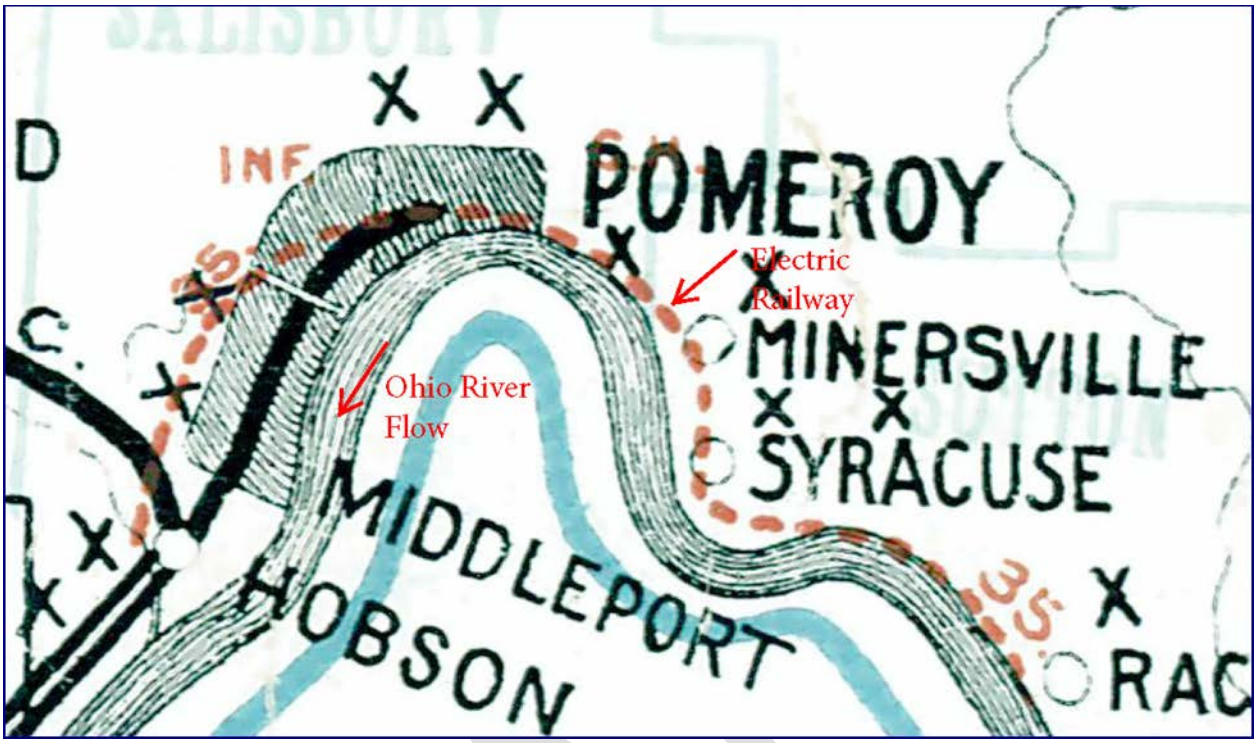

Figure 2 – 1908 Ohio Railroad Map

Figure 3 – Relic Sandstone Wall in 2015

2.8.2 Previous Investigations

An archeological survey was conducted within the footprint of the study area in 2007 by ASC Group Inc. This archeological survey was performed for a replacement of the Pomeroy-Mason Bridge. During this survey, no archeological sites were identified within the footprint of the proposed project.

2.9 AIR QUALITY

The U.S. Environmental Protection Agency (USEPA) is required to set air quality standards for pollutants considered harmful to public health and welfare. The Primary National Ambient Air Quality Standards (NAAQS) 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 prevention of damage to animals, crops, vegetation, and buildings. These standards have been established for the following six pollutants, called criteria pollutants (as listed under Section 108 of the Clean Air Act (CAA)):

- Carbon monoxide (CO)
- Lead (Pb)
- Nitrogen dioxide (NO2)
- Ozone (O3)
- Particulate matter, classified by size as follows
    - An aerodynamic size less than or equal to 10 micrometers (PM 10)
    - An aerodynamic size less than or equal to 2.5 micrometers (PM 2.5) 1997 Standard
    - An aerodynamic size less than or equal to 2.5 micrometers (PM 2.5) 2006 Standard
- Sulfur dioxide

According to Ohio Environmental Protection Agency (OEPA), Meigs County is in full attainment for National Ambient Air Quality Standards.

2.10 NOISE

Noise is measured as Day Night average noise levels (DNL) in “A-weighted” decibels (dBA) most sensitive to the human ear. 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), for consideration of hearing protection or the need to administer sound reduction controls. Ambient noise around the project area is representative of a mixed commercial and residential.

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Table 3 – Permissible Non-Department of Defense Noise Exposures

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

2.11 HAZARDOUS AND TOXIC SUBSTANCES

On March 15, 2014 a site visit was conducted for the limited Phase 1 HTRW assessment within the proposed project area. The following observations were noted during the site visit:

- In the area of 828 East Main Street, a stone structure, appearing to be a former barge loading/off-loading area or a possible former coal tipple, was observed in the river along the streambank. A resident across the street was interviewed, who stated the stone structure was a former barge loading area for the coal mines and steel industry in the area.
- At several places along the streambank, there appeared to be historical structures that could have been associated with coal mining or the iron and steel plants in the area. Also, at several places along the streambank, there appeared to be slag, railroad ties, gravel, etc. associated with the railroad and/or the historical coal mines/iron and steel industry in the area.
- Signage for one Combined Sewage Overflow (CSO) location was identified.
- The locations of several Leaking Underground Storage Tank (LUST) sites were observed during the site visit. According to OEPA records, site assessments to address impacts to soil, groundwater, and surface water have not been completed for these sites. Following are there identified LUST sites: Former Pomeroy Food Shop, Former Sugar Run Ashland, and Par Mar #4.
- The areas of the former iron and steel plants (Union Steel Company/American Steel and Hopper Co., former Midwest Steel/Mountaineer Metals, etc.) along Condor Street and Main Street were observed. Old railroad spurs are visible in several places along these areas.
- AMD was observed in the vicinity of one of the mine entrances along the project area, in the area of one of the LUST locations.

In addition, mapping was obtained for the project area and a review of reasonably ascertainable standard historical sources was performed as part of the HTRW investigation. Mapping indicated land disturbance associated with underground and surface mining activities. The ODNR mine website indicates potential for AMD within the project area due to the proximity of mining and historical coal tripples. Borings completed by ODOT encountered material which included fine to coarse alluvial and colluvial soils and fill, including coal materials. A drawing of CSO discharge locations within the Village show that one CSO is located in the project area. After further investigation, it was determined that this location has not been used as a CSO but could potentially be needed in the future. A regulatory record

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search by Environmental Data Resources, Inc. (EDR) indicated a total of 117 mapped sites are located within the search area. Barge tows carrying coal, industrial projects, and chemicals navigate throughout the river channel. Figure 4 is a map indicating the areas of abandoned mines proximate to Pomeroy. Reconnaissance investigations and research indicate there are more than 40,000 acres of abandoned underground coal mines located in the surrounding area around the project. Additional maps and locations of potential HTRW issues can be found in Appendix B in the HTRW report.

This project will require limited excavation to form placement surfaces within recently deposited Ohio River alluvium. AMD, LUST, CSO, and other HTRW-related conditions should not be affected by site preparation, construction, or maintenance of the proposed project.

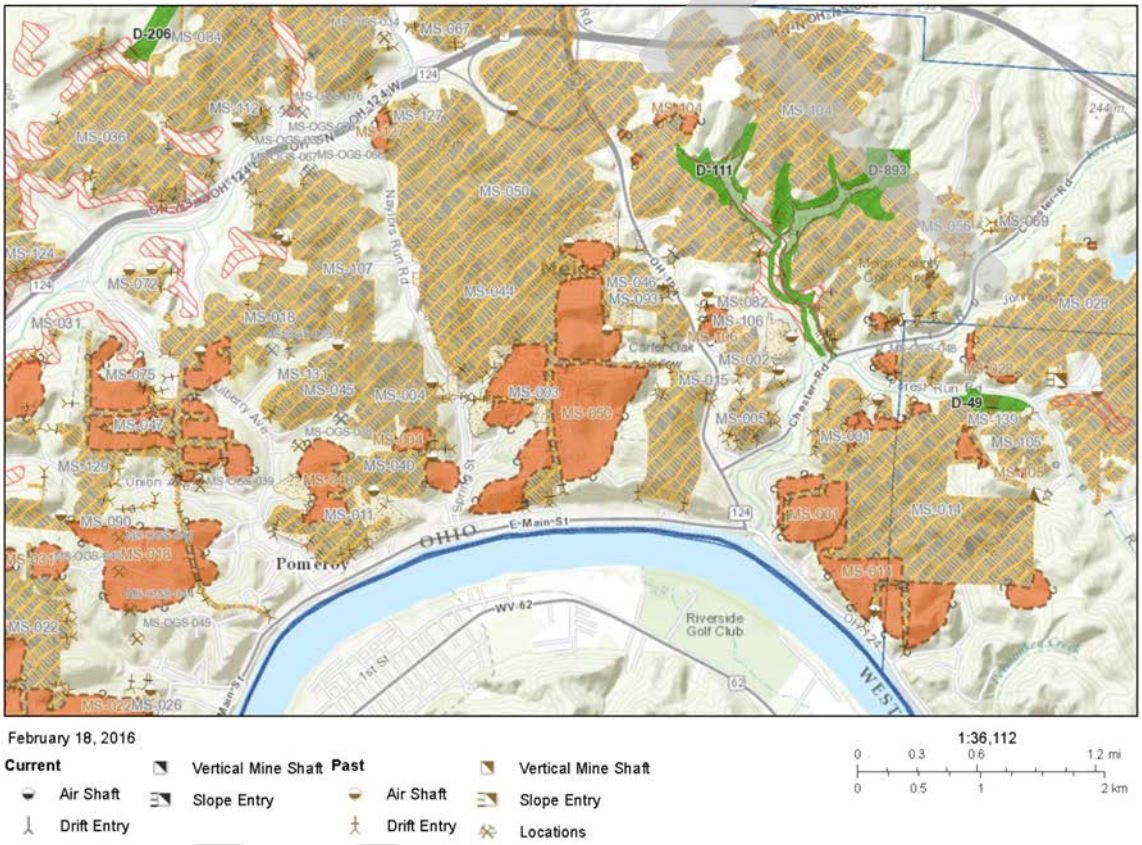

Figure 4 – Mines proximate to Pomeroy, OH (Ohio Department of Natural Resources)

2.12 SOCIOECONOMIC AND ENVIRONMENTAL JUSTICE

2.12.1 EO 12898 Environmental Justice

Under EO 12898 "Federal Action to Address Environmental Justice in Minority Populations and Low Income Populations," Federal agencies are directed to identify, address, and avoid disproportionately high and adverse human health or environmental effects on minority and low income populations. According to the U.S. Census Bureau, the Village has been decreasing in population since 2000. As of

2013, the Village's population was 1,843, down 6.3% since 2000. Approximately 94% of the population is white and does not contain significant minority populations. The median household income is $22,154 compared with $48,081 for the State of Ohio. Individuals residing in the Village below the poverty level are at 44.3% compared to 15.8% statewide.

2.12.2 EO 13045 Protection of Children

EO 13045 "Protection of Children from Environmental Health Risks and Safety Risks" was issued in 1997. This order applies to economically significant rules under EO 12866 "Regulatory Planning and Review" that concerns an environmental health or safety risk that USEPA has reason to believe may disproportionately affect children. Environmental health risks or safety risks refer to risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to). When promulgating a rule of this description, USEPA must evaluate the effects of the planned regulation on children and explain why the regulation is preferable to potentially effective and reasonably feasible alternatives.

2.13 TRANSPORTATION AND TRAFFIC

The project area is located along the Ohio River and can be accessed from SR 833. SR 833 is 5.1 miles long. As the only thoroughfare for the Village, the western terminus is located at the Pomeroy-Mason Bridge which connects the Village with the State of West Virginia. The eastern terminus of SR 833 joins the intersection of primary transportation arteries two miles north of the Village, which includes US Route 33. According to a traffic survey report completed by ODOT in 2012, SR 833 received an Annual Average Daily Traffic volume of approximately 6,500 vehicles a day.

2.14 HEALTH AND SAFETY

Currently, rework and transport of fill is occurring in the project area, which could impact water quality and aquatic resources in the Ohio River. Failing wall and subsequent streambank conditions are currently threatening the integrity of SR 833 and adjacent infrastructure.

3 PLAN FORMULATION

3.1 PROBLEMS AND OPPORTUNITIES

SR 833 provides the main source of transportation through the Village, which is located directly adjacent to a reach of the streambank in need of immediate protection due to flood stage erosion, recessional conditions, and structural failures. Since 2013, streambank erosion and relic wall collapse have resulted in the displacement of the north bound lane of SR 833. This erosion and failure have resulted in subsidence of paved lanes, shoulders, curbs, drop inlets, cross drains, and utilities. Without treatment, the relic wall would continue to undergo flood related erosion and failure, leading to the undercutting and breaching of SR 833 and adjacent utilities. Implementation of the proposed protection measures will restore stability to the streambank and prevent failure that would impact SR 833 and adjacent utilities.

3.2 OBJECTIVES AND CONSTRAINTS

3.2.1 Planning Objectives

The planning process for this project seeks to identify the sections of wall and streambank in immediate need of treatment and to develop a viable treatment solution for the protection of SR 833 and adjacent utilities.

3.2.2 Planning Constraints

The study being conducted will recommend the most cost effective and environmentally acceptable solution for stabilizing the failing relic wall and streambank along the Ohio River within reaches adjacent to SR 833. Challenges associated with this study would include determining the optimal method for construction of the recommended plan. Water based construction will be implemented due to the close proximity of SR 833 to the river and the effects complete closure of SR 833 would have on the Village. Most of the stone delivery and placement will be completed from barges moored adjacent to the wall. Partial closure of SR 833 may be needed for construction activities that cannot be completed from the barge – temporarily impacting the Village. The risk associated with this challenge is low. Due to the extent of the project area and its location adjacent to the Ohio River, coordination with multiple agencies is necessary for the completion of all required local, state, and Federal regulations including but not limited to: USFWS, Ohio State Historic Preservation Office (SHPO), and OEPA.

In the Ohio Mussel Survey Protocol, the Ohio River is listed as Category 4 stream and will require a mussel survey in the project area. The mussel survey will require additional coordination with USFWS and the project may incur additional costs based on what type of mussel species are identified during the Phase I survey required and which may trigger a more in depth Phase 2 survey and/or relocation effort. Both the Phase 2 survey and relocation effort would add significant cost to the mussel survey and would impact the cost of the project during the feasibility phase.

Coordination is also critical to determine whether any additional effort is needed to complete obligations required under Section 106 of the National Historic Preservation Act with the SHPO. Currently, a programmatic agreement is being executed with SHPO in order to fulfill cultural resource requirements. Should the SHPO require a more detailed site specific analysis, the project could incur additional cost and delays.

Furthermore, an individual 401 Water Quality Certification from the State of Ohio will be required for this project. The 401 permit will be obtained prior to the start of construction. Issuance of a 401 could potentially delay construction of the project as the USACE Huntington District would not complete the 401 application process until construction funding is allocated for this project.

The main driver for the timing of when the permits and surveys will be completed is due to the limited funding in the feasibility phase. Some portions of the environmental study will be pushed to the design and implementation phase due to the availability of additional funding. Huntington District is aware of the schedule and cost issues that could occur as a result of deferring environmental studies, such as 401 certification and SHPO analysis through the programmatic agreement. USACE is willing to accept these risks in order to complete the feasibility phase within the limited funds.

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3.3 MOST PROBABLE FUTURE WITHOUT PROJECT CONDITIONS

Without protection, the relic wall and associated streambank would continue to fail during Ohio River floods. Wall failure would eventually result in the collapse of approximately 3,300 LF of SR 833 and adjacent utilities would be breached. Failure to implement treatment would eventually result in loss of access to public infrastructure, industries, and commercial operations within the Village. One bank stabilization project was completed by the Village in the recent past out of necessity. The Village does not have adequate funding or technical capability to complete a robust project without Government assistance. If the USACE funded project does not occur, the Village would likely address failure using short term measures as funding is available. Without the USACE funded project, the Village would not be able to implement a complete solution and SR 833 would eventually fail, cutting off the only thoroughfare through the Village. Under the no action alternative, no other projects are planned to occur in the area in the foreseeable future.

3.4 Measures to Achieve Planning Objectives

3.4.1 Preliminary Structural and Non-Structural Measures

3.4.1.1 Structural Measures

Three structural measures were considered throughout alternative formulation to address wall failure and subsequent fill erosion impacting SR 833 through the Village. These structural measures include the following:

Longitudinal Dike Erosion Protection – Requirements for the construction of this measure would include clearing and grubbing of vegetation, clearing rubble, and excavation to provide suitable placement surfaces for the treatment from the shallow water bench to the lower sandstone block wall. A discontinuous longitudinal dike would be placed on the right descending bank of the Ohio River. This is not a complete plan and would require additional measures.

Sheet Pile – Installation of this measure would require driving sheet pile landward of the relic wall to effect stabilization of SR 833 and adjacent utilities. Stone would be placed to construct transitions at the upstream and downstream limits of treatment segments.

Stone Buttress – Installation of this measure would require the excavation of failed soil, fill, debris, and vegetation to expose a suitable placement surface. Stone on 1V:1.5H slope with a top of wall width of six (6) feet or more would be placed. The relic wall would form a suitable placement surface for the buttress.

3.4.1.2 Non-structural Measures

Two non-structural measures were considered throughout alternative formulation to address streambank erosion impacting SR 833 through the Village. These non-structural measures include the following:

Limited Relocation – This measure would involve the relocation of the SR 833 along with the trail system, reconstruction of cross-drains, relocation of utilities, and property acquisition.

Vegetative Stabilization – Installation of this measure would rely on stabilization through vegetative treatments. Vegetative stabilization would not be effective at this site due to the continuing wall collapse. Excavations to stable slope geometries, which would allow for successful placement of vegetative treatments, would require the relocation of SR 833 and adjacent utilities. This is not a complete plan and would require additional measures.

3.5 FORMULATION AND COMPARISON OF ALTERNATIVE SOLUTION SETS

3.5.1 Alternative Plan Descriptions

The following alternative plans and No Action Alternative were considered to respond to the Ohio River flood erosion and streambank failure adjacent to the Village which is endangering SR 833 and adjacent utilities.

Alternative Plan A (Longitudinal Dike Erosion Protection and Limited Stone Buttress) – Requirements for the construction of Alternative Plan A would include clearing and grubbing of vegetation, clearing debris, and excavation of failed material to provide suitable placement surfaces for the treatment from a shallow water bench to the lower sandstone block wall. Discontinuous longitudinal dikes consisting of blended 12-inch top-size stone totaling approximately 3,300 LF in length with dimensions approximately six (6) feet high and a crest width of approximately three (3) feet and side slopes of 1V:1.5H would be placed along the right descending bank of the Ohio River between river miles 248 and 251. This dike treatment will stabilize the wall and preclude upslope erosion and failure during and after flood events. To address the potential for secondary flood stage flows from outflanking the treatment, both upstream and downstream transitions would be constructed adjacent to the stable reaches. Stone buttresses will be constructed to stabilize failed reaches of wall which total approximately 300 of the 3,300 LF in length. Subsidence features landward of the wall would be backfilled with clayey soils. The total project cost at a conceptual level is estimated to be $1,924,000.

Alternative Plan B (Sheet Pile) – Installation of this measure would require driving sheet pile landward of the relic wall to effect stabilization of SR 833 and adjacent utilities. Stone would be placed to construct transitions at the upstream and downstream limits of treatment segments. Cost for construction of this treatment at a conceptual level is estimated to be $6,700,000.

Alternative Plan C (Stone Buttress Only) – Installation of this measure would require the excavation of failed soil, fill, debris, and vegetation to expose a suitable placement surface. Stone on 1V:1.5H slope with a top of wall width of six (6) feet or more would be placed. The relic wall would form a suitable placement surface for a buttress. Cost for construction of this treatment at a conceptual level is estimated to be $2,600,000.

Alternative Plan D (Vegetative Stabilization and Limited Relocation) – Installation of this measure would rely on stabilization through vegetative treatments. Vegetative stabilization or stable riparian

habitat development would not be effective at this site due to the continuing wall collapse. Excavations to stable slope geometries, which would allow for successful placement of vegetative treatments, would require the relocation of SR 833 and adjacent utilities. Cost for construction of this treatment at a conceptual level is estimated to be $3,000,000.

Alternative Plan E (Limited Relocation) – This measure would involve the relocation of the SR 833 along with the trail system, reconstruction of cross-drains, relocation of utilities, and property acquisition. Cost for relocation at a conceptual level is estimated to be $11,000,000.

No Action Alternative (NAA): The 'No Action' alternative would result in continued bank erosion and wall failure due to Ohio River flood flows, leading to the collapse of approximately 3,300 LF of streambank and adverse impacts to SR 833. Failure to stabilize the wall and the road would result in loss of access to public, industrial, and commercial operations within the Village. In the past, ODOT has used a cast-in-place wall system to stabilize an upstream 270 LF reach adjacent to the road. As reported in correspondence between the Village and ODOT concerning the failing wall, no assistance from ODOT would be available in the foreseeable future to protect the streambank and SR 833. Without assistance from USACE, the Village would, as funds allow, likely continue placing rubble in an attempt stabilize the wall. The ODOT reach and other relatively stable reaches, where the wall and road is not immediately endangered by flood flows and related conditions, have been excluded from project consideration. The NAA is not considered to be acceptable due to the immediate need for protection of SR 833.

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3.5.2 Comparison of Alternative Plans

Table 4 – Comparison of Alternative Plans

Criteria	Alternative Plan A (Longitudinal Dike Erosion/Limited Stone Buttress)	Alternative Plan B (Sheet Pile)	Alternative Plan C (Stone Buttress)	Alternative Plan D (Vegetative Stabilization and Limited Relocation)	Alternative Plan E (Limited Relocation)
Cost ($Million)	1.9	6.7	2.6	3.0	11.0
Constructability	YES Clearing and grubbing of vegetation, clearing of rubble, and excavation	YES Excavation of failed soil, fill, debris, and vegetation	YES Excavation of failed soil, fill, debris, and vegetation and limited wall removal and placement of a geotextile reinforcement and separation fabric.	YES Requires excavation and placement of material	YES Relocation of road and adjacent utility infrastructure, and abandonment of existing infrastructure.
Environmental Acceptability	YES Minimal impacts	YES Minimal impacts	YES Minimal impacts	NO Potential significant aquatic impacts	NO Increased footprint will impact terrestrial resources; Minimal aquatic impacts
Effectiveness	YES Reduces risk with minimal impacts	YES Reduces risk with minimal impacts	YES Reduces risk with minimal impacts	NO Potential significant aquatic impacts	YES Reduces risk with minimal impacts
Efficiency	YES Most cost effective plan	NO	NO	NO	NO
Acceptability	YES	YES	YES	YES	YES

Alternative Plans A, B, C, D, E, and the NAA were compared and evaluated relative to cost, constructability, environmental acceptability, effectiveness, efficiency, acceptability, and completeness. Alternative Plans B, C, D, and E have been excluded from further consideration. Table 2 was prepared to show the comparison of Alternative Plans. An expanded explanation of why these plans have been screened is located in Section 3.5.3. Alternative Plan A and the NAA have been moved on to the final array of plans for this project. Huntington District has successfully implemented longitudinal dike treatments similar to Alternative Plan A at previous Ohio River streambank protection projects. The full cost breakdown for Alternative Plan A is included in Appendix C. Alternative Plan A, the Recommended Plan, is the Least Cost Alternative Plan.

3.5.3 Excluded Plans

Four of the initial plans, Alternative Plans B, C, D, and E, have been eliminated from further consideration.

Alternative B has been eliminated due to cost.

Alternative C has been eliminated due to cost and limited sandstone wall removal. Currently there is a sandstone retaining wall within the Area of Potential Effect, which is older than 50 years of age. This structure will need to be documented and evaluated to determine its National Register of Historic Places eligibility. Effects could be potentially significant if the wall is found to be eligible for listing on the National Register of Historic Places.

Alternative Plan D has been eliminated due to cost and potential significant aquatic impacts. The environmental concerns would be potentially significant to aquatic resources, since this alternative would increase the area of riparian habitat. Terrestrial impacts would also occur as a result of the need to slope the bank landward to form suitable placement surfaces for vegetative treatments. The landward sloping would require the relocation of SR 833 due to its close proximity to the failing wall.

Alternative Plan E has been eliminated due to cost and environmental concerns. The environmental concerns would be potentially significant to urban and terrestrial impacts, which include but are not limited to tree clearing, for the relocation of SR 833 and adjacent infrastructure and utilities. The entire State of Ohio has potential habitat for two Federally listed bat species which may be affected by the significant tree removal required for relocation. Aquatic impacts should not occur as a result of implementation of Alternative Plan E.

3.5.4 Risk and Uncertainty

This study was undertaken using Risk Informed Decision Making to insure that study, implementation, and project outcome risks were taken into account when formulating plans, selecting a plan for implementation, and during feasibility level design efforts. A discussion of risk and uncertainty allows the Project Delivery Team (PDT) and project sponsor to access risks likely to be encountered as well as the consequences that could result from actions taken (or not taken) and items considered (or not considered) during each stage of the project. The risk and uncertainties for this project were developed using an Abbreviated Cost and Schedule Risk Analysis (CSRA). The analysis identified the 80%

confidence level project cost and schedule duration. The risks and uncertainties for this project have been summarized in a Cost Engineering Abbreviated CSRA table which can be found in Appendix C.

3.6 RECOMMENDED PLAN

3.6.1 Recommended Plan Description

Alternative Plan A (Longitudinal Dike Erosion Protection, Lower Wall Stabilization, and Limited Stone Buttress):

Alternative Plan A (Longitudinal Dike Erosion Protection and Lower Wall Stabilization) is recommended for implementation as the most cost effective solution. Requirements for the construction of Alternative Plan A would include clearing and grubbing of vegetation, clearing debris, and excavation to provide suitable placement surfaces for the discontinuous longitudinal dikes totaling approximately 3,300 LF in length with dimensions approximately 6 feet high and a crest width of approximately 3 feet and side slopes of 1V:1.5H, which would be placed on the right descending bank of the Ohio River between river miles 248 and 251. To address the potential for secondary flood stage flows from outflanking the treatment, both upstream and downstream transitions adjacent to stable reaches would be constructed. Stone buttresses would also be constructed to stabilize failed reaches of wall which total approximately 300 of the 3,300 LF in length.

Design calculations predicated on frequency of overtopping are not required to establish the intended function of these longitudinal dikes. The dike structures will address the continued loss of wall fill material and resulting relic stone block wall displacement. Since, as previously referenced, the wall was constructed with tiebacks (see Section 2.8.1, Cultural History) at 4-foot vertical intervals, the crest of the longitudinal dike will be established at elevation 542 feet msl which coincides with the lowermost intact tieback stone course, thereby precluding subsequent discontinuous wall failures. The top of the dike elevation will be established to preclude flood related recharge-discharge conditions that presently occur between this lowermost tieback course and the R.C. Byrd slackwater navigation pool elevation 538 feet msl (see Section 4.2). Surveys of the previously referenced discontinuous wall failure areas were required to determine longitudinal extents of stabilization. Longitudinal dike design methodology can be referenced to Section 7.1.4 in the “WES Stream Investigation and Streambank Stabilization Handbook”.

Appendix A includes engineering diagrams, work limits, extents and typical cross sections. Subsidence features landward of the wall would be backfilled with clayey soils. Construction would be accomplished by the Indefinite Delivery Indefinite Quantity (IDIQ) Contractor using river-based equipment. Clearing of seasonal nuisance vegetation (e.g. Japanese knotweed, multiflora rose) will be required in areas of stone longitudinal dike and buttress placement. The basal width of the longitudinal dikes is approximately 15 feet to 30 feet. The basal width of the stone buttress foundation is approximately 40 feet. Construction materials will consist of well-graded 12-inch top-size blocky, durable limestone placed to stable geometries and to heights and extents as referenced. Table 5 below includes line item quantities for the recommended treatment. The total project cost at a conceptual level is estimated to be $1,924,000.

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The design and implementation cost will be further refined and broken out in the design and implementation phase of the project.

Table 5 – Line Item Quantities

Work Item	Unit	Quantity
Mobilization/Demobilization	EA	1
Blended stone inclusive of filter component	TN	25,600
Excavation with off-site disposal	CY	1,000
Mirafi HP665 filter fabric or equivalent	SY	2,000
36" HDPE drain	LF	30
18" HDPE drain	LF	90
12" HDPE drain	LF	120
36" headwall	EA	1
18" headwall	EA	3
12" headwall	EA	6
Grout	CY	210
Clearing & grubbing	AC	0.8
Erosion & sediment control (e.g. silt fence)	LF	1,800
Interpretive plaques for sandstone wall	EA	10

3.6.2 Estimated Project Costs and Schedule

A cost estimate for the Preferred Alternative has been prepared to an equivalent price level of 1 April 2018 and is summarized below in Table 6.

Table 6 – Estimated Economic Costs for Recommended Plan

Recommended Plan (Alternative Plan A)	
Annual Project Cost based upon ($1,924,000 project cost at 4.0 % for 50 year project life)	$89,563
Annual Operations & Maintenance (O&M) Cost	$5,000
Total Annual Economic Cost	$94,563
Relocation Alternative	
Annual Project Cost based upon ($11,000,000 project cost at 4.0% for 50 year project life)	$512,052
Annual O&M Cost	$0
Total Annual Economic Cost	$512,052

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ECONOMIC JUSTIFICATION FOR SELECTED ALTERNATIVE

The benefits for the project are the lesser of:

1. The least cost relocation alternative; or
2. The value of the infrastructure benefits forgone if no corrective action is taken.

The benefit-cost ratio (BCR) of the protection alternative is based on the comparison of the annual cost of the Relocation Alternative with the annual cost of the Preferred Alternative.

$$BCR = \frac{\text{Annual Economic Cost of Relocation Alternative}}{\text{Annual Economic Cost of Preferred Alternative}}$$

$$BCR = \frac{\$512,052}{\$94,563}$$

BCR = 5.41

The schedule is currently being developed with a target date of executing a Project Partnership Agreement (PPA) in February 2017. The following tables include the Federal and non-Federal apportionment of the estimated total project costs and the key milestones for the project.

Table 7 – Estimated Project Costs and Apportionment

	FY2015	FY2016	FY2017	FY2018
Feasibility Study Costs*				
FED share Non-FED	$ 71,200	$28,800		
Design and Implementation Costs				
Design Analyses, Plans and Specs Construction LERRDs			 $1,912,300 $11,700	
FED share Non-FED share			$1,250,500 $673,500	
Non-FED cash/WIK Non-FED LERRD			$661,800 $11,700	
Total Project Cost			$1,924,000	
FED share Non-FED share	$71,200	$28,800	$1,250,500 $673,500	

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Table 8 – Key Project Milestones

Milestone	Scheduled	Actual
Initiate Feasibility Phase	4/1/2015	4/1/2015
Submit Federal Interest Determination Report	6/26/2015	7/13/2015
MSC Approved FID report	10/9/2015	8/7/2015
Execute Feasibility Cost Share Agreement	N/A	
Submit MDM Draft DPR	6/2/2016	
MSC Approved MDM Draft DPR	8/17/2016	
Submit draft Final DPR	11/2/2016	
MSC Approved Decision Document	1/20/2017	
Project Approval - Initiate D&I phase	2/21/2017	
Fully Executed PPA	2/17/2017	
RE Certification	10/13/2017	
ATR Certified Construction Plans and Specifications	10/13/2017	
Construction Contract Award	1/26/2018	
Construction Complete	8/27/2018	
Project Closeout	11/8/2018	

3.6.3 Non-Federal Sponsor Responsibilities

The Village of Pomeroy, Ohio, the non-Federal sponsor, has expressed continued interest in participating in the proposed project and has acknowledged their responsibilities and as outlined below.

The non-Federal sponsor will perform all necessary steps to complete and execute a PPA for the design and implementation phase of the project. In addition, the non-Federal sponsor will provide the required non-Federal contribution. The Village has been working to secure non-Federal cost share funds from grants and loans. The non-Federal sponsor has also been working to identify potential in-kind service opportunities, such as, providing construction materials.

The non-Federal sponsor has actively participated in the development of alternatives and the selection of the Recommended Plan. Huntington District has actively reached out to the non-Federal sponsor throughout the duration of the feasibility phase, including, providing exhibits of the alternatives considered. In addition, the non-Federal sponsor has met with representatives from Huntington District on several occasions, at the project site, to discuss treatment alternatives.

The non-Federal sponsor has been working with a Real Estate representative from Huntington District regarding their requirements to provide Land, Easements, Rights-Of-Way, Relocation, and Disposal Areas (LERRDs) during implementation. There is approximately 2.67 acres required for the project. Of that total, 1.68 acres of bank protection easement is required across seven landowners in six separate reaches. The non-Federal sponsor owns the remaining 0.99 acres of property required. The estimated costs required to acquire the LERRDs is $11,700, including $4,500 for the easements and $7,200 for administrative costs. There will be an additional $10,000 in administrative costs incurred by the Federal Government for the acquisition of the required LERRDs.

Once the project has been completed, the non-Federal sponsor will accept the project, along with their O&M responsibilities, including, monitoring and performing routine maintenance to maintain its function.

4 ENVIRONMENTAL EFFECTS OF RECOMMENDED PLAN

4.1 CLIMATE

The Recommended Plan 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. The project as has been designed to be robust enough to withstand the projected precipitation increase within its 50 year life expectancy. As a result, the Recommended Plan would likely be beneficial in future climate change conditions by protecting the project area from future erosion caused by increase precipitation, however the action would not be a negative contributing factor to climate change. For the same reasons, there would be impacts expected with respect to climate and increase erosion as a result of the NAA. The National Oceanic and Atmospheric Administration (NOAA), Ohio River Forecast Center was coordinated with and it was determined that the proposed project would not impact climate change.

4.2 SOILS

Previously referenced river bank soils, inclusive of silts, sands, gravels would be protected against flood flow-related erosion as a result of construction of the Recommended Plan. This longitudinal dike and limited stone buttress treatment would allow groundwater and high stage river waters to discharge from the bank and the sandstone block retaining wall, while retaining bank soils and fills. This interruption of flood and internal erosion processes will stabilize the wall and SR 833. Bank soils, subject to erosion upon recession from high water events and subsequent rework and transport in the stream, include recent and relic alluvium and fill, which rely on the relic sandstone block retaining wall, would be retained by the proposed dike system.

The Ohio and other navigable rivers, including the Upper Mississippi and Illinois, have been evaluated by technical staff since 1978 to better define interrelated geotechnical and hydraulic processes, which result in alluvial bank erosion and failure, together with the collapse of retaining walls and embankments. For example, reconnaissance during the period of 1995-1997 resulted in the determination that bank retreat and related endangerment of adjacent public facilities occurred within several reaches of the Mississippi and Ohio Rivers. Bank collapse, similar to what would occur at Pomeroy, Ohio without wall stabilization, could be approximated by block and wedge analysis methods. However, the formation of tension cracks together with cleft pressures and related interconnection to pipe-able fills and wall collapse would limit the use of analysis methods which rely on assumptions of uniform soil characteristics.

As previously noted, the longitudinal dike and buttress include interior filter components, which will preclude internal erosion-related loss of fill at locations where flood flow erosion and related groundwater discharge have resulted in incremental lower wall collapse. Since this collapse sequence is

initiated in the toe of wall area, which will be stabilized by the proposed treatment, additional failures would not occur since the integrity of this structure would therefore continue to be defined by tiebacks, which were constructed at each fifth course of stone.

Under the NAA, soils will continue to scour and be susceptible to flood scour and recession-related piping and internal erosion. Voids between sandstone blocks in the relic wall provide a path for water to infiltrate retained soils. Upon recession from high water events, the river falls more rapidly than these soils can drain, resulting in erosion of fill material through the wall. Continued flood flow scour and internal erosion results in the undermining of the wall and will cause progressive failure and collapse as erosion encompasses wall tieback layers. Without treatment, these flood-related erosion and failure processes would continue and result in retaining wall collapse and breaching of SR 833.

4.2.1 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 project area is located along the right descending bank of the Ohio River and the proposed treatment would occur in previously disturbed areas. After reviewing the project, NRCS determined the Recommended Plan would not impact Prime, Statewide, or Locally Important Farmlands. Based upon the NRCS determination, a Farmland Conversion Impact Rating does not need to be completed and the Recommended Plan would have no impact on Prime or Unique, Statewide, or Locally important farmland (Appendix B).

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

4.3 SURFACE WATERS AND OTHER AQUATIC RESOURCES

4.3.1 Surface Water

The Recommended Plan would reduce local siltation caused by active erosion of the riverbank in the project reach. Temporary impacts of construction and in water work would be minimized by following best management practices. Implementation of the Recommended Plan is expected to have a positive impact on water quality within the proposed project area as it will prevent further erosion of soils into surrounding waterways. Under the NAA, water quality would continue to be impaired due to uncontrolled soil erosion.

Coordination with OEPA's Division of Surface Water was conducted to discuss details of the current proposal and permit applicability. Upon review, OEPA determined a Clean Water Act Section 401 individual water quality certification permit is required. A 401 permit will be obtained prior to construction. A National Pollutant Discharge Elimination System (NPDES) permit is required for construction storm water. A sediment and erosion control plan will be required and implementation of the erosion and sedimentation control plan during construction will occur. A 404(b)1 analysis will be completed prior to the signing of a FONSI to show consideration of both the Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.

4.3.2 Groundwater

The Recommend Plan would allow for continued groundwater seepage from the streambank while preventing further erosion that may be caused by unrestricted groundwater flow. Therefore, the Recommend Plan would have a positive impact on groundwater in the project area.

Under the NAA, groundwater would continue to have potential to contribute to current erosional impacts.

4.3.3 Floodplains

Due to the failing bank and recommended emergency streambank protection project being located completely within the regulatory floodplain, there is not practicable alternative that would take place outside of the floodplain area. The Recommended Plan is designed in a manner that will not result in increased flood heights in the regulatory floodplains within the vicinity of the project area, as well as areas both upstream and downstream. The nature of this project does not result in incompatible use of the regulatory floodplain nor does it directly or indirectly encourage development of the floodplain. Therefore, the recommended plan meets the intent of EO 11988 and will not cause a negative impact to the regulatory floodway. Under the NAA, continued bank erosion would continue and floodway storage would increase with time.

4.3.4 Wetlands

National Wetland Inventory Map indicated no wetlands are located in the project area. A site reconnaissance was conducted and no wetlands are present at the project reach. No impacts to wetland are anticipated as part of the Recommended Plan and NAA.

4.4 WILDLIFE HABITATS

4.4.1 Terrestrial and Aquatic Vegetation

The Recommended Plan would involve removal of existing vegetation for placement of stone treatment. Due to the lack of diverse vegetation and abundance of invasive species, terrestrial impacts of the Recommended Plan would be minor.

The NAA would allow for continued erosion and bank failure. Some small stabilization projects by the Village may occur as funding is available to repair the unstable reaches. These efforts would have similar impacts to the terrestrial resources as the Recommended Plan. Therefore, terrestrial impacts of the NAA would be minor.

Due to lack of aquatic vegetation in the project area, the Recommended Plan and NAA would have no impacts.

4.4.2 Fauna

Current fauna onsite consists of species that are highly mobile and would be able to find alternative habitat adjacent to the project area. With no significant amount of wildlife in the project area, the Recommend Plan and NAA are not anticipated to have any impacts to fauna.

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4.4.3 Existing Terrestrial and Aquatic Habitats

Existing terrestrial habitats would be impacted during construction due to the removal of vegetation. However, impacts to terrestrial habitats would be minimal under the Recommended Plan as the site has a lack of diverse vegetation and an abundance of invasive species. The NAA would allow for continued erosion and bank failure. Limited emergency wall stabilization actions would continue to be required to preclude breaching of SR. These efforts would have similar impacts to the terrestrial resources as the Recommended Plan. Therefore, terrestrial habitat impacts of the NAA would be minor. Wall failure is expected to continue within the project reach, further degrading terrestrial habitats within the project area.

For the Recommended Plan, aquatic habitats would be impacted during construction due to excavation and placement of stone. An elevation in suspended sediments during construction would be expected, but would subside following the completion of construction. Therefore, the negative impacts to aquatic resources for the Recommended Plan would be limited to the construction period and would be temporary in nature. Under the NAA, limited emergency wall stabilization actions would be required to preclude breaching of SR 833 by the Village may occur as funding is available to repair the unstable reaches. These efforts would have similar impacts to the aquatic resources as the Recommended Plan, but would occur intermittently and for a shorter duration. Bank failure and retreat is expected to continue within the project reach, further degrading aquatic habitats within the project area.

4.5 ENDANGERED AND THREATENED SPECIES

4.5.1 Federal

There are six Federally listed endangered species that could reside within the project area – the Fanshell (*Cyprogenia stegaria*), Rabbitsfoot (*Quadrula c. cylindrica*), Sheepnose (*Plethobasus cyphyus*), and the Snuffbox (*Epioblasma triquetra*) mussels and the Indiana bat (*Myotis sodalis*) and Northern long-eared bat (*Myotis septentrionalis*). With the potential to impact Federally listed mussels, USACE will be conducting a mussel survey within the project limits to determine the presence or possible absence of these mussel species in the vicinity of the project area. The mussel survey will require additional coordination with USFWS and the project may incur additional costs based on what type of mussel species are identified during the Phase I survey required and which may trigger a more in depth Phase 2 survey and/or relocation effort. Both the Phase 2 survey and relocation effort would add significant cost to the mussel survey and would impact the cost of the project in the feasibility phase of the project. A Phase 1 mussel survey will be completed in the 2016 mussel survey season which starts May 1, 2016 through September 30, 2016. Any Phase 2 and relocation efforts will need to be re-coordinated with USFWS for ways to proceed. If a Phase 2 or relocation are triggered then additional funding for those efforts would need to be acquired.

Due to the location and size of the project, it is not anticipated that endangered mussels will be found in this location. A mussel survey completed directly downstream of the project found no mussels residing in the area. However, USACE is aware of the risks that are involved with finding endangered mussels in the project. A find could both affect the schedule and cost of the project. USACE is willing to take on the risks associated with the mussel survey and potential positive findings for endangered mussels. The

Recommended Plan may affect the mussel species, but is not likely to adversely affect the Indiana bat and northern long-eared bat. The NAA would result in impacts to mussel or bat species if the wall was left destabilized and was allowed to collapse into the river covering up potential mussel beds and the loss of potential bat roost trees.

4.5.2 State

The ODNR Division of Wildlife has indicated that 24 state listed state species could be located within the project area. Some species overlap with the Federally listed species. Coordination with ODNR and an account of state listed species in the project area can be found in Appendix B. No impacts beyond what was described in Section 4.5.1 is expected from the Recommended Plan or NAA are anticipated to these species.

4.5.3 Critical Habitat

According to the USFWS database, there is no critical habitat within the project area. Therefore, there will be no impacts to critical habitat under the Recommended Plan and NAA.

4.6 RECREATIONAL, SCENIC, AND AESTHETIC RESOURCES

Recreational fishing and boating may be temporarily directly impacted under the Recommended Plan. The public access boat ramp will be utilized during construction by the project to access the work barges; however the ramp will remain open to the public. Construction equipment and noise at the site may pose a temporary minor nuisance to some recreational activities including but not limited to: boating, festivals, and fishing. Recreational impacts would be minor and short-term. The Recommended Plan has no anticipated long-term significant impacts to recreational resources. The NAA would have potential significant negative impacts to recreation as the failure of the wall would lead to restricted riverbank access.

Under the Recommended Plan, vegetation along the channelward toe of the wall within reaches of proposed treatment would be removed. The appearance of the longitudinal stone dike would introduce an unnatural-appearing structure. Although the stone will initially contrast in color with the natural surroundings, it will darken over time. Similar stone dikes are visible along the shorelines of the Ohio River. The dikes would be visible from the adjacent bank. Under the NAA, viewers would have little, if any, change in aesthetics until wall failure results in the breaching of SR 833. Both the Recommended Plan and NAA introduce visual changes to the project area bank line. Compared to the NAA, the Recommended Plan would stabilize the retaining wall. Furthermore, SR 833 and adjacent utilities would remain intact.

4.7 CULTURAL RESOURCES

In accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and it's implementing language 36 CFR 800, the effects the proposed project would have on historic properties were taken into account. Archaeological Resource Protection Act (ARPA) of 1979 (PL 96-97), enhanced the permitting requirements stated in the Antiquities Act of 1906 and establishes that archeological resources on public lands are part of the Nation's heritage and should be preserved for the benefit of the American people. Unauthorized excavation, removal, damage, or alteration of any

archeological resource on public lands is prohibited. The purpose and intent of the Native American Graves Protection and Repatriation Act (NAGPRA) (PL 101-601) is to acknowledge the ownership of certain human remains, funerary objects, and sacred artifacts by Native American tribes. This Act's implementing regulations are found in 43 CFR Part 10 and requires federal agencies and museums receiving federal fund to inventory collections of human remains and associated funerary objects.

Previous investigations have identified no archeological sites within the footprint of the proposed streambank protection project. Currently there is a sandstone retaining wall within the Area of Potential Effect, which is older than 50 years of age. The current treatment is designed to abut the sandstone wall while leaving the wall intact behind the new treatments. Due to the step grade of the streambank, the wall can only be fully viewed either from the Ohio River via vessel or from the opposing streambank in Mason County, West Virginia. The wall will not be removed or excavated from its current position.

In accordance with 800.14(b)(1)(ii), the USACE has prepared a draft Programmatic Agreement, to address potential effects that cannot be fully determined prior to approval of the undertaking. The Draft Programmatic Agreement is currently being reviewed by the agencies and consulting party. Compliance with the procedures established in an approved Programmatic Agreement satisfies the agency's section 106 responsibilities. Also pursuant to NEPA and Section 106 of the NHPA, all federally recognized tribes with historic and/or cultural affiliation within the project boundaries will be contacted, provided an opportunity to comment, and invited to consult on the project. Tribes will receive a copy of this report and EA for review and comment during the public comment period.

4.8 AIR QUALITY

Construction activities of the Recommended Plan would have the potential to cause localized temporary, nuisance air quality impacts which includes particulate emissions. Emission sources include diesel exhaust and fuel odors associated with operation of heavy equipment, engine emissions associated with construction and construction activities.

All construction would be performed in compliance with applicable control requirements established by OEPA's Division of Air Pollution. The construction period is expected to be brief and impacts would not exceed the minimum levels of direct emissions of a criteria pollutant. Under the NAA, further erosion of the riverbank and endangerment of SR 833 and adjacent utilities would eventually require repairs or relocation, leading to similar temporary elevations in emissions from construction equipment.

4.9 NOISE

There would be a temporary increase in noise levels associated with increased traffic and machinery use during project construction. Equipment to be used during project construction, including, but not limited to excavators, barges, and cranes would contribute to ambient noise in the area. However, construction would be limited to daytime hours and would likely be unnoticeable in the project vicinity due to ambient noise from traffic on SR 833 and neighboring commercial businesses. Therefore, impacts for the Recommended Plan are considered insignificant. Under the NAA, traffic noise and neighboring commercial businesses would continue to be the predominate forms of noise pollution.

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4.10 HAZARDOUS AND TOXIC SUBSTANCES

Based on the investigative findings and the planned activities for this project, the following recommendations are presented.

The construction contract needs to include language informing the contractor of the potential for encountering questionable fill materials and of the need for diligent observation within the limits of excavation. In particular, excavations may encounter materials or waste listed below or other uncontrolled fill materials that are deleterious to the environment. No specific contamination or point source within the limits of excavation was noted, but local or nearby activities may have affected the quality of fill at the river bank. If the contractor encounters any such contaminant, they shall cease work at that spot, sample the material in question, and await analytical results to determine whether remediation is required prior to continuing construction. Any investigation of potential contamination needs to be performed by persons experienced and trained in HTRW who possess a 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. Construction workers and safety personnel need to be made aware of the following site-specific issues:

•The streambank may contain fill materials consisting of: iron/steel slag, coal residue, and railroad ties from current/former coal mining; iron/steel industry; former saltworks and its related former chemical plant in the area.

• AMD existing within the project area. One seepage location was observed in the eastern portion of the project area, in the vicinity of 828 East Main Street. Additional impacts to surface water from the AMD due to construction activities shall be avoided during the project.

• Petroleum (gasoline, diesel, etc.) LUST sites in the area may have potentially impacted subsurface soil, groundwater, and/or surface water in the area. The offsite impacts to several LUST sites are not known. If there is evidence of petroleum contamination during construction, then construction shall be halted for additional investigation.

• One CSO outfall is located within the project area. The safety plan needs to address the area of the outfall and potential risk to workers from any potential discharge of untreated wastewater that may have occurred or will occur. If impacts from the CSO are detected during construction, further investigation will be necessary.

• No sampling of surface water or soil is recommended at this time.

No further HTRW concerns were noted. Since the proposed project includes limited excavation of recently deposed alluvium within areas at the toe of, and up to 30' channelward from, the relic wall, adjacent LUST, CSO, AMD, and other HTRW-related concerns should not be affected during construction or subsequent maintenance. Adjacent industries have been inactive for more than 60 years. These buildings are presently utilized as warehouses for the storage of construction supplies. It is probable that underground storage tanks were backfilled with sand when these facilities were abandoned.

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4.11 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

The Recommended Plan does not unfairly affect any segment of the population. Implementation of the Recommended Plan would aid in protection of the public infrastructure, thereby improving the living environment for all residents and providing a benefit to the area as the erosion and possible road failure would lead to undue hardship as much on the population in the area is low income. No homes or buildings would be adversely impacted by the proposed project; therefore, the Recommended Plan meets the directive of EO 12898 by avoiding any disproportionately high adverse human health or environmental effects on minority or low income populations. In addition, the project is in compliance with EO 13045 "Protection of Children from Environmental Health Risks and Safety Risks," as there are no health or safety concerns affecting children.

4.12 TRANSPORTATION AND TRAFFIC

Construction of the Recommended Plan would occur by river barge outside of the navigational channel. Stone would be transported via barge to the site and tied to the working barge. Therefore, there would be no impacts to transportation and traffic during the construction of the project.

Under the NAA, impacts to transportation and traffic would be significant if SR 833 failed due to wall collapse. Wall failure could lead to the closure of SR 833, which is the only thoroughfare through the Village. The closure could render parts of the Village inaccessible.

4.13 HEALTH AND SAFETY

The Recommended Plan will increase safety at the site by stabilizing the wall to protect the SR 833 and adjacent infrastructure. Stabilizing the wall will minimize impacts to water quality and aquatic resources by reducing the amount of sediment discharge into the Ohio River. The longitudinal dikes should not cause a safety concern to navigation because the dikes do not extend into the navigation channel. The project would provide safety effect to the Village by preventing further wall failure, closure of SR 833, and disruption of adjacent utilities. Therefore, the Recommended Plan is anticipated to have long term beneficial impacts on health and safety of the project area.

Under the NAA, discharge of wall failure and fill rework and transport would result in significant adverse effects to water quality and aquatic resources in the Ohio River. Collapse of the wall could also lead to the closure of SR 833 and the disruption of adjacent utilities. Closure of SR 833 could lead to significant effects to residents and businesses located along the road both in regards as an immediate hazard condition and the probability that first responders could no longer access the failure sites or adjacent properties.

4.14 CUMULATIVE EFFECTS

USACE must consider the cumulative effects of the proposed project on the environment as stipulated in the National Environmental Policy Act (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. Construction of the Recommended Plan would have very localized effects confined to the area immediately in the vicinity of the project, confined to the reach of the Ohio River adjacent to the Village. The geographical extent would be broadened to consider effects beyond the Recommended Plan. The geographical extent considered is Ohio River Watershed. Project life of longitudinal dike projects are considered to be 50 years, therefore, that is the future temporal boundary of this analysis. The boundary for the past would coincide with the construction of the R.C. Byrd Locks and Dam in 1937 when the pool elevation was permanently modified. However, the established operation for navigation locks and dams requires that gate adjustments are continued during high flow events such that naturally occurring open river conditions are effected, without modification, including floods with an occurrence interval of once in 100 years. The retention of flows to maintain commercial navigation has been modified, as requested by the Ohio River Basin Commission, to include the seasonal retention of pools and releases of flows to enhance downstream dissolved oxygen levels.

The Ohio River Watershed is listed as impaired under Section 303(d) due to elevated PCB levels, iron, and bacteria. Some of the suspected leading causes of impaired water are mining and storm water discharge. In the past, the Ohio River Foundation has promoted education and environmental stewardship in the region. The Ohio River Foundation has taken an active role in advocating more stringent water quality regulations. Meigs Soil and Water Conservation District is actively working in the watershed to provide assistance for the conservation of natural resources for present and future generations. In the future, watershed programs may address water quality and other maintenance activities. Impairment of the Ohio River Watershed is expected to continue. Water quality standards and regulations are expected to remain as stringent today as in the future.

In addition, a draft report regarding extensive cumulative effects analysis (CEA) was completed for the Ohio River Mainstem System Study (ORMSS) in 2006. During that analysis, ten resources were thoroughly examined and an exhaustive list of reasonably foreseeable future actions (RFFAs) were developed. The RFFAs were grouped by Navigation Investment Actions, Other Corps Actions, “But For” Action (actions that would not occur but for the navigation system), Actions by Others, Natural Climatic Events, and Regulatory Environment. Based on this assessment, the proposed project will have no

significant impact on any resources within the geographic and temporal boundaries established for this CEA.

Section 4.0 documents the potential environmental effects of the Recommended Plan and NAA with respect to existing conditions. The effects of the Recommended Plan, as discussed beforehand, are localized and minor. Past actions have resulted in similar effects that have included streambank stabilization projects along the Ohio River. The ORMSS CEA did identify two resources that are marginally sustainable along the river: riparian resources and mussels. The Recommend Plan is not expected to have significant impacts on mussels. Impacts on riparian resources would be sustained from implementation of the Recommended Plan. These impacts would be minor as the project area is comprised mainly of invasive species. No reasonably foreseeable future actions that would have similar impacts as the proposed action were identified.

The availability of Federal funds through programs, such as the Section 14 program, provides assistance to communities to protect public services through study, design and construction of streambank and shoreline projects. The significance of this action on safety, aquatic resources, and water quality would be positive in the long term. Given the current program is in place for the foreseeable future and the overall beneficial effect from implementation of the Recommended Plan, there is expected to be a positive, though small, cumulative effect on safety, aquatic resources, and water quality based on past, present, and reasonably foreseeable actions.

5 MITIGATION OF ADVERSE EFFECTS

The Recommended Plan is expected to have no adverse effects to terrestrial resources and the human environment. However, potential impacts to mussels, an aquatic resource, and cultural resources may occur. A mussel survey will be conducted in the 2016 mussel survey season to evaluate mussel species in the area. Results of the survey assist USACE in completing an effect determination to mussel species along with any necessary mitigation measures. USACE is currently coordinating with the Ohio SHPO to determine potential effects to resources onsite. Prior to execution of a Findings of No Significant Impacts (FONSI), impacts and required mitigation for these resources will be determined.

6 IMPLEMENTATION REQUIREMENTS

6.1 PROJECT PARTNERSHIP AGREEMENT

The first $100,000 of the feasibility phase for a Section 14 project is funded at full Federal expense and the balance is cost shared 50-50 with a non-Federal sponsor. Given the feasibility phase for the CAP Section 14 project for the Village of Pomeroy is expected to be completed within the $100,000 limit, a Federal Cost Share Agreement (FCSA) will not be executed at this time.

The Village provided a Letter of Intent in July 2014 requesting Federal assistance under the Section 14 authority. Prior to submittal of the Federal Interest Determination Report, the Non-Federal Sponsor submitted a new Letter of Intent reaffirming interest in the project. Both Letters of Intent are included in

Appendix H. The Huntington District is scheduled to start development of the Project Partnership Agreement (PPA) in September 2016 following approval of the Detailed Project Report. The PPA is currently scheduled to be executed in February 2017. Following the execution of the PPA, all efforts related to design and implementation will be cost shared 65 percent Federal and 35 percent non-Federal.

6.2 LANDS, EASEMENTS, RIGHTS-OF-WAY, RELOCATIONS AND DISPOSAL AREAS

The land required for the project is approximately 2.67 acres. Of that total, 1.68 acres of streambank protection easement is needed across seven landowners in six separate areas. The Village owns five parcels in fee along the project area for total of approximately 0.99 acre. Significant construction activities will take place from the riverward side, so no temporary access easements will be required. No relocations, laydown areas, or disposal sites are anticipated for this action. See Appendix E for the Real Estate Plan.

6.3 MONITORING AND ADAPTIVE MANAGEMENT

Not Applicable for Section 14 projects.

6.4 OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, AND REHABILITATION

Local sponsor operation and maintenance responsibilities required to assure the continued functionality of the recommended treatment will include inspecting the project annually and after high water events and correcting adverse conditions such as loss of as-constructed stone geometries and repairing areas which have been vandalized. All operation and maintenance responsibilities will be given to the non-Federal sponsor in perpetuity after completion of construction.

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6.5 REGULATORY REQUIREMENTS

The Recommended Plan is in full compliance with all local, state, and Federal statutes as well as Executive Orders. Compliance is documented below in Table 9.

Table 9 – Environmental Compliance Status

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	
Individual 401 Water Quality Certification**		X	
404 b(1) Analysis**		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		
Quite 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 from Environmental Health Risks and Safety Risks	X		

*Completed coordination and affect determination will be completed prior to execution of FONSI.

**Completed coordination and all necessary permits will be obtained prior to construction.

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7 PUBLIC INVOLVEMENT

7.1 PUBLIC VIEWS AND COMMENTS

This section will be completed following the public review period.

7.2 STAKEHOLDER AGENCY COORDINATION

7.2.1 Federal Agencies

Coordination with Federal resource agencies was conducted in conjunction with the preparation of the Section 14 Emergency Streambank Protection, Draft DPR and EA, Village of Pomeroy, Meigs County, Ohio. All correspondence letters can be found in the Appendix B. The USFWS, NOAA – Ohio River Forecast Center, and United States Department of Agriculture (USDA) were asked to review the project for potential resource impacts.

Also pursuant to NEPA and Section 106 of the NHPA, all federally recognized tribes with historic and/or cultural affiliation within the project boundaries will be contacted, provided an opportunity to comment, and invited to consult on the project. Tribes will receive a copy of this report and EA for review and comment during the public comment period.

7.2.2 State Agencies

Coordination with State resource agencies was conducted in conjunction with the preparation of the Section 14 Emergency Streambank Protection, Draft DPR and EA, Village of Pomeroy, Meigs County, Ohio. All correspondence letters can be found in the Appendix B. ODNR and OEPA were asked to review the project for potential resource impacts. OEPA made the recommendation to apply for an Individual 401 Water Quality Certification permit. USACE also coordinated with the Ohio SHPO to address any concerns or recommendations regarding impacts to historic properties. This coordination effort will continue through the feasibility study.

7.2.3 Local Agencies

Coordination with Local resource agencies was conducted in conjunction with the preparation of the Section 14 Emergency Streambank Protection Draft DPR and EA, Village of Pomeroy, Meigs County, Ohio. All correspondence letters can be found in the Appendix B. The local floodplain coordinator was asked to review the project for potential resource impacts.

7.2.4 Non-Governmental Organizations

Not Applicable

8 FINDING OF NO SIGNIFICANT IMPACT

The draft FONSI will be updated to reflect all continued agency coordination and public comments that are drawn. The draft FONSI can be found in Appendix B.

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9 RECOMMENDATION

USACE Huntington District recommends MSC concurrence with the Recommended Plan. Requirements for the construction of Alternative Plan A (Recommended Plan) would include clearing and grubbing of vegetation, clearing rubble, excavation, and installation of a discontinuous longitudinal dike.. Alternative Plan A is the Least Cost Alternative Plan to protect the streambank.

This Section 14 project will protect approximately 3,300 LF of wall adjacent to SR 833 and the Village of Pomeroy. Work under the Section 14 authority allows for protection of public facilities from flood flow erosion related immediate endangerment (i.e. SR 833 and Village infrastructure). The Section 14 authority for streambank protection projects has a Federal funding limit of $5,000,000. The cost of the proposed project is within the Federal funding limit. Therefore, the size, cost, scope, and complexity of the project can be successfully addressed through the Section 14 authority.

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