MEMORANDUM

Project 22137

TO: **David Sweeney, P.E. - Natural Resources Conservation Service**

FROM: **Robert Huzjak, P.E. - RJH Consultants, Inc.**

DATE: **June 10, 2024**

RE: **Bonds Creek Site 1 Dam Rehabilitation Planning – Second Public Meeting Notes**

This memorandum presents a summary of items discussed during the Second Public Meeting: Alternatives held on June 6, 2024. The Second Public Meeting: Alternatives is a requirement of the Supplemental Watershed Plan and Environmental Document for the Bonds Creek Site 1 Dam Rehabilitation Planning (Project). The meeting was hosted by the Natural Resources Conservation Service (NRCS) and was supported by the Sponsoring Local Organizations (Sponsors – including City of Pennsboro, Little Kanawha Conservation District, and West Virginia Conservation Agency), RJH Consultants, Inc. (RJH), and WSP Global, Inc. (WSP).

The meeting began at 6:30 p.m. and was held in-person at Pennsboro City Hall (422 Main Street, Pennsboro, WV, 26415) and virtually using Zoom meeting software. The virtual presentation was recorded and is available electronically in the Project file. This memorandum is a summary of the meeting and is not intended to be a verbatim account of what transpired.

The following individuals conducted the presentation:

NRCS	**RJH**	**WSP**
David Sweeney	Robert Huzjak	Ghazoll Motlagh

Purpose

The purposes of these meetings were as follows:

- Review general Project information that was previously presented at the March 8, 2023 Public Scoping Meeting.
- Explain data that was collected to support evaluations.
- Explain existing deficiencies of various dam components.
- Explain the alternatives that were evaluated to address the deficiencies and the estimated construction costs for each. Four alternatives were evaluated:
    1. No Action: Performing no work to address the deficiencies and accepting the risk of dam failure. There is risk that other agencies, such as West Virginia Department of Environmental Protection Dam Safety, might impose restrictions on the dam/lake in the future if dam deficiencies are not addressed.

2. Decommissioning: Constructing an access road, breaching the dam, purchasing property in the downstream inundation limits, and demolishing structures in the inundation limits.
3. Nonstructural
    A. Constructing an access road, breaching the dam and purchase or protect structures in the downstream inundation limits.
    B. Reducing the downstream risk by purchasing downstream properties, constructing an access road, rehabilitating the dam to address deficiencies for a low hazard potential dam.
    C. Lowering the dam crest and reservoir pool to reduce downstream risk, constructing an access road, rehabilitating the dam to address deficiencies for a low hazard potential dam.
4. Structural: Constructing a dam rehabilitation.

- Explain the environmental, architectural, archeological, and economic impacts associated with each of the four alternatives.
- Present the Sponsors' preferred alternative. The preferred alternative is a structural rehabilitation that consists of the following:
    1. Reconstruct the downstream slope of the embankment dam to address seepage and stability deficiencies and construct a new labyrinth weir with concrete chute auxiliary spillway in the existing spillway channel in the left abutment.
    2. Construct a main access road that travels from the left abutment hillside and north of the drainage to the downstream toe. The dam crest access road would cross the spillway channel and traverse the downstream slope of the dam.

Attendance

Meeting notification and the link to the Zoom meeting was distributed to interested agencies, nearby landowners, posted in local and regional newspapers, and posted on social media prior to the meetings.

In-person attendance is shown in Attachment 1.

Representatives from the following agencies and affiliations were in attendance in-person:

- Private landowners
- NRCS
- Little Kanawha Conservation District
- Ritchie County Commission
- West Virginia Conservation Agency
- RJH
- WSP

The following participant attended virtually using Zoom:

- Titus Smith (NRCS)

Presentation

A PowerPoint slide deck was used to facilitate the meeting and share pertinent information with meeting attendees. The slides used in the meeting are provided in Attachment 2.

Discussion

In-person attendees concurred with the preferred structural alternative.

Private landowners Mr. Tony Poling and Mrs. Lori Poling noted that the existing condition of Shelter Road would likely not sustain construction traffic, including areas where the road has previously experienced stability issues (slips). They are concerned that the construction trucks would damage the road, cause more slips and affect (prevent) access to their property. NRCS and RJH stated that the road would be improved as needed for construction traffic, improvements would be coordinated to allow continued access to their property, and the road rehabilitated at the completion of Project construction. RJH clarified that the road rehabilitation is being considered at a feasibility level during the current planning phase of the Project and that during the next phase (i.e., design), there will be field investigations and engineering evaluations for both Shelter Road and the dam access road, which will identify the modifications that are needed for the road to safely convey construction traffic and what is needed for the ultimate restoration of the road at the end of construction. NRCS and RJH also clarified that increased traffic along Shelter Road would not be constant and would primarily occur during the initial mobilization, placement of imported material such as sand and gravel, and concrete placement. However, there will likely be times where access may be impacted for short periods when equipment or deliveries are occurring. Also there may be times during construction of the modifications to enable safe passage for the construction vehicles where there may be flaggers and short term delays to accommodate the work.

The approximate present worth value of recreation benefit of the dam and reservoir is about $900,000 based on a 100-year life of the dam. Presenters at the meeting identified that the economic benefit from recreation was based on estimated numbers of various types of recreation activities and number of visits. Attendees were encouraged, but not required, to fill out a form requesting input on the recreation resources; however, no one filled out the resources inventory form. The meeting attendees stated that there is no record of use for the lake and suggested the Project team follow-up with Mayor Riggs.

The Memorandum of Understanding (MOU) was discussed among Mr. Ritter (Ritchie County Commission), NRCS, and RJH. It was clarified that signing the MOU did not limit which preferred alternative continues into design and that the purpose of the planning phase is to select the preferred alternative. NRCS stated that the MOU is necessary to track in-kind contributions, which will reduce the Sponsors' cost share. A watershed agreement, including all key partners, is necessary to request funding for the design phase.

Attachments:

1. Attendance Sheet
2. Meeting Slides

ATTACHMENT 1 - ATTENDANCE SHEET

Bonds Creek Site 1, Plan Environmental Document
Public Meeting #2: Alternatives
June 6, 2024

Record of Attendance

Name	Address or Agency Affiliation	Email	Phone
Jackie Hagbey	RSH Consultants	jhagbey@rsh-consultants.com	303-225-4611
Bob Hozjak	RSH Consultants	rhozjak@rsh-consultants.com	303-225-4611
Ghazoll Motlagh	WSP	Ghazoll.Motlagh@WSP.com	215.863.1639
David Sweeney	NRCS	david.sweeney@usda.gov	304.290.3214
Steve Ritter	Ritchie Co. Commission	sritter.5013@gmail.com	304-299-3834
Judith Lyons	WV Conservation Agency		
Tony & Lori Poling	191 Akeray Dr. PO Box 331 Pennsboro WV 26415	lpoling@hometownbanc.com	304 483-3813
Sigrid Teets	WVCA - Morgantown	Steets@WVCA.US	304-983-6824
David Goff	LKCD	D.Allen.Goff@GMAIL.com	304-377-7588
Dale Cunningham	LKCD		304-354-6916
Ed Martin	LKCD		
Mike Nichols	LKCD		304-4832541
Titus Smith	NRCS - Attended Virtually		

ATTACHMENT 2 - MEETING SLIDES

Bonds Creek Site 1 Plan-Environmental Document

Second Public Meeting: Alternatives

June 6, 2024, 6:30-8:30 PM

Pennsboro City Hall
422 Main Street
Pennsboro, WV 26415

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

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Meeting Agenda

1. Logistics, Introductions, and Objectives
2. Background
3. NRCS Watershed Rehabilitation Program and NEPA Process
4. Purpose and Need
5. Summary of Data Collection
6. Primary Dam Safety Deficiencies
7. Summary of Alternatives to Address Existing Deficiencies
8. Which Alternatives were eliminated vs. developed for Detailed Study
9. Agency, Property Owners, and General Public Discussion
10. Closing

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Meeting Logistics

- Instructions to Meeting Attendees
- Instructions to Online Attendees
  - Muted and unable to speak.
  - Chat function is enabled and being monitored.
  - Add name, address, and email/phone number to the meeting chat.

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Introductions

Lead Federal Agency

USDA Natural Resources Conservation Service (NRCS)

- David Sweeney, P.E.| *Project Lead*
- Andy Deichert, P.E. | *State Conservation Engineer*
- Christi Hicks | *Assistant State Conservationist - Water Resources*

Project Sponsors

- Bob Buchanan | *Little Kanawha Conservation District Chairman*
- *West Virginia Conservation Agency (WVCA)*
- Robert Riggs | *City of Pennsboro Mayor*
- Randall Riggs, Steve Ritter | *Ritchie County Commission*
- Kenny Ramsey | *Tracy Lake Park Board*

Consultant Lead

RJH Consultants, Inc.

- Robert Huzjak, P.E. | *Project Manager*
- Jacquelyn Hagbery, P.E., P.G. | *Project Engineer*

Environmental Consultant

WSP USA

- Ghazoll Motlagh, P.E., CFM | *Project Manager*

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Meeting Objectives

1. Provide update on progress of work
2. Explain alternatives considered
3. Present Sponsor's preferred alternative
4. Get public opinion and feedback on preferred alternative
5. Provide updates on remaining work tasks

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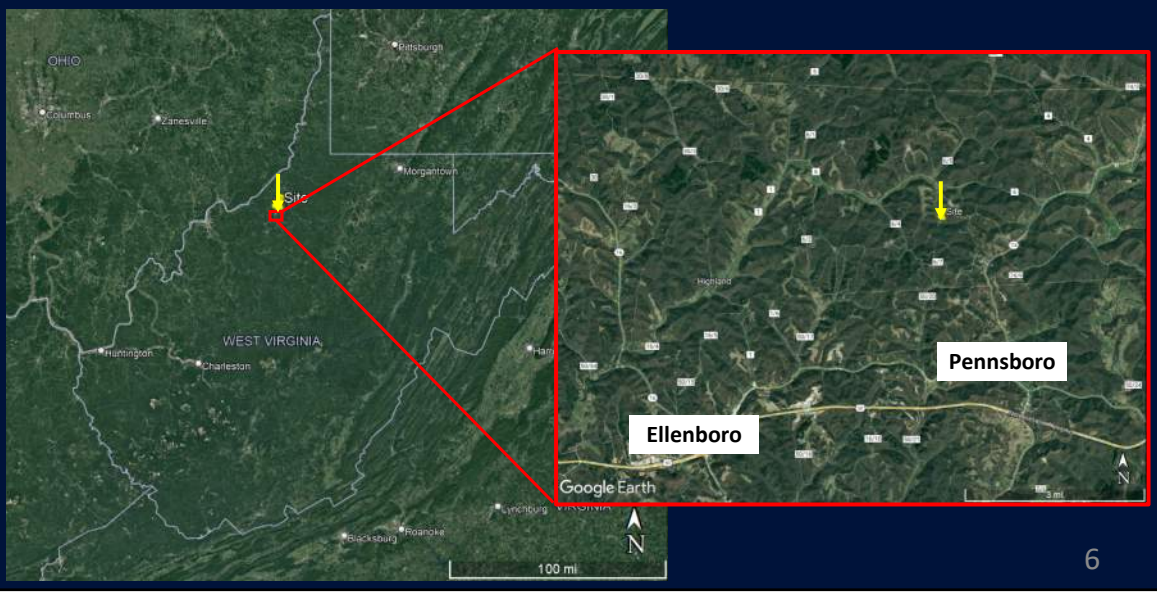
Project Location



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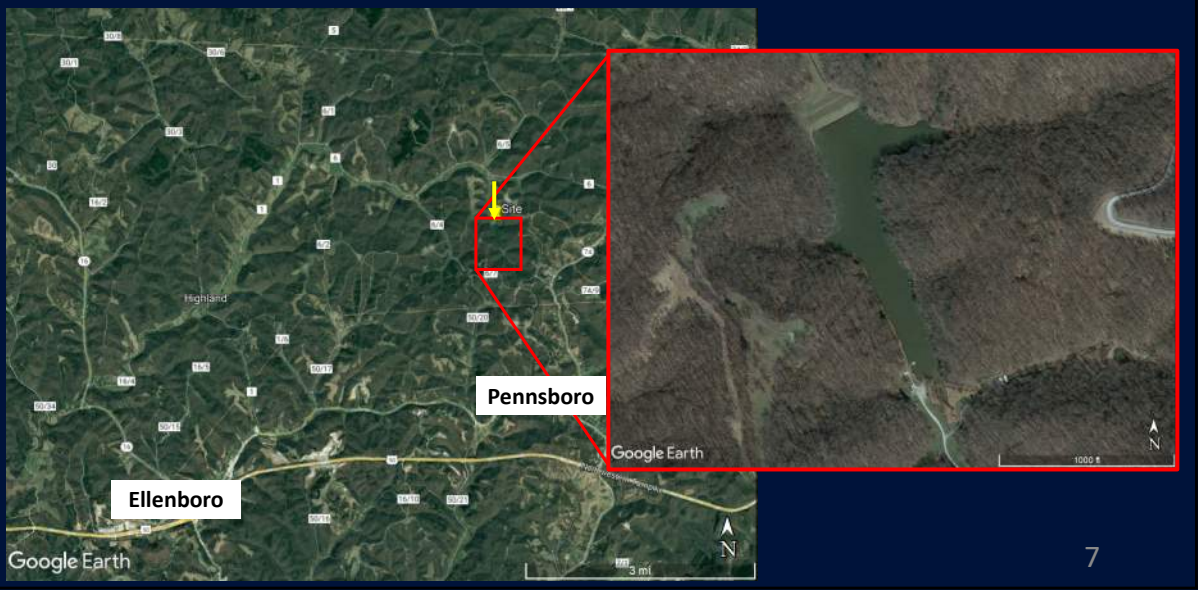
Project Location



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Background

- Designed and built in 1961 as a significant hazard potential dam
- Reclassified as a high hazard potential dam due to downstream development
- 2011 Condition assessment and recent work performed as part of this project indicated the dam does not meet current design standards and the spillway is undersized for a high hazard potential dam

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Dam Breach Inundation

Hydrologic Breach

Dam breach during the Freeboard Hydrograph (FBH) would impact:

- About 12 homes and 55 people
- 1 church
- 2 cabins
- 39 barns/garages
- 8 local roads/creek crossings
- Estimated loss of life greater than 1 person

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Watershed Rehabilitation Process

Planning 2-3 years → **Design** 2 years → **Construction** 2 years

This project is currently in the Watershed Planning phase, which involves:

- Identify the purpose and need.
- Identify and gather data on dam safety concerns.
- Evaluate key resources.
- Evaluate potential solutions.
- Select the preferred alternative.
- Determine if federal funding should be pursued to implement solutions.

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Scope of Work

Project Planning Phases

- Phase 1: Goals, Objectives, Purpose and Need
- Phase 2: Inventory and Analyze Resources
- Phase 3: Alternatives Formulation
- Phase 4: Prepare Final Plan-Environmental Document

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Purpose & Need

Purpose

- Provide water (reservoir) for public recreation, aquatic life, and wildlife
- Provide flood damage reduction
- Improve safety and reduce loss of life potential

Need

- Continue to provide public recreation
- Continue to support aquatic life and wildlife
- Continue to provide flood damage reduction
- Address dam safety and performance deficiencies
- Reduce potential loss of life

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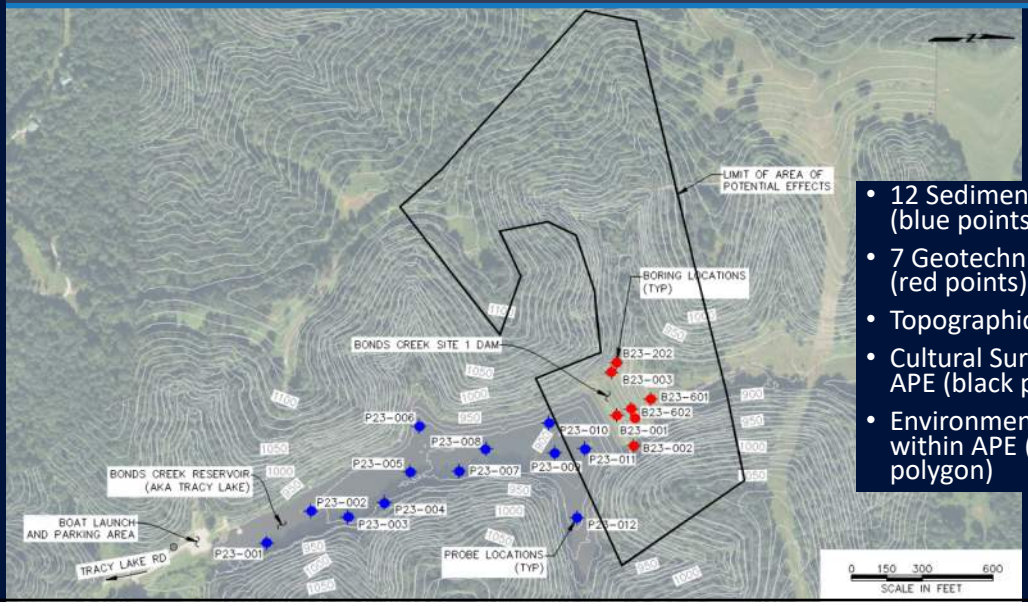
Summary of Data Collection



- 12 Sediment Probes (blue points)
- 7 Geotechnical Borings (red points)
- Topographic Surveying
- Cultural Survey within APE (black polygon)
- Environmental Survey within APE (black polygon)

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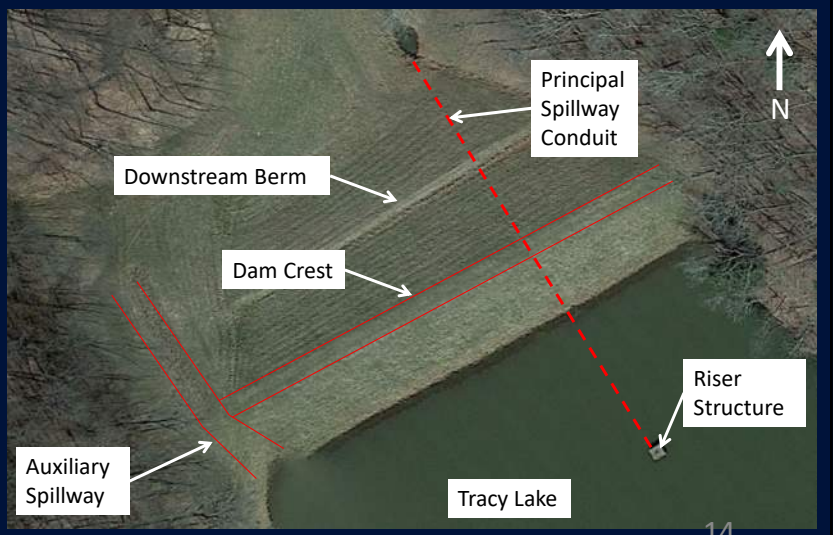
Dam Components

Auxiliary Spillway (ASW)
- Undersized
- Predicted to Erode During Auxiliary Spillway Hydrograph (ASH)
- Predicted to Likely Breach During FBH

Embankment
- Overtops During FBH
- Inadequate Seepage Protection
- Inadequate Downstream Berm Stability

Principal Spillway (PSW) Conduit
- Inadequate Seepage Protection
- Inadequate Structural Capacity

Principal Spillway Riser
- Buried and Non-operational Low-Stage Slide Gate



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Dam Access

Currently Inadequate

- Upstream only
- No vehicle access

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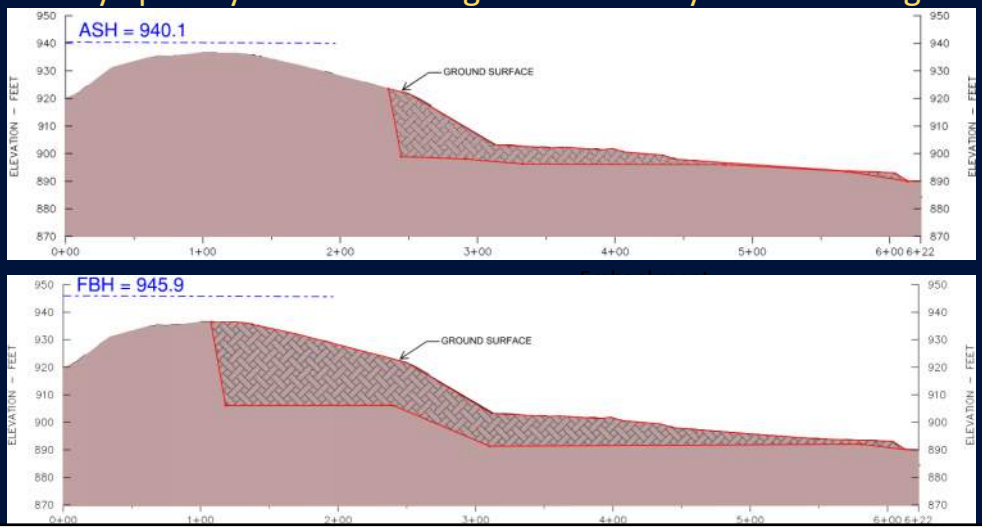
Primary Dam Safety Deficiencies

Auxiliary Spillway: Erosion during ASH and likely breach during FBH



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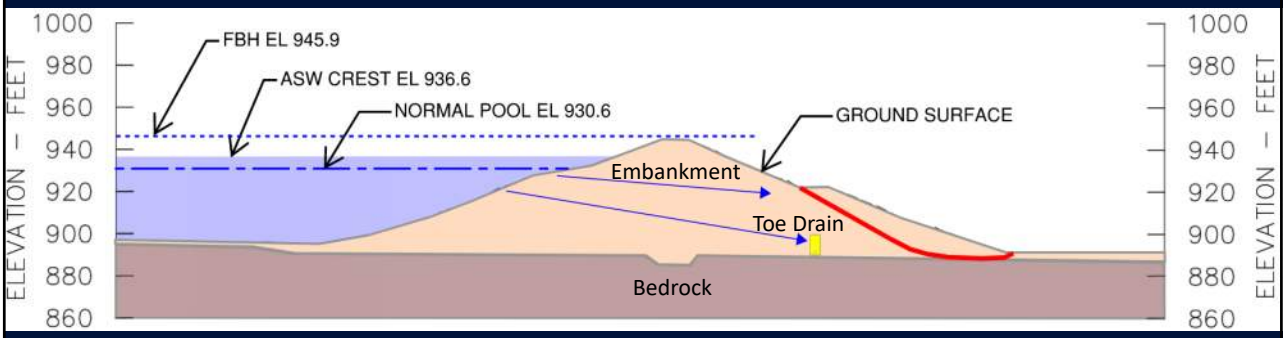
Primary Dam Safety Deficiencies

Embankment:

Overtops During FBH, Inadequate Seepage Protection, Inadequate Downstream Berm Stability



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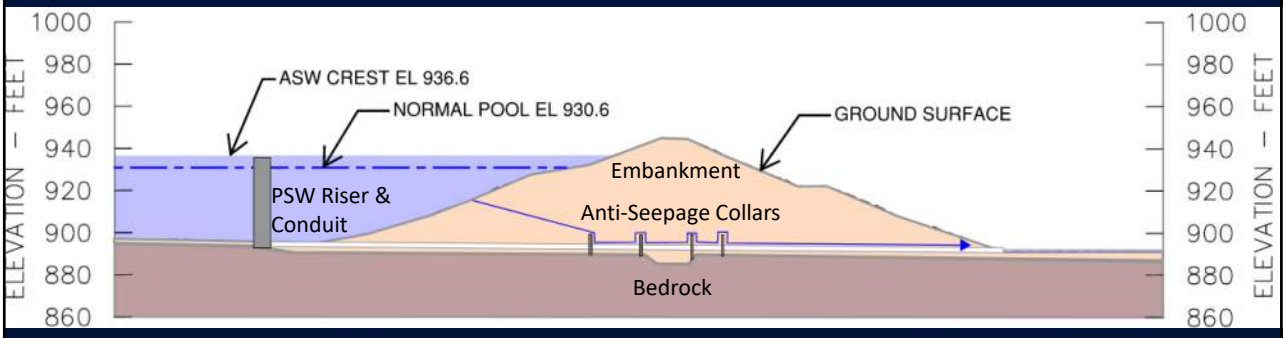
Primary Dam Safety Deficiencies

Principal Spillway:

Inadequate Seepage Protection, Inadequate Structural Capacity, Downstream Submergence, Non-operable Slide Gate



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Initial Array of Alternatives to Address Deficiencies

- Alternative 1 (No Action/Future Without Project (FWOP))
  - Continue to operate dam in its current condition and accept the risk of failure
- Alternative 2 (Decommissioning)
  - Construct access road, breach the dam, purchase property in downstream inundation limits (100-year and 500-year)
- Alternative 3 (Nonstructural)
  - Option A: Construct access road, breach the dam, purchase/protect structures in downstream inundation limits (100-year and 500-year)
  - Option B: Reduce downstream risk (i.e., buy out downstream properties), construct access road, rehabilitate the dam to address deficiencies for low hazard dam
  - Option C: Lower dam crest & reservoir pool to decrease hazard classification to a low hazard potential, construct access road, rehabilitate the dam to address deficiencies for low hazard dam
- Alternative 4 (Structural)
  - Construct access road, rehabilitate the dam to address deficiencies and meet current standards

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Alternative 2

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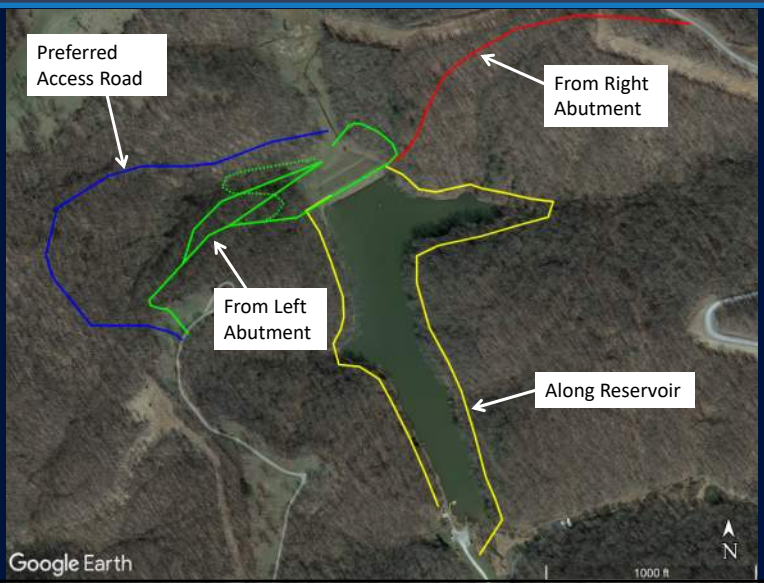
Options for Addressing Access Road



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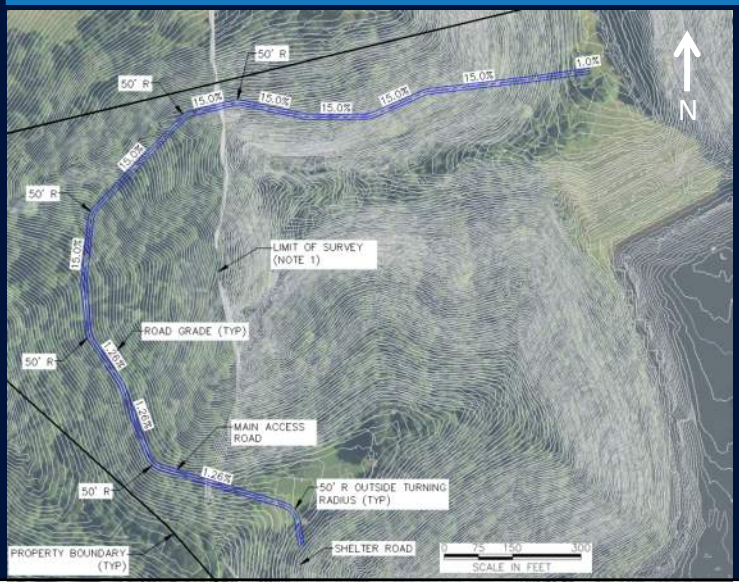
Alternative 2 (Decommissioning)



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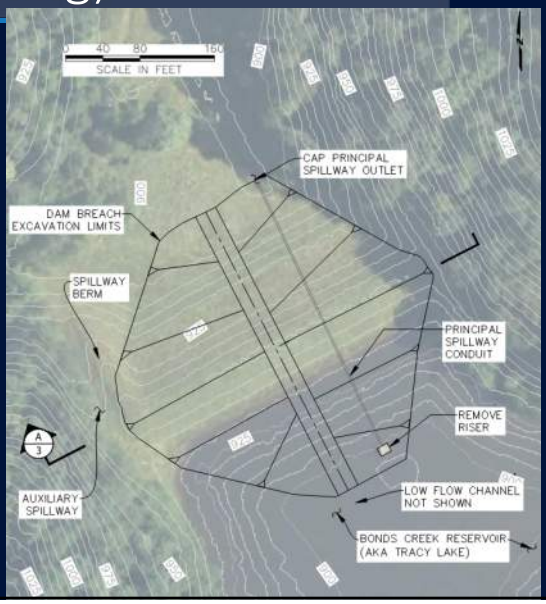
Alternative 2 (Decommissioning)

- Construct temporary access road
- Rehabilitate Shelter Road at end of construction
- Breach dam and stockpile material in reservoir
- Demolish PSW riser, abandon PSW conduit
- Reclaim reservoir to stabilize sediment and create meandering stream channel
- Purchase downstream inundated pasture
- Purchase and demolish downstream inundated structures



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Alternative 3

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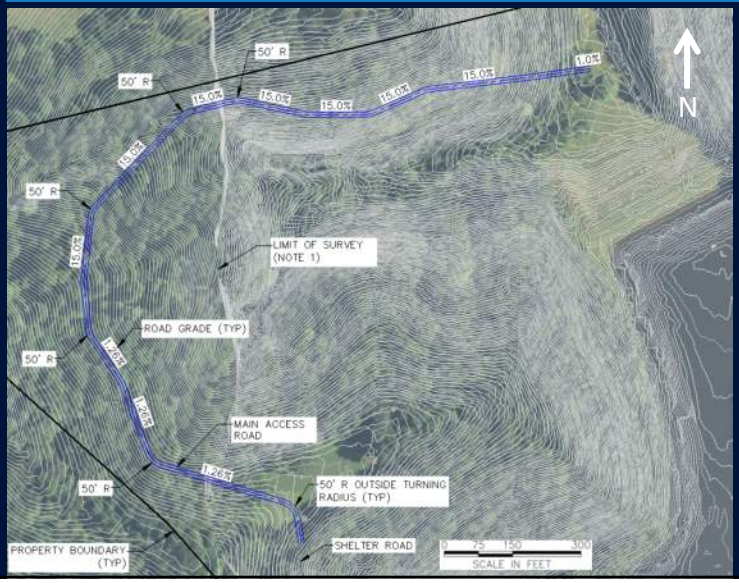
Alternative 3 (Nonstructural) – Option A (Breach)



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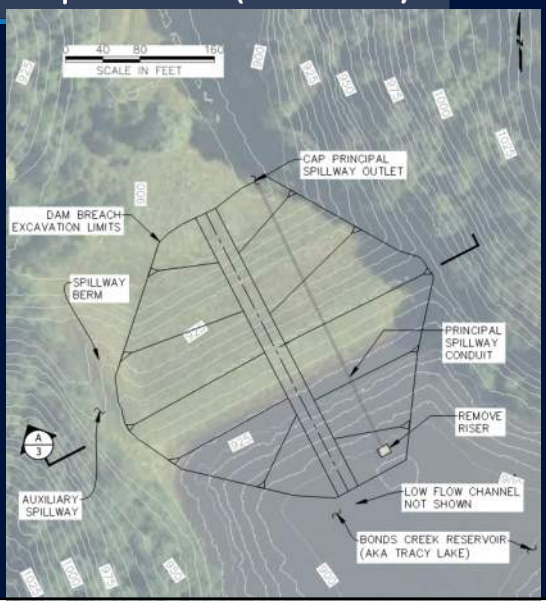
Alternative 3 (Nonstructural) – Option A (Breach)

- Construct temporary access road
- Rehabilitate Shelter Road at end of construction
- Breach dam and stockpile material in reservoir
- Demolish PSW riser, abandon PSW conduit
- Reclaim reservoir to stabilize sediment and create meandering stream channel
- Purchase downstream inundated pasture
- Relocate 1 structure
- Protect 1 structure (500-yr)
- Modify 2 road crossings/culverts



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Alternative 3 (Nonstructural) - Option B (Reduce Downstream Risk)

- Lower hazard classification
- Maintain existing dam height and reservoir pool
- Purchase and demolish downstream structures and associated parcels impacted by inundation
  - Today's development to meet low hazard classification: 28 structures (12 homes, 13 barns, 2 cabins, 1 church)
  - Risk of future downstream development
- ASW is sufficient for low hazard potential dam
- Fix embankment and PSW deficiencies for a low hazard potential dam
- Construct permanent access road
- Rehabilitate Shelter Road

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Alternative 3 (Nonstructural) - Option C (Lower Dam Crest)

- Lower hazard classification
- Lower the dam crest and reservoir pool to reduce downstream risk (loss of life)
- Dam height = 10.7 ft
- Storage = 4.3 ac-ft
- Lowered dam provides no flood protection
- Option C dismissed because it does not meet the purpose & need, and is ineffective

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Alternative 4

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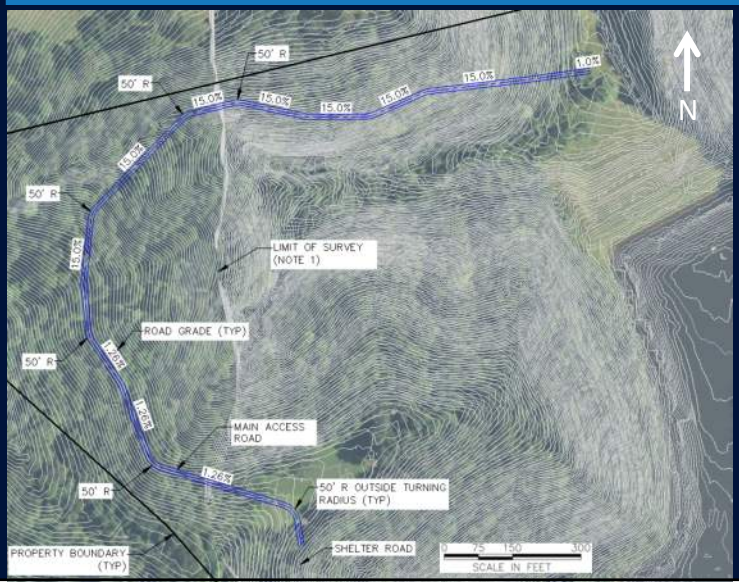
Alternative 4 (Structural)



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Options for Dam Crest Access Road

- Potential Options:
  - Along downstream slope of dam
  - Cut into right abutment
- Selected option depends on ASW alternative

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Options for Addressing Auxiliary Spillway Erodibility

- Options Considered but Eliminated from Detailed Study:
  - Raise Dam and Store the FBH: Required 28 feet raise and inundated upstream facilities
  - Increase Width/Relocate to Right Abutment: Required width is 140 feet and does not fit in steep topography of either abutment
  - Embankment Overtopping Spillway with Articulated Concrete Blocks or Soil Cement: Not feasible because of high velocity flows
- Potential Options:
  - Labyrinth weir with concrete chute in existing ASW channel
  - Roller Compacted Concrete (RCC) Overtopping

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Options for Addressing Auxiliary Spillway Erodibility

Labyrinth Weir & Concrete Chute

- Raise ASW 0.1 feet to meet PSH drawdown requirements

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Options for Addressing Auxiliary Spillway Erodibility

RCC Overtopping

- Raise ASW 0.1 feet to meet PSH drawdown requirements

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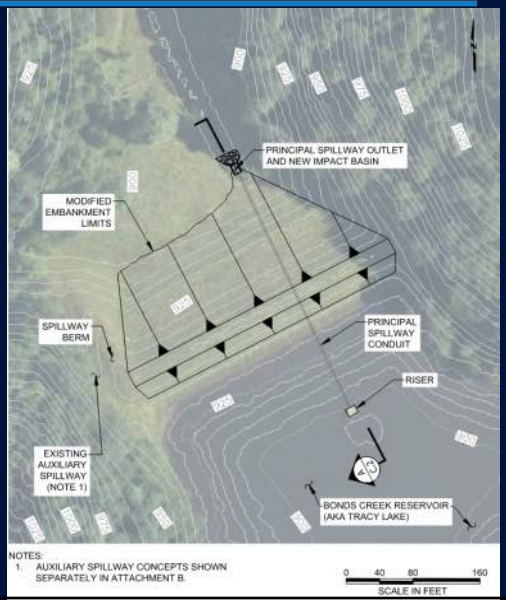
Mitigate Embankment and Principal Spillway Deficiencies

Embankment

- Excavate and reconstruct downstream slope
- Add chimney filter and blanket drain
- Install new toe drain
- Install instrumentation

Principal Spillway

- Line conduit with CIPP, variance for pipe diameter
- Install impact basin (Labyrinth ASW only)
- Install new slide gates and trash racks in riser



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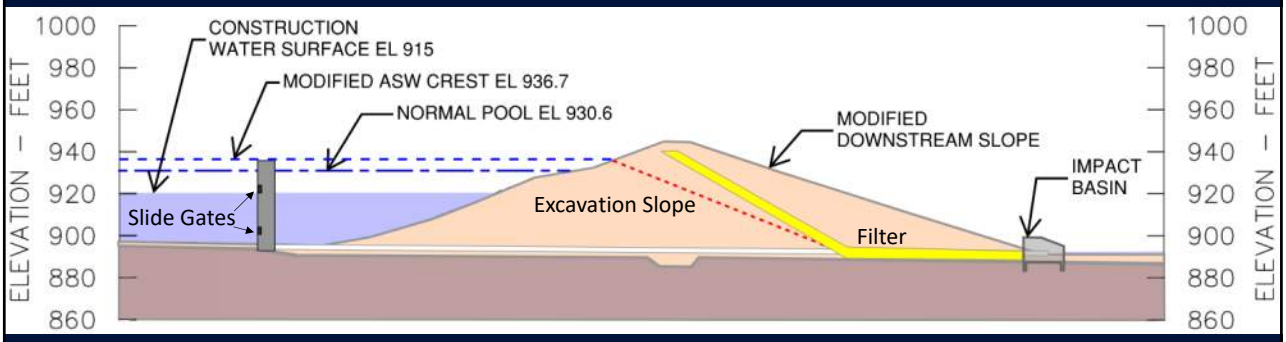
Mitigate Embankment and Principal Spillway Deficiencies



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Final Array of Alternatives

- Alternative 1 (No Action)
- Alternative 2 (Decommissioning)
- Alternative 3 (Nonstructural)
  - Option A (Breach)
  - Option B (Reduce Downstream Risk)
- Alternative 4 (Structural)
  - Labyrinth ASW
  - RCC Overtopping ASW

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Aquatic Resources within Project Areas

- The Project Review Area is located within the Bonds Creek Watershed (HUC-050302030905).
- Bonds Creek is a tributary to the North Fork Hughes River
- Pool created by dam is Tracy Lake (approximately 13 acres).
- Bonds Creek and headwater tributary streams occur within the Project Area.
- Possible wetlands along streams and floodplains.

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Endangered Species

Federally listed species with potential to occur in the project areas include:

Bats

- Indiana bat, Gray bat, and Northern long-eared bat - Listed Endangered
- Tricolored bat– Proposed Endangered

Mussels

- Clubshell and Snuffbox Mussel – Listed Endangered
- Longsolid– Listed Threatened
- Round Hickorynut– Listed Threatened
- Salamander Mussel – Proposed Endangered

Insect

- Monarch Butterfly (Candidate)

- Potential foraging and roosting habitat for listed bats within project areas.
- Potential habitat for mussels in streams and rivers downstream of the dam.
- Potential limited habitat for Monarch butterfly, which is not federally protected.

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Environmental Impacts – Alternative 1 – FWOP

If *no action* is taken, there is potential for **dam failure**.

❖ In the event of dam failure, there would be short-term impacts to natural resources within the breach inundation area.

Short-term Impacts
• High flows could damage natural resources within the breach inundation area • Flooding and sediment could temporarily adversely impact stream habitats and water quality

❖ In the absence of a dam breach, no impacts to natural resources would occur and current conditions would persist.

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Environmental Impacts – Alternative 2 - Decommission

Short-term Impacts	Long-term Impacts
• Potential water quality impacts during construction*	•Removal of 8.12 acres of forest and removal of potential suitable roosting habitat for federally-listed bats** •More natural stream flows and more frequent flooding would occur downstream within the 500-year inundation area •Loss of approximately 22-acre pond that provides aquatic habitat and recreational values
*Best Management Practices (BMPs) would be used to limit adverse impacts. **Adverse impacts could be avoided by adhering to seasonal clearing restrictions.	

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Environmental Impacts – Alternative 3 – Non-Structural

Short-term Impacts	Long-term Impacts
• Potential water quality impacts during construction*	•Removal of 10.35 acres of forest and removal of potential suitable roosting habitat for federally-listed bats** •More natural stream flows and more frequent flooding would occur downstream within the inundation area •Loss of approximately 22-acre pond that provides aquatic habitat and recreational values
*Best Management Practices (BMPs) would be used to limit adverse impacts. **Adverse impacts could be avoided by adhering to seasonal clearing restrictions.	

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Environmental Impacts – Alternative 4 - Structural

Short-term Impacts	Long-term Impacts
•Potential water quality impacts due to construction* •Temporary loss of pond and wetland habitat due to partial drawdown during construction •Drawdown would expose normally inundated areas for an extended period •Temporary loss of recreational value due to construction	•Removal of 22.64 acres of forest to construct dam, auxiliary spillway, and access road •Loss of 0.67acres of wetlands to construct the dam, auxiliary spillway and access road •Removal of approximately 22 acres of potentially suitable roosting habitat for federally-listed bats** •Continued attenuation of stream flows as a result of the dam •Potential loss of headwater stream habitat due to construction of access road and disposal of excess material.
*Best Management Practices (BMPs) would be used to limit adverse impacts. **Adverse impacts could be avoided by adhering to seasonal clearing restrictions.	

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Environmental Impacts – Summary

Potential Effects of Proposed Alternatives				
Resource Concern	Alternative 1*	Alternative 2	Alternative 3	Alternative 4
Threatened & Endangered Species	✓	✸	✸	✸
Wetlands	✓	✓	✓	✓
Hydrology	✓	✓	✓	X
Pond Habitat	✓	✓	✓	✓
Stream Habitat	✓	⮙	⮙	X
Flooding	✓	✓	✓	X
Water Quality	✓	✸	✸	✸

*Impacts associated with Alternative 1 assume dam breach occurs
✓ Impact
X No Impact
✸ Adverse impacts could be avoided by adhering to seasonal clearing restrictions and use of Best Management Practices (BMPs)
⮙ Re-establishment of habitat

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Architectural Impacts – Alternative 1 – FWOP

If *no action* is taken, there is potential for **dam failure**.

❖ In the event of dam failure, there could be both short- and long-term impacts to historic resources within the breach inundation area.

Historic Resources* within the Hydrologic Breach Inundation Area	
• The historic earthen dam embankment** • One religion-related building • Three agriculture-related buildings	• 4 bridges • 9 residential buildings • Remains of one cut stone abutment

*None of the historic buildings or structures except the historic residential building associated with Hogue farm appear eligible for listing in the National Register of Historic Places (NRHP). All appear to be common types found throughout the region and country, although an assessment of each resource is necessary to determine eligibility requirements.
**The dam embankment was previously surveyed by WSP in November 2022 and recommended as not eligible for listing in the NRHP.

❖ In the absence of a dam breach, no impacts to historic resources would occur and current conditions would persist.

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Architectural Impacts – Alternative 2 - Decommission

Historic Resources* within Alternative 2's LOD and 500-year Flood Inundation Area	
• The historic earthen dam embankment** • One religion-related building • One agriculture-related building	• Four bridges • One residential building • Remains of one cut stone abutment

*None of the historic buildings or structures except the historic residential building associated with Hogue farm appear eligible for listing in the National Register of Historic Places (NRHP). All appear to be common types found throughout the region and country, although an assessment of each resource is necessary to determine eligibility requirements.
**The dam embankment was previously surveyed by WSP in November 2022 and recommended as not eligible for listing in the NRHP.

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Architectural Impacts – Alternative 3 – Non-Structural

Historic Resources* within Alternative 3's LOD	
• The historic earthen dam embankment** • One religion-related building	• One bridge • One residential building
*None of the historic buildings or structures appear eligible for listing in the National Register of Historic Places (NRHP). All appear to be common types found throughout the region and country, although an assessment of each resource is necessary to determine eligibility requirements. **The dam embankment was previously surveyed by WSP in November 2022 and recommended as not eligible for listing in the NRHP.	

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Architectural Impacts – Alternative 4 -Structural

Historic Resources* within Alternative 4's LOD
• The historic earthen dam embankment**
*None of the historic buildings or structures appear eligible for listing in the National Register of Historic Places (NRHP). All appear to be common types found throughout the region and country, although an assessment of each resource is necessary to determine eligibility requirements. **The dam embankment was previously surveyed by WSP in November 2022 and recommended as not eligible for listing in the NRHP.

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Archaeological Impacts – Alternative 1 – FWOP

- In November 2022, WSP completed a Phase 1 archaeological survey of approximately 3.8 acres
  - No archaeological sites or isolated finds were found within the surveyed area
  - Background research revealed that no previously recorded sites were located within a one-mile buffer of each proposed LOD
- Alternative 1 does not require ground disturbance and no archaeological survey will be required

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Archaeological Impacts – Alternative 2 - Decommission

- Includes proposed ground disturbance
- Soils suggest a relatively stable landform that, while not necessarily containing potential for deeply buried deposits, could contain intact soils containing archaeological materials in the upper soils.

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Archaeological Impacts – Alternative 3 – Non-Structural

- Includes proposed ground disturbance
- Soils suggest a relatively stable landform that, while not necessarily containing potential for deeply buried deposits, could contain intact soils containing archaeological materials in the upper soils.
- Contains four historic structures leading to a high potential to recover archaeological deposits.

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Archaeological Impacts – Alternative 4 - Structural

- Includes proposed ground disturbance
- Soils suggest a relatively stable landform that, while not necessarily containing potential for deeply buried deposits, could contain intact soils containing archaeological materials in the upper soils.

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Summary of Environmental and Cultural Impacts

Relative Impacts			
Alternative	Environmental	Architectural	Archaeological†
1 – Future without Project*	High	High	Neutral
2 – Decommissioning	Medium	Medium	Neutral
3a – Non-Structural	Medium	Low	High
3b – Non-Structural	Medium	Low	High
4 – Structural	Low	Neutral	Neutral

*Impacts associated with Alternative 1 assume dam breach occurs
† Neutral impacts reflect desktop analysis with no findings but may require field verification for the preferred alternative

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Potential Economic Impacts

Potential economic impacts associated with the loss of the Bonds Creek recreational facility can be characterized by the parameters provided below. An initial estimate of losses has been provided assuming 250 visits to the lake annually; however, these values should be verified with locally available estimates for annual visits. These impacts are in addition to the cost associated with each of the alternatives depending on whether the impact is temporary (Alt 4) or permanent (Alt 1,2,&3).

Primary Activity	National Per Day Per Person Value	Percent of Total Activities	Number of Visits	Activity Days Per Visit	Primary Activity Days	Annual Benefit
Developed Camping	$46.47	4%	10	2.7	27	$ 1,254.69
Fishing	$82.37	60%	150	1.3	195	$ 16,062.15
Nature-Related	$70.99	16%	40	1.1	44	$ 3,123.56
Nonmotorized Boating	$119.78	16%	40	1.1	44	$ 5,270.32
Picnicking	$60.03	4%	10	1.2	12	$ 720.36
					Total Annual Benefit:	$ 26,431.08

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Summary - Purpose & Need

- Do the alternatives meet the Purpose & Need?

Alternative	Meet P&N?	Comment
1 (No Action/FWOP)	No	Does not address deficiencies that are not in compliance with NRCS and WVDEP standards.
2 (Decommissioning) 100-yr	No	Public recreation and aquatic life and wildlife are reduced.
2 (Decommissioning) 500-yr	No	Public recreation and aquatic life and wildlife are reduced.
3 (Nonstructural – A) 100-yr	No	Public recreation and aquatic life and wildlife are reduced.
3 (Nonstructural – A) 500-yr	No	Public recreation and aquatic life and wildlife are reduced.
3 (Nonstructural – B)	Yes	All are met.
4 (Structural – Labyrinth)	Yes	All are met.
4 (Structural – RCC Overtopping)	Yes	All are met.

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Summary of Construction Costs

Alternative	Approx Construction Cost ($ Millions)	Expected Impact from Annual Benefit/Loss of Revenue ($)
1 (No Action/FWOP)	0.0	-26,000
2 (Decommissioning) 100-yr	4.6	-26,000
2 (Decommissioning) 500-yr	4.9	-26,000
3 (Nonstructural – A) 100-yr	5.2	-26,000
3 (Nonstructural – A) 500-yr	6.1	-26,000
3 (Nonstructural – B)	7 to more than 14	+26,000*
4 (Structural – Labyrinth)	11.2	+26,000*
4 (Structural – RCC Overtopping)	11.3	+26,000*

* Temporary loss of revenue during construction but will be an annual benefit over lifespan of rehabilitated dam.

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Sponsor's Selection of Preferred Alternative

- Alternative 1 (No Action) is not preferred because it does not address existing deficiencies.
- Alternative 2 (Decommissioning) is not preferred.
  - Flood control benefits of the dam would be lost.
  - Fishing/recreation benefits of the dam would be lost or reduced.
  - Environmental and wildlife benefits would be lost or reduced.
- Alternative 3 (Nonstructural – Option A) is not preferred.
  - Flood control benefits of the dam would be lost, however downstream existing structures would be protected.
  - Fishing/recreation benefits of the dam would be lost or reduced.
  - Environmental and wildlife benefits would be lost or reduced.
- Alternative 3 (Nonstructural – Option B) is not preferred.
  - Cooperation and coordination with numerous property owners would be required.
  - Cost might be higher than addressing existing deficiencies.
- Alternative 4 (Structural) is preferred.
  - Meets the purpose and need and addresses deficiencies.
  - Labyrinth: New labyrinth weir with concrete chute ASW is technically preferred.
  - RCC Overtopping: Is not technically preferred and requires access road in the right abutment.

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Sediment Relocation

- Relocate sediment in the lake
- Storage is available in the lake and does not affect fishing/recreation/flood storage
- Ongoing coordination with:
  - U.S. Army Corps of Engineers
  - U.S. Fish and Wildlife Service

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Open Discussion/Questions

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Public Input

- Three scheduled opportunities for public and agency input:
  - Initial Public/Agency Scoping Meeting – Spring 2023
    - Provided: Project introduction
    - Requested: Input on objectives, alternatives, and prioritization
  - Alternatives Meeting – Today
    - Provided: Report on how input was incorporated and presentation of alternatives
    - Requested: Input on selected alternative
  - Plan-Environmental Document Review Meeting
    - Provided: Review of the Plan-Environmental Document
    - Requested: Comments on the Plan-Environmental Document

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Schedule

Alternatives Meeting	June 6, 2024
Public review of draft documents	Winter 2024/25
Public review of final documents	Winter 2024/25
Planning Completion	Spring 2025

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Closing Comments

Final Thoughts

- Planning phase of a bigger project.
- Schedules and timelines are targets, not rigid.
- The participation of public and agencies is voluntary BUT CRITICAL TO A SUCCESSFUL PROJECT.
- The project is intended to reflect the values and opinions of the local agencies and community whenever possible.
- Project webpage: https://www.nrcs.usda.gov/conservation-basics/conservation-by-state/west-virginia/bonds-creek-site-1
- Contact David Sweeney with the NRCS:
- Email: david.sweeney@usda.gov
- Phone: (304) 290-3214

Comments/Questions are due to David Sweeney by: Monday July 8, 2024

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