FINDING OF NO SIGNIFICANT IMPACT

Blakes Creek-Armour Creek Supplemental Watershed Plan-Environmental Assessment for the Rehabilitation of Dam No. 7 (known locally as Ridenour Lake Dam)
Blakes Creek-Armour Creek Watershed
Kanawha County, West Virginia

Introduction

The Blakes Creek-Armour Creek Watershed project is a federally assisted action authorized for planning under Public Law 106-472, the Small Watershed Rehabilitation Act, which amends Public Law 83–566, the Watershed Protection and Flood Prevention Act. This act authorizes the Natural Resources Conservation Service (NRCS) to provide technical and financial assistance to local project sponsors. The local sponsor of the Blakes Creek-Armour Creek Project is the City of Nitro.

A Plan - Environmental Assessment (Plan-EA) was undertaken in conjunction with the development of the supplemental watershed plan. This assessment was conducted in consultation with local, State, and Tribal governments; Federal agencies; and interested organizations and individuals. The Plan-EA and supporting data developed during the assessment are available for public review at the following location:

USDA, Natural Resources Conservation Service
1550 Earl L. Core Road, Suite 200
Morgantown, WV 26505
304-284-7540

Recommended Action

Proposed is the rehabilitation of a floodwater retarding structure that will sustain continuity of downstream flood damage reduction for Dam No. 7 (Ridenour Lake Dam) in a safe manner while minimizing environmental, economic, cultural, and social impacts for an additional 100 years.

The Preferred Alternative involves re-grading and leveling the dam crest to EL 648 ft and constructing a 140-ft wide roller compacted concrete chute auxiliary spillway (ASW). The ASW will have robust concrete sidewalls to reduce the potential of a landslide blocking the ASW. A new principal spillway riser will be constructed, the upstream dam slope will be flattened with rock riprap, the downstream slope will be flattened with earth and soil-cement mixed shear panels will be installed at the downstream embankment toe to enhance ground stability and meet regulatory stability requirements. Additional improvements include a new filter diaphragm, a new impact basin, a new toe drain, and removal of the sanitary sewer line from the ASW.

Effects of Recommended Action

The Plan-EA evaluated both the beneficial and adverse impacts of the proposed action, which is the rehabilitation of Dam No. 7 to meet current applicable design, performance, and dam safety criteria. The analysis indicates the proposed action will result in generally beneficial long-term impacts for human uses and most environmental resources. The preferred alternative will allow the Sponsors to comply with applicable dam safety and performance standards, to reduce the potential for loss of life, and to continue protection of existing property and infrastructure downstream of the dam. It will also maintain recreation availability and usage stemming from Lake Ridenour. The preferred alternative maximizes public benefits. For economics, average annual monetary benefits are estimated to be $672,000 which includes $121,200 flood damage reduction benefits and $550,800 in recreation benefits. Average annual cost is estimated at $556,460 resulting in net benefits of $115,540. The Probable Maximum Precipitation (PMP) storm event will be detained without embankment overtopping, thus reducing the threat of a catastrophic dam failure (breach), and recreation after completion of the construction will continue. Environmentally adverse impacts will be minimized during construction. Long term there would be adverse, although negligible, environmental impacts.

Number of direct beneficiaries (Onsite – Offsite):

Population at Risk of dam breach = 1,038

Recreation usage = 51,000 annual visitation

Other beneficial effect after construction:

- Reduces the threat of loss of life for 1,038 people identified as Population at Risk.
- Reduction in the threat of loss of access to emergency services for downstream properties and property owners in the event of a flood. For a 100-year storm event, the dam eliminates damages to 30 structures and reduces damages to 27 additional structures. The dam attenuates floods with a recurrence interval up to and including 500 years; i.e., the ASW does not flow during the 500-yr event.
- Eliminates flooding on 0.55 miles of roadway and reduces flood damages to 0.34 miles of roadways, during a 100-year event.
- Maintains recreation benefits to over 51,000 residents and non-residents annually.
- Eliminates the liability associated with continuing to operate a dam that does not meet current West Virginia and NRCS safety and performance standards.
- Leverages federal resources to install the planned works of improvement.
- Will meet West Virginia and NRCS safety and performance standards for a High Hazard potential dam.

Unavoidable adverse effects would result from implementation of the preferred alternative. These effects are anticipated to be short-term and minor overall, and the majority of long-term effects are anticipated to be negligible. Most of the adverse impacts identified in this assessment can be mitigated with the use of BMPs during the construction process. BMPs will be identified during the design of this project and consultation with regulators during the permitting process.

The proposed dam rehabilitation is anticipated to result in the following environmental effects:

- Soils: Short-term, direct, minor, adverse; long-term, direct, negligible, adverse
- Waters of the U.S.: Short-term, direct, minor, adverse; long-term, direct, minor, adverse
- Water Quality: Short-term, direct, negligible, adverse; long-term, direct, negligible, beneficial
- Water Quantity: Short-term, direct, minor, adverse; long-term, direct, negligible, adverse
- Wetlands: Short-term, direct, minor, adverse; long-term, direct, minor, adverse
- Floodplain Management: Short-term, direct, negligible, adverse; no long-term effects
- Climate: No effect
- Air Quality: Short-term, direct, negligible, adverse; no long-term effects
- Plants: Dominant Vegetation Communities: Short-term, direct, minor, adverse; long-term, direct, minor, adverse; Endangered or Threatened plants: No effect; Invasive plants: No effect
- Riparian Areas: Short-term, direct, minor, adverse; long-term, direct, minor, adverse
- Animals: Fish: Short-term, direct, moderate, adverse; long-term, direct, negligible, adverse
- Wildlife: Short-term, direct, minor, adverse; long-term, direct, negligible, adverse; Threatened and Endangered: No effect; Migratory birds: Short-term, direct, negligible, adverse; no long-term effects
- Human: Cultural & Historic Properties: No effect; Recreation: Short-term, direct, moderate, adverse; long-term, direct, minor, adverse; Scenic Beauty: Short-term, direct, moderate, adverse; long-term, direct, minor, adverse
- Ecosystem Services: Regulating: No effect; Supporting: Short-term, direct, negligible, adverse; long-term, direct, negligible, adverse; Cultural: Short-term, direct, moderate, adverse; long-term, direct, negligible, adverse

NRCS conducted Section 106 consultation and considered the effects this project may have on historic properties and cultural resources.

The recommended action is not anticipated to have adverse long-term effects on ecosystem services or other environmental resources.

The effects of the recommended action are not considered highly uncertain nor involve unique or unknown risks.

Implementing the proposed alternative will not establish a precedent for future actions with significant effects, nor does it represent a decision in principle about future considerations.

The proposed action will not violate Federal, State, or local law requirements imposed for protection of the environment. Consultations required by the Magnuson-Stevens Fishery Conservation and Management Act, Endangered Species Act, National Historic Preservation Act,

and Marine Mammal Protection Act have been completed. The recommended action is consistent with the requirements of these laws.

The local sponsors will obtain any needed permits before they begin implementation of the project. Clean Water Act Sections 404 and 401consultation and permitting will be completed during the design phase.

The recommended action will not result in significant adverse cumulative impacts. The cumulative effects of this project are very positive for protection of downstream loss of life and property. The planned action is the most practical, complete, and acceptable means of protecting life and property of downstream residents. The proposed action will not result in significant adverse effects on public health, safety, or the human environment.

Alternatives

The following alternatives were considered in the development of this plan:

No Action/Future Without Federal Interest (FWOFI)
The FWOFI alternative describes the action that the Sponsors will take if no federal funds are provided for implementation. It describes what is most likely to happen in the absence of any developed federal alternative or changes in law or public policy. The Sponsors would be responsible for the total cost of rehabilitation to WV dam safety and performance standards or removal of the dam.

Decommissioning of Dam
The Decommissioning Alternative includes federally-assisted removal of the entire dam and stabilizing the site. This option describes an alternative which requires removing the flood detention capacity of the dam by cutting a notch in the existing embankment and re-connecting and restoring the stream channel and 100-year floodplain upstream and downstream of the dam in a non-erosive manner. If the dam were removed, 272 residences, 10 apartment buildings, 14 commercial structures, and 1 public property in the breach zone would no longer be at risk from flooding caused by a breach of the dam. However, federal policy requires that this alternative address the purpose and need for flood protection. With this alternative 79 single family residences, 7 multi-family structures, and 5 commercial structures, 91 structures in total, would be subjected to increases in flooding from all flood events that are attenuated by the dam. Furthermore, the City of Nitro specifically requested that the structure remain in place due to its recreational value.

Decommissioning would not meet the project purpose and need for the proposed action. Due to the high cost of this alternative, and the possibility of having to mitigate the loss of one of the City's major recreation facilities, this alternative was not studied in detail and was eliminated from detailed study.

Nonstructural Alternatives (elevation, relocation, zoning, etc.)
This alternative involves elevating, floodproofing, or relocating at-risk structures (structures within the dam breach inundation area), and modification or relocation of roadways and stream crossings within the breach inundation area. This would reduce the hazard classification of the dam and eliminate the loss of life potential and, therefore, lower the requirements for dam rehabilitation to meet State and Federal dam safety and performance standards. There are 298 at-

risk buildings to elevate, floodproof and/or relocate downstream of the dam, and 4 roadways/stream crossings would need to be elevated/modified. In addition, additional flood protection may be needed at the Fike Chemical Plant EPA Superfund site. The estimated cost of this alternative was estimated at $30 to $40 million dollars. The estimated cost only reflects cost to floodproof and/or relocate affected properties. It does not include costs to purchase deed restrictions and modify stream crossings/roadways. Because of the high costs of relocating or floodproofing structures, this alternative was eliminated from detailed study.

Structural Rehabilitation to Current Criteria (Three Alternatives Were Evaluated in Detail)

1. Alternative No. 1 (Preferred/Recommended Alternative) involves re-grading and leveling the dam crest to EL 648 ft and constructing a 140-ft wide roller compacted concrete chute ASW. A stilling basin and rock riprap at the outlet of the ASW will stabilize flows down to Blakes Creek. The ASW will be re-aligned to move it further away from the existing hillside and will prevent high flows from undermining and breaching the spillway crest due to headcut erosion. The ASW will have robust concrete sidewalls to reduce the potential of a landslide blockage. A new principal spillway riser will be constructed after removing all or part of the existing riser and extending the 30-inch diameter steel cylinder concrete lined pressure pipe principal spillway conduit. The upstream dam slope will be flattened with rock riprap to enhance slope stability. The downstream slope will be flattened with earth fill to enhance slope stability and soil-cement mixed shear panels will be installed at the downstream embankment toe to enhance ground stability. Additional improvements include a new filter diaphragm, a new impact basin, a new toe drain, and removal of the sanitary sewer line from the ASW.
2. Alternative No. 2 involves re-grading and leveling the dam crest to EL 648 ft and constructing a 120-ft wide articulated concrete block ASW with a secant pile cutoff wall to valley floor. The ASW will be located in the existing ASW location. A new principal spillway riser will be constructed after removing the existing riser and extending the 30-inch diameter steel cylinder concrete lined pressure pipe principal spillway conduit. The upstream dam slope will be flattened with rock riprap to enhance slope stability. The downstream slope will be flattened with earth fill to enhance slope stability and soil-cement mixed shear panels will be installed at the downstream embankment toe to enhance ground stability. Additional improvements include a new filter diaphragm, a new impact basin, a new toe drain, and removal of the sanitary sewer line from the ASW.
3. Alternative No. 3 involves re-grading and leveling the dam crest to EL 648 ft and constructing a 140-ft wide roller compacted concrete chute ASW located over the existing embankment left of the principal spillway. A vehicle bridge (HL-93 loading) with a pedestrian lane will be installed over the ASW to provide access to the recreational area. A new principal spillway riser will be constructed after removing the existing riser and extending the 30-inch diameter steel cylinder concrete lined pressure pipe principal spillway conduit. The upstream dam slope will be flattened with rock riprap to enhance slope stability. The downstream slope will be flattened with earth fill to enhance slope stability and soil-cement mixed shear panels will be installed at the downstream embankment toe to enhance ground stability. The existing ASW will be filled in with the excess excavated soils from the construction of the ASW. Additional improvements include a new filter diaphragm, a new impact basin, a new toe drain, and removal of the sanitary sewer line from the ASW.

Structural Rehabilitation Alternative No. 1 is the most practical means that will sustain continuity of flood damage reduction for the subject watershed in a safe manner while minimizing environmental, economic, cultural, and social impacts.

Consultation—Public Participation

Due to COVID-19 risks and restrictions for public gatherings, two virtual Public Scoping Meetings were held on December 17, 2020 (one in the morning and one in the evening). During the meetings, the participants identified issues of economic, environmental, cultural, and social concerns in the watershed. Input was provided at the meeting or through letters and emails to NRCS. There were 30 people in attendance at the morning session and 13 people at the evening session. Agencies and organizations attending or providing input include the City of Nitro, Kanawha County, WV DEP Dam Safety Agency, US Army Corps of Engineers, WV Conservation Agency, U.S. Senator Joe Manchin's office, EA Engineering, Science and Technology, Schnabel Engineering, Aterra Solutions, Headwaters Corporation, NRCS, and some landowners and anonymous callers. The meeting recording and PowerPoint Presentation were saved to the City's website for reference and viewing by the general public at large.

The Sponsors and NRCS held an onsite public meeting on May 17, 2022 to discuss the proposed rehabilitation alternatives for the Blakes Creek–Armour Creek Watershed Site 7. The meeting was held in the Nitro City Council Chambers located at 497 1st Avenue, in Nitro. The meeting was also available virtually using Microsoft Teams. Representatives from the Local Sponsors and NRCS, along with their consultants, provided information on the planning activities to date, described the various rehabilitation alternatives being considered for this multipurpose flood control and recreation structure, presented the recommended alternative, answered questions and concerns about the planned activities, and sought public input. Meeting participants provided input on their issues and concerns to the planning team. Agencies and organizations participating or providing input include the City of Nitro, Aterra Solutions, Schnabel Engineering, EA Engineering, Science and Technology, Inc., Headwaters Corporation, and NRCS. The meeting recording and PowerPoint Presentation were saved to the City's website for reference and viewing by the general public at large.

On August 12, 2024, a public/agency meeting was held in the City of Nitro to review the Draft Plan-EA. Questions were fielded by Aterra Solutions personnel.

Public meetings were held throughout the planning process to keep all interested parties informed of the study progress and to obtain public input to the plan and environmental evaluation. The Draft Plan-EA was made available to all participating and interested agencies, tribes, groups, and individuals for review and comment from August 12 – September 12, 2024. No comments were received on the draft plan and a Final Plan-EA was developed.

Official agency and tribal consultations were conducted by NRCS with18 entities. The West Virginia State Historic Preservation Officer (SHPO), Catawba Indian Nation, Cayuga Nation, Chickahominy Indian Tribe, Delaware Nation, Eastern Chickahominy, Eastern Shawnee Tribe of Oklahoma, Eastern Band of Cherokee Indians, Monacan Nation, Pamunkey Indian Tribe, Rappahannock Tribe, Saint Regis Mohawk Tribe, Seneca-Cayuga Nation, Shawnee Tribe, Tonawanda Band of Seneca, Tuscarora Band of Seneca, United Keetoowah Band of Cherokee Indians and the Upper Mattaponi Indian Tribe were contacted seeking their review and comment.

SHPO expressed their satisfaction with the undertaking and that no further consultation would be necessary. The Catawba Indian Nation and Shawnee Tribe requested further consultation *only* if artifacts or human skeletal remains were discovered. All other sovereign Native American governments did not respond to NRCS' request for consultation. No specific concerns regarding the "no effect" determination made by NRCS were raised by any of these parties.

Agency and tribal consultations and public participation to date have shown no unresolved conflicts with the implementation of the Plan-EA.

Conclusion

The Plan-EA summarized above indicates that this Federal action will not cause significant adverse local, regional, or national impacts to the human environment. Therefore, based on the above findings, I have determined that an environmental impact statement for the Blakes Creek-Armour Creek Supplemental Watershed Plan is not required.

JON BOURDON Digitally signed by JON BOURDON
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JON BOURDON, State Conservationist

Date