Lebanon County Conservation District
Countywide Action Plan (CAP) Grants 2025




Proposed Projects Information

October 2024

TROUT UNLIMITED
DOC FRITCHEY CHAPTER

QWA
QUITTAPAHILLA WATERSHED ASSOCIATION

LCCD

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Countywide Action Plan (CAP) Grants 2025

Proposed Projects Information

Prepared for

Doc Fritchey Trout Unlimited

Quittapahilla Watershed Association

and

Lebanon County Conservation District

Prepared by

Clear Creeks Consulting, LLC

October 2024

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Gingrich Run 1 - Gully Restoration Project

Landowners

Justin Reiner
1071 S. Mount Wilson Road
South Annville, PA

Weaber Wood Products
1231 S. Mount Wilson Road
South Annville PA

Introduction

The stream on the Reiner Property is the headwaters of Gingrich Run, which is part of the Quittapahilla Creek Watershed.

Since 1997 the Quittapahilla Watershed Association (QWA) and their partners, The Lebanon Valley Conservancy (TLVC), Doc Fritchey Trout Unlimited (DFTU) and the Lebanon County Conservation District (LCCD) have been working with private landowners and a number of private organizations and public agencies to improve the water quality, channel stability, riparian and in-stream habitat of the creeks in the watershed. In 2001 the QWA sponsored by the Swatara Watershed Association (SWA) contracted Clear Creeks Consulting to conduct an assessment of Quittapahilla Creek Watershed and develop a restoration and management plan focused on addressing the problems identified by the assessment.

Supported by Growing Greener Grants received from PADEP in 2001 and 2003, the Assessment Phase of Quittapahilla Watershed Project was completed between 2001 and 2005 and the Planning Phase between 2005 and 2006. The Quittapahilla Watershed Restoration and Management Plan (2006) included BMPs identified for controlling runoff from urban land and agricultural land, as well as projects focused on streambank stabilization and riparian buffer plantings along unstable stream reaches of the mainstem Quittapahilla Creek and its major tributaries.

A major component of the overall Quittapahilla Creek Watershed Assessment was Field Reconnaissance Surveys of 65 miles of the five major tributaries to Quittapahilla Creek. The data collected during these surveys was utilized to identify problem areas and potential restoration projects in the subwatersheds. That data is now twenty years old.

In 2017, the Quittapahilla Watershed Association began conducting Field Reconnaissance Surveys of the subwatersheds to document current stream reach conditions and determine the continued need for restoration/stabilization along the subwatershed reaches. These surveys have been conducted by college students serving as summer interns funded by grants secured by the QWA and more recently funded by the Lebanon County Conservation District and trained by Clear Creeks Consulting. The 2023 surveys focused on Snitz Creek, Gingrich Run and Killinger Creek. The stability problems on the Reiner Property were identified during these surveys (Figure 1).

Figure 1 – Area of Upper Gingrich Run included in 2023 Field Reconnaissance Survey

Problems Identified

1. There are remnants of a small concrete dam at the downstream end of the upper section of the reach. The presence of the dam has created gully erosion where storm flows drop over the dam and scour the bed of the downstream section. In addition, the juxtaposition of the dam is directing storm flows into the right bank causing erosion and undercutting.
2. From the dam to a small timber bridge, approximately 120 feet downstream the channel is incised with several small head-cuts and erosion along both banks. Bank heights along this section range from 5 - 6 feet transitioning to 1 – 2 feet at the bridge.
3. Just downstream of the bridge, there is a large active head-cut with a 5 – 6 foot drop.
4. For the next 240 feet the channel is deeply incised channel with severely eroding banks and multiple active head-cuts. Bank heights along this section range from 7 - 8 feet.
5. There are undercut, leaning and fallen trees along the banks and in the channel.
6. Over the last 50 feet, the channel transitions into an unstable channel with large trees along the banks that provide stabilizing root mass. However, the trees are undercut. Bank heights are lower ranging from 3 – 4 feet.

The existing conditions are documented in Figure 2 and Photos 1 – 11.

Figure 2 – Stability Problems Identified

Gingrich Run 1 – Photos (5/23/2023)

Photo 1 - Remnants of concrete dam

Photo 2 – Deeply incised channel with fallen tree, junk and debris

Photo 3 – Deeply incised channel with fallen tree, junk and debris

Photo 4 – Deeply incised channel with fallen tree

Photo 5 - Deeply incised channel with undercut and leaning tree

Photo 6 - Deeply incised channel with undercut and eroding banks

Photo 7 - Deeply incised channel with undercut and eroding banks

Photo 8 - Deeply incised channel with undercut and eroding banks

Photo 9 - Landowner standing in incised channel with severely undercut and eroding banks

Photo 10 - Landowner standing in incised channel with severely undercut and eroding banks

Photo 11 – Downstream end of Project Area with eroding right bank

Stabilization Approach

Stabilize 390 linear feet of unstable channel by:

1. Removing remnants of a concrete dam.
2. Removing fallen trees, junk and debris.
3. Grading banks to establish a stable angle of repose.
4. Raising the streambed by backfilling channel with compacted soil and transitioning from upstream to downstream with timber/boulder steps and pools.
5. Stabilizing the undercut banks with mature trees along the lower 50 feet of the Project Area by placing boulder packing beneath the tree roots along the banks.
6. Planting streambanks with native shrubs.

A Concept for the Stabilization Approach is shown in Figure 3. as well as Photos 12 and 13 showing completed projects that illustrate these approach.

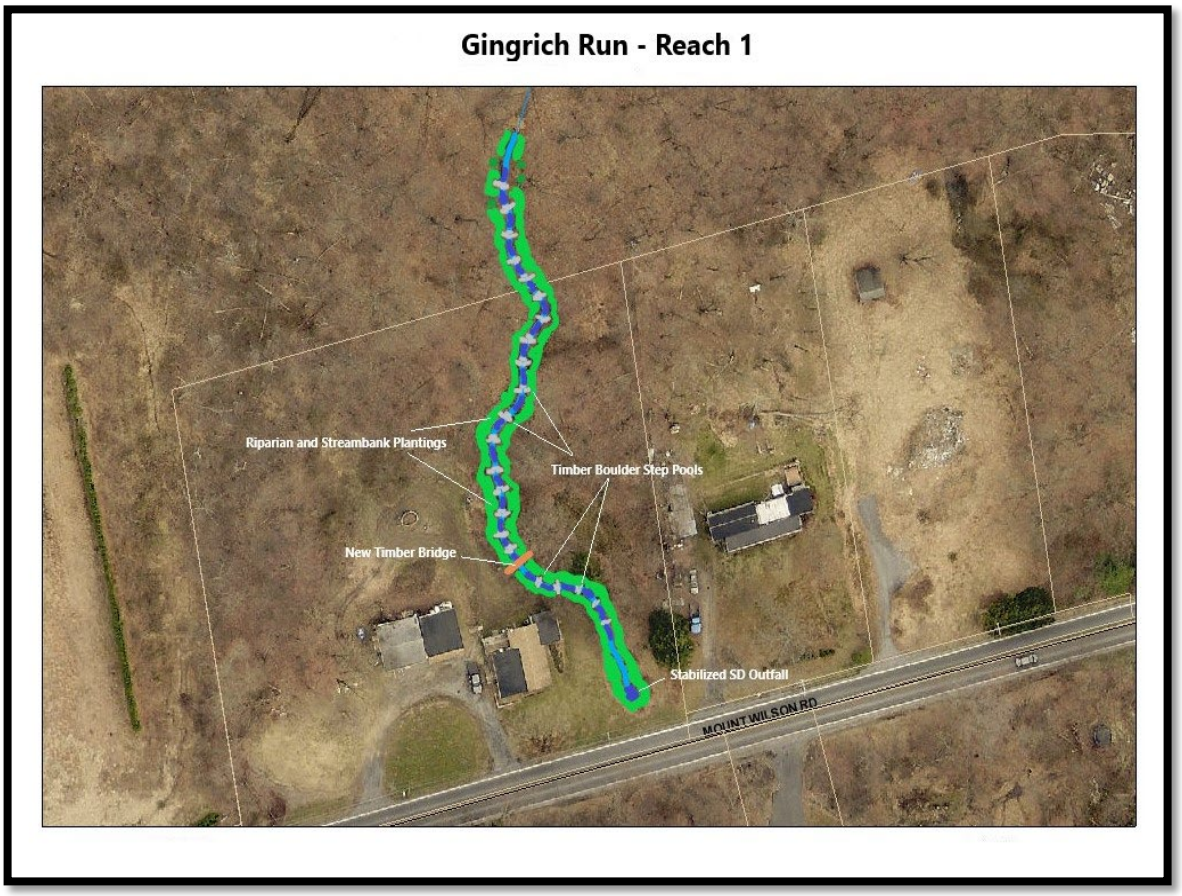

Figure 3 – Proposed Conditions

Photo 12 – Example of Constructed Timber Boulder Step Pools

Photo 13 – – Example of Constructed Timber Boulder Step Pools

CAP 2025 Project 1 – Gingrich Run 1 Budget

Task	Budget
Topographic Survey and Base Maps	$10,125.00
Design Plans including Plan View, Longitudinal Profile, Typical Cross-Sections, Structure Details, E&S (If required)	$22,000.00
Permitting – GP-1, GP-3, and E&S	$10,750.00
Construction – Grading, backfilling, installation of structures, matting, seeding and plantings.	$152,000.00
Redlined As-Built Plans	$9,450.00
Total	$204,325.00

This budget was submitted by Resource Restoration Group, the low bidder, in the Competitive Bid-RFP process for this Project.

Doc Fritchey Trout Unlimited will be the Project Sponsor. They are requesting $5,108.00 for Grant Administration and Construction Contract Management.

Gingrich Run 1 - Application Summary

1. Receiving Stream Name: Gingrich Run
2. Proposed BMPs and Quantities: Non-urban Stream Restoration including removal of concrete dam, stabilization of deeply incised gully – 390 feet
3. CAP Action Item: Action 2.3 Pursue regional stream and wetland restoration projects that provide additional benefits to multiple communities and MS4s.

4. Project Readiness – Project Design, Permitting and Implementation in Less than 18 Months.
5. Project Summary
    a. Description of Current Conditions – See attached Detailed Project Description Narrative with Aerials and Photos
    b. How BMPs will Improve Current Situation - See attached Detailed Project Description Narrative with Aerials and Photos
    c. Added Value to Community – Improve water quality by reducing sediment and nutrient loadings to downstream stream reaches; eliminating a public safety issue, promoting education and knowledge of restoration efforts in the community.
    d. Other Projects in the Watershed: This is the first of 15 projects planned in the Gingrich Run watershed that will restore 16,717 feet of unstable stream channels.
    e. Any Preceding Projects: None

Beck Creek 1 – Dam Embankment Stabilization and Gully Restoration Project

Landowners

Joshua and Carla Formanek
60 Old Mine Road
West Cornwall, PA

Introduction

The streams on the Formanek Property are unnamed tributaries to Beck Creek, which is part of the Quittapahilla Creek Watershed.

Since 1997 the Quittapahilla Watershed Association (QWA) and their partners, The Lebanon Valley Conservancy (TLVC), Doc Fritchey Trout Unlimited (DFTU) and the Lebanon County Conservation District (LCCD) have been working with private landowners and a number of private organizations and public agencies to improve the water quality, channel stability, riparian and in-stream habitat of the creeks in the watershed. In 2001 the QWA sponsored by the Swatara Watershed Association (SWA) contracted Clear Creeks Consulting to conduct an assessment of Quittapahilla Creek Watershed and develop a restoration and management plan focused on addressing the problems identified by the assessment.

Supported by Growing Greener Grants received from PADEP in 2001 and 2003, the Assessment Phase of Quittapahilla Watershed Project was completed between 2001 and 2005 and the Planning Phase between 2005 and 2006. The Quittapahilla Watershed Restoration and Management Plan (2006) included BMPs identified for controlling runoff from urban land and agricultural land, as well as projects focused on streambank stabilization and riparian buffer plantings along unstable stream reaches of the mainstem Quittapahilla Creek and its major tributaries.

A major component of the overall Quittapahilla Creek Watershed Assessment was Field Reconnaissance Surveys of 65 miles of the five major tributaries to Quittapahilla Creek. The data collected during these surveys was utilized to identify problem areas and potential restoration projects in the subwatersheds. That data is now twenty years old.

In 2017, the Quittapahilla Watershed Association began conducting Field Reconnaissance Surveys of the subwatersheds to document current stream reach conditions and determine the continued need for restoration/stabilization along the subwatershed reaches. These surveys have been conducted by college students serving as summer interns funded by grants secured by the QWA and more recently funded by the Lebanon County Conservation District and trained by Clear Creeks Consulting. The 2024 surveys focused on Beck Creek and Bachman Run. The stability problems on the Formanek Property were identified during these surveys (Figure 1).

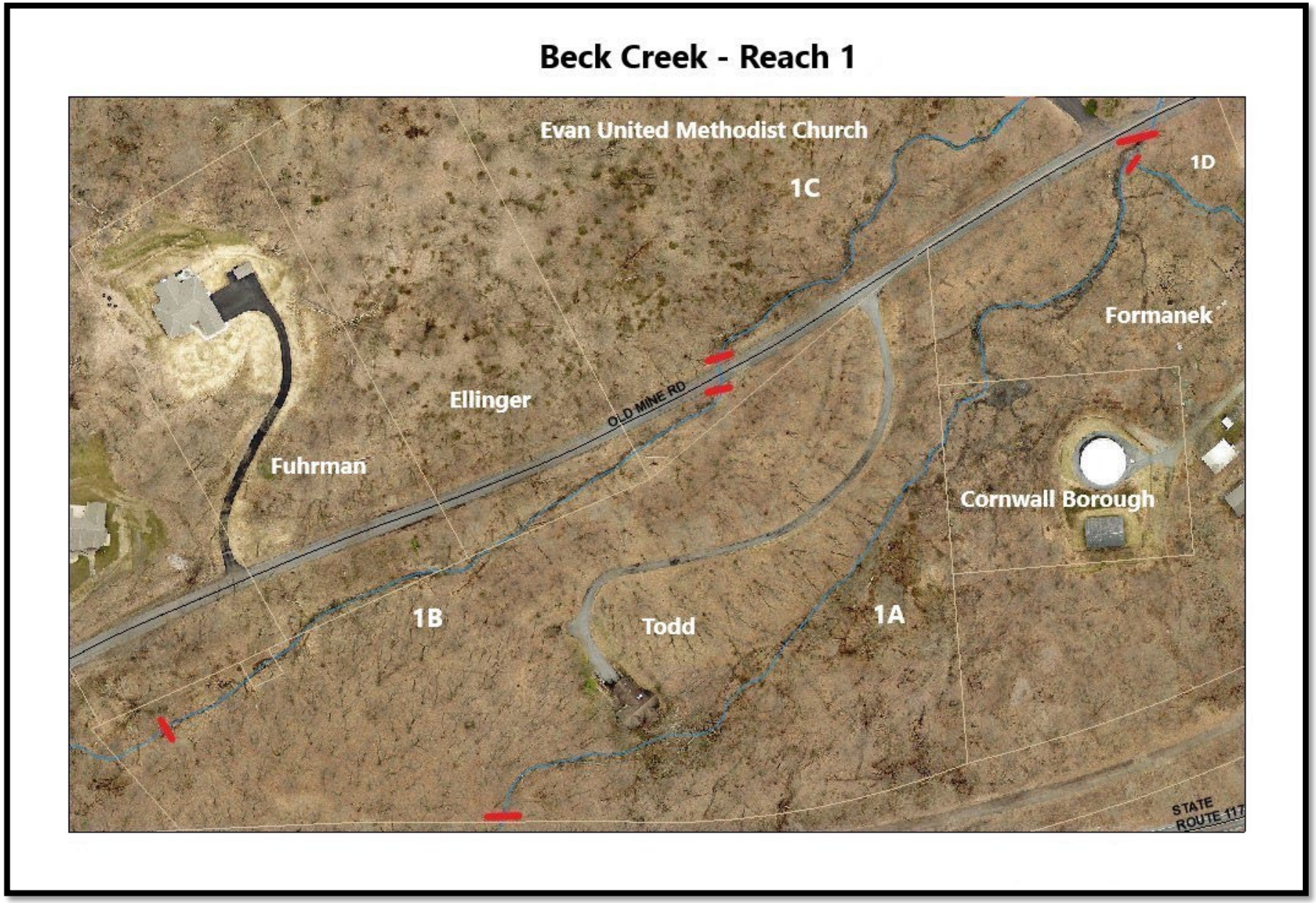

Figure 1 – Area of Upper Beck Creek included in 2024 Field Reconnaissance Survey

Problems Identified

1. There are remnants of an old dam and pond on the property. Historically the pond served as a reservoir that was part of the Cold Spring Water Supply for Cornwall Borough. According to Borough staff the embankment was intentionally breached when it was no longer needed.
2. There is evidence that attempts were made to stabilize the breach gap with boulder revetment. Unfortunately, these efforts were unsuccessful. Over the years, the condition of the breach gap has deteriorated. Current conditions include severe and active head-cuts, erosion along the near vertical left and right cut faces of the breach gap, and large trees growing along the top of the embankment. Unless stabilization measures are implemented the following conditions will worsen:
   a. The head-cuts will migrate upstream through the breach gap and across the old pond bottom. This will erode and drain the high value emergent and scrub-shrub wetland along the old the pond bottom.
   b. The combination of the eroding cut faces and the large trees will lead to catastrophic failure of the sections of the embankment nearest the breach gap.
   c. Both situations will contribute a significant volume of sediment to downstream reaches along Beck Creek.
3. In addition, the bulk of the baseflow passing through the old pond is conveyed by a terracotta drain pipe instead of along the channel.
4. Downstream of the dam is an incised channel with eroding banks and undercut trees along banks.

The existing conditions are documented in Figures 2 – 4 and Photos 1 – 12.

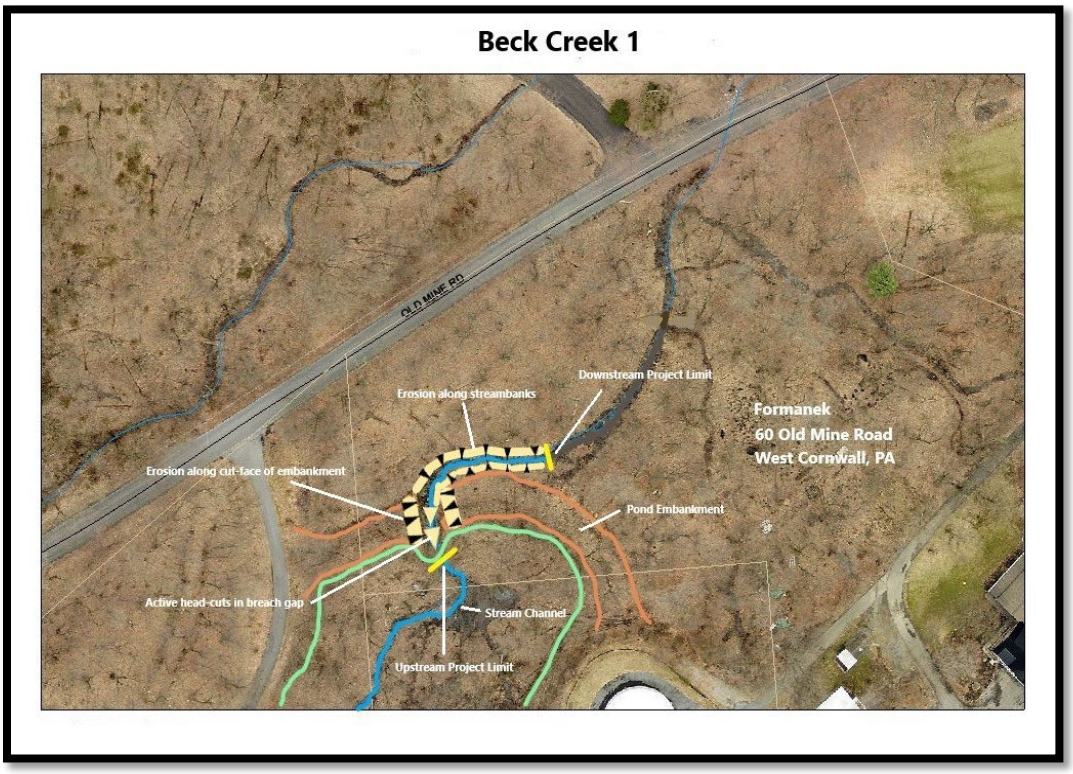

Figure 2 – Stability Problems Identified

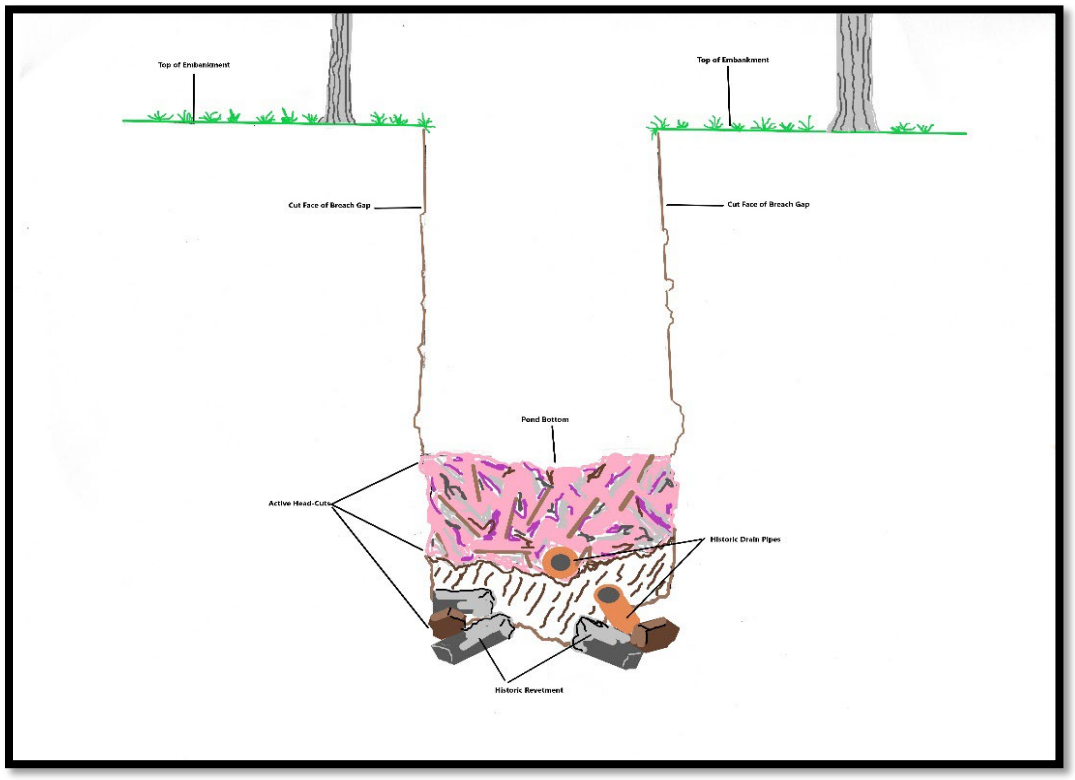

Figure 3 – Cross-Section of Embankment at Breach Gap

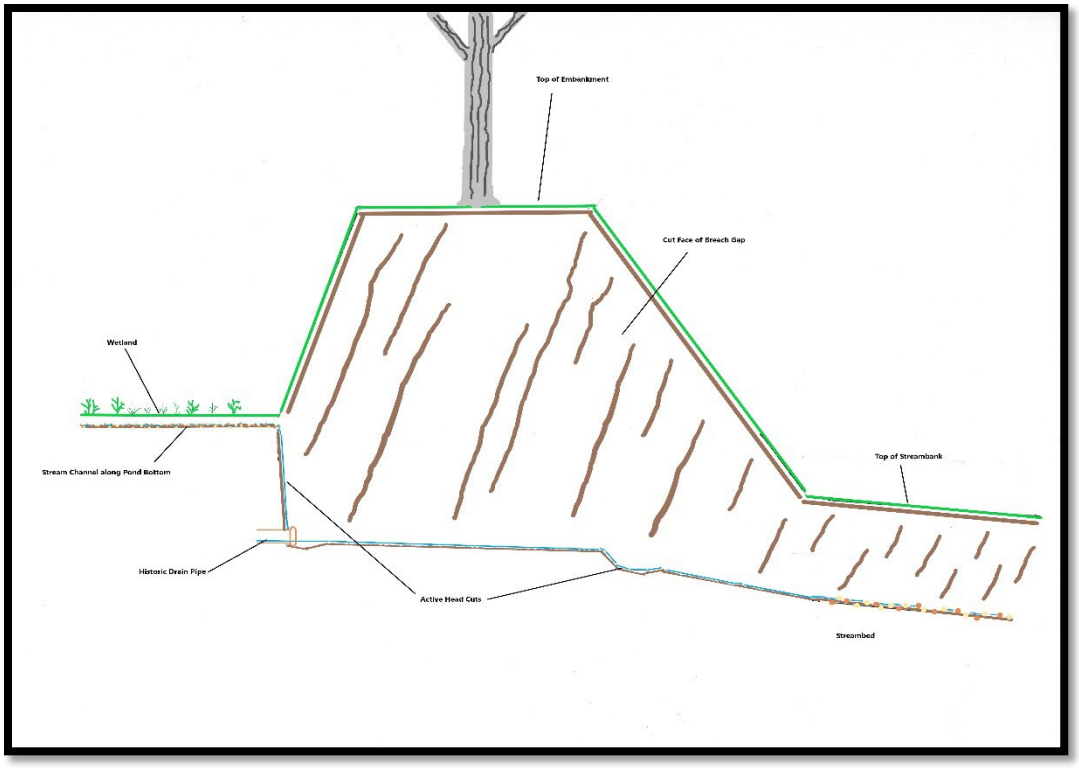

Figure 4 – Profile of Embankment at Breach Gap

Beck Creek 1 - Photos (5/30/2024)

Photos 1 and 2 - Stream channel and emergent/scrub-shrub wetland along old pond bottom

Photos 3 and 4 – Stable stream channel meandering across old pond bottom

Photos 5 and 6 - Stream channel and emergent/scrub-shrub wetland along old pond bottom

Photos 7 and 8 - Pond embankment (red arrows) with breach and severe head-cut (exposed drain pipe)

Photos 9 and 10 – Drain pipe at base of head-cut with boulder revetment in foreground

Photos 11 and 12 – Eroding channel downstream of old pond

Stabilization Approach

1. Stabilizing the Pond Embankment and Head-Cuts would involve:
   a. Removing the large trees from the top of the embankment.
   b. Widening the gap to reduce the potential for future erosion. This would be accomplished by grading the cut faces to a more stable angle of repose and stabilizing with grasses and coir matting.
   c. Removing or sealing the old-drain pipe.
   d. Stabilizing the active head-cut in the breach gap. This would be accomplished by backfilling the head-cut with a layer of clay, a layer of compacted soil backfill and installing a Boulder Cascade which is generally utilized for steeper stream reaches.
2. Stabilizing the Unstable Channel Downstream of the Dam would involve:
   a. Raising the streambed with a layer of compacted soil backfill and installing a series of Timber Boulder Step Pools.
   b. Grading and stabilizing banks along the channel in areas where there are no large bank trees.
   c. Planting the streambanks with native shrubs.

Concepts for the Stabilization Approach are shown in Figure 5 – 7. as well as Photos 13 – 16 showing completed projects that illustrate these approaches.

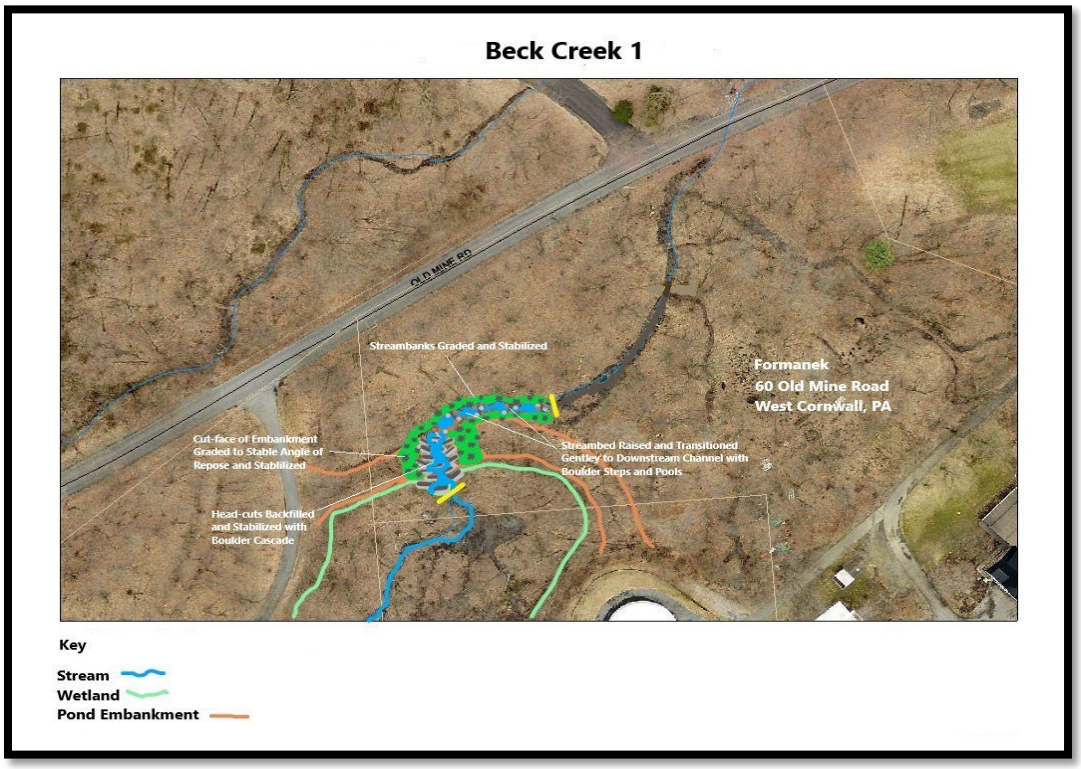

Figure 5 – Concept of Stabilization Approach

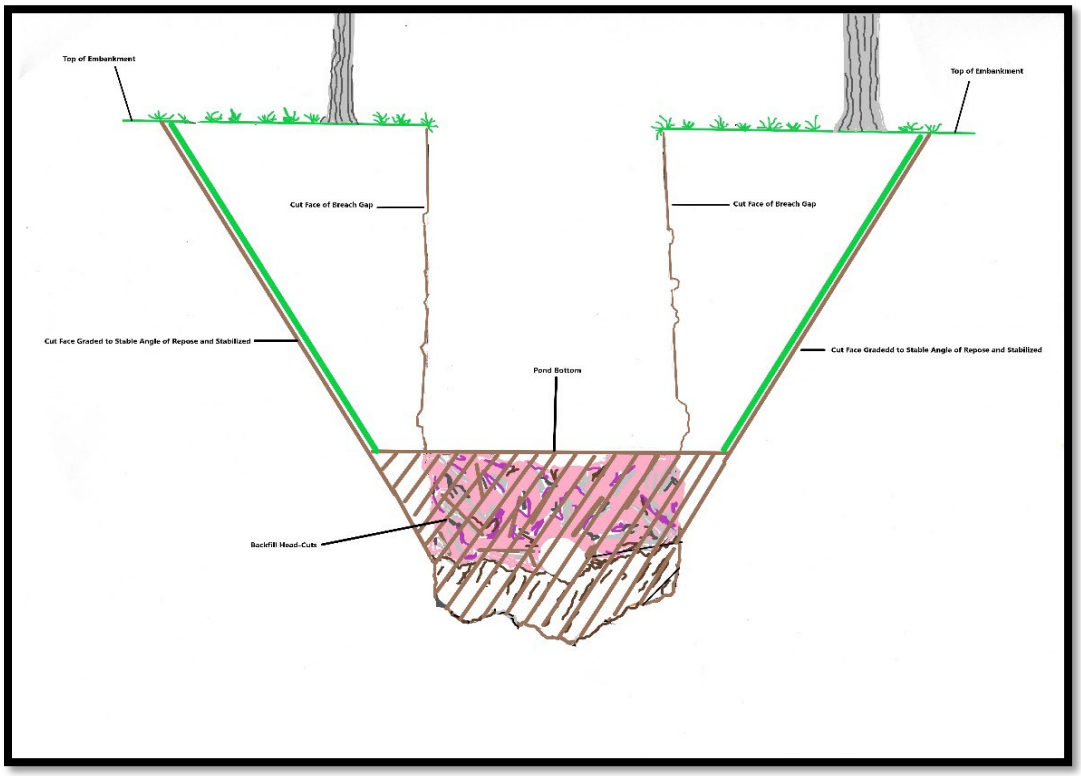

Figure 6 – Cross-Section Concept for Stabilization of Embankment and Head-Cuts

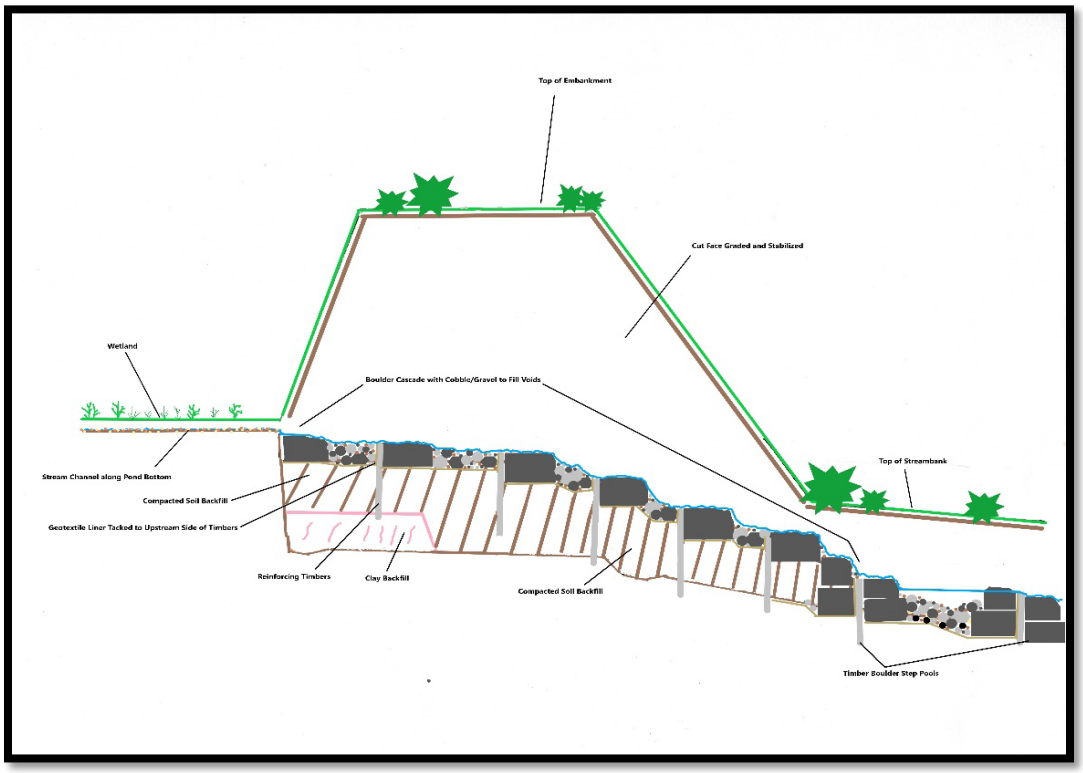

Figure 7 – Profile Concept with Boulder Cascade through Breach Gap and Timber Boulder Step-Pools along Stream Channel

Photo 13 –Example of Constructed Boulder Cascade

Photo 14 –Example of Constructed Boulder Cascade

Photo 15 – Example of Constructed Timber Boulder Step Pools

Photo 16 – – Example of Constructed Timber Boulder Step Pools

CAP 2025 Project 2 – Beck Creek 1 Budget

Task	Budget
Topographic Survey and Base Maps	$6,500.00
Design Plans including Plan View, Longitudinal Profile, Typical Cross-Sections, Structure Details, and E&S	$10,500.00
Permitting – GP-1, GP-3 and E&S	$4,400.00
Construction – Grading, backfilling, installation of structures, matting, seeding and plantings.	$159,000.00
Redlined As-Built Plans	$4,300.00
Total	$184,700.00

This budget was submitted by Aquatic Resource Restoration Company, the low bidder, in the Competitive Bid-RFP process for this Project.

Doc Fritchey Trout Unlimited will be the Project Sponsor. They are requesting $4,600.00 for Grant Administration and Construction Contract Management.

Beck Creek 1 - Application Summary

1. Receiving Stream Name: Beck Creek
2. Proposed BMPs and Quantities: Non-urban Stream Restoration including Breached Dam Stabilization – 50 feet and Gully Stabilization – 150 feet
3. CAP Action Item: Action 2.3 Pursue regional stream and wetland restoration projects that provide additional benefits to multiple communities and MS4s.
4. Project Readiness – Project Design, Permitting and Implementation will occur in Less than 18 Months.
5. Project Summary
    a. Description of Current Conditions – See attached Detailed Project Description Narrative with Aerials and Photos
    b. How BMPs will Improve Current Situation - See attached Detailed Project Description Narrative with Aerials and Photos
    c. Added Value to Community – Improve water quality by reducing sediment and nutrient loadings to downstream stream reaches; eliminating a public safety issue, promoting education and knowledge of restoration efforts in the community.
    d. Other Projects in the Watershed: This is the second of 19 projects planned in the Beck Creek watershed that will restore approximately 14,486 linear feet of unstable stream channels.
    e. Any Preceding Projects: Beck Creek 6 – Stream and Floodplain Restoration Project includes 2,000 linear feet of stream and floodplain restoration, creates 5.15 acres of wetlands, 10.2 acres of riparian buffer, water quality treatment for 15.5 acres of cultivated fields and 2.34 acres of upland wildlife habitat.

Lebanon County Conservation District Countywide Action Plan (CAP) Grants 2025
Project Bids and Grant Requests Summary

Contractor	Project	Total Cost
Resource Restoration Group (RRG)		
	Gingrich Run 1	$204,325.00
	Beck Creek 1	$194,175.00
	Total Cost	$398,500.00
Aquatic Resource Restoration Company ARRC)		
	Gingrich Run 1	$211,200,00
	Beck Creek 1	$184,700.00
	Total Cost	$395,900.00

Low Bid

Lebanon County Conservation District CAP 2025 Grant Requests

Gingrich Run 1
Design, Permitting and Construction - RRG Bid - $204,325.00
Administration - Doc Fritchey Trout Unlimited - $5,108.00
Total Grant Request - $209,433.00

Beck Creek 1
Design, Permitting and Construction - ARRC Bid - $184,700.00
Administration - Doc Fritchey Trout Unlimited - $4,600.00
Total Grant Request - $189,300.00

Total Project Costs - $398,733.00