

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



Proposed Formanek Property - Beck Creek 1 Project Information

January 2025



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

Proposed Formanek Property - Beck Creek 1 Project Information

Prepared for

Doc Fritchey Trout Unlimited

Quittapahilla Watershed Association

and

Lebanon County Conservation District

Prepared by

Clear Creeks Consulting, LLC

January 2025

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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).

Beck Creek - Reach 1

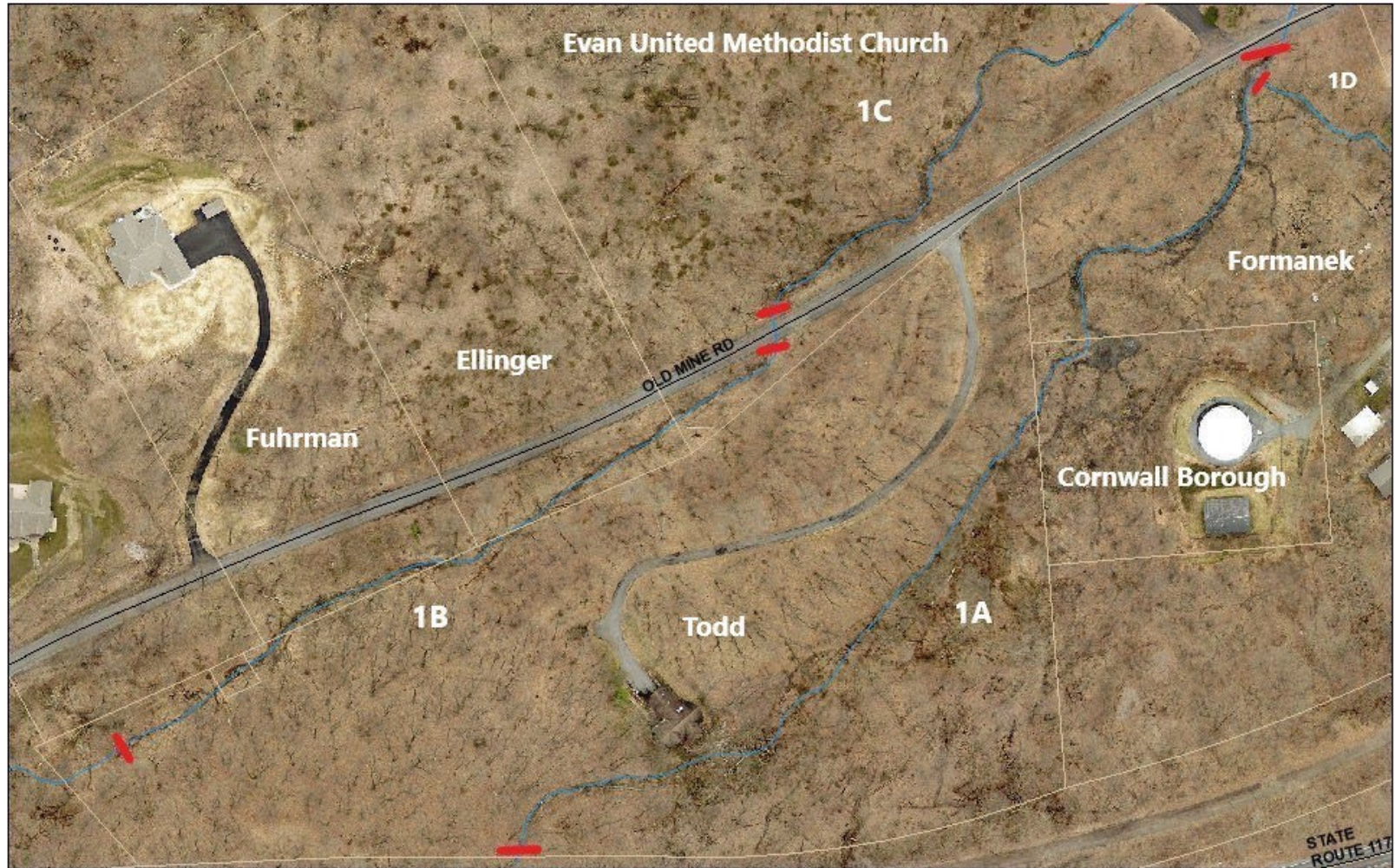


Figure 1 – Area of Upper Beck Creek included in 2024 Field Reconnaissance Survey

Existing Conditions and Problems Identified

1. The drainage area at the downstream end of the Project Area is 55.8 acres. The channel conveys a perennial baseflow. A high quality emergent and scrub-shrub wetland has developed across the old pond bottom.
2. 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.
3. 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.
4. In addition, the bulk of the baseflow passing through the old pond is conveyed by a terracotta drain pipe instead of along the channel.
5. Downstream of the dam is an incised channel with eroding banks and undercut trees along the banks.

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

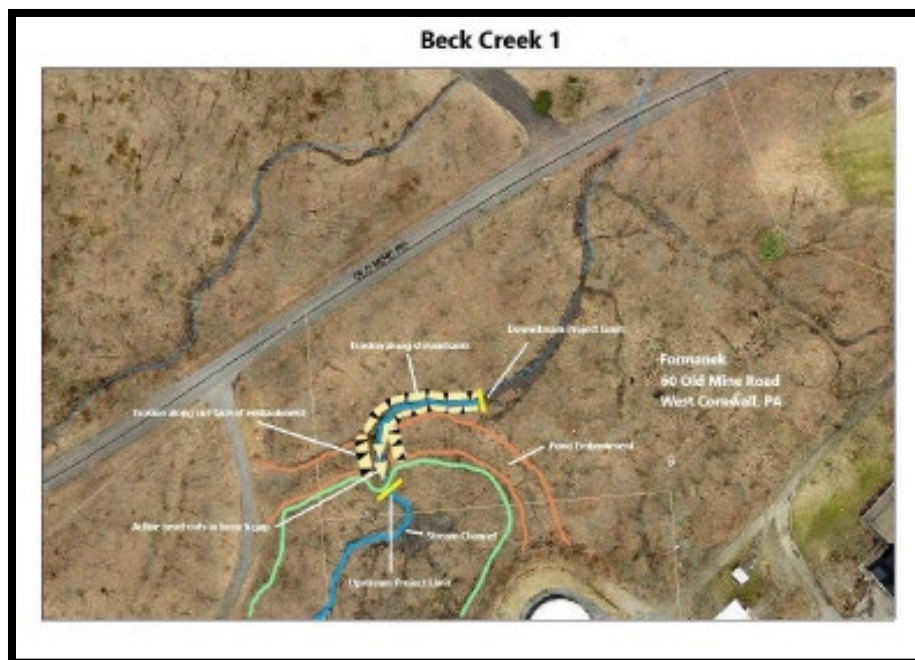


Figure 2 – Stability Problems Identified

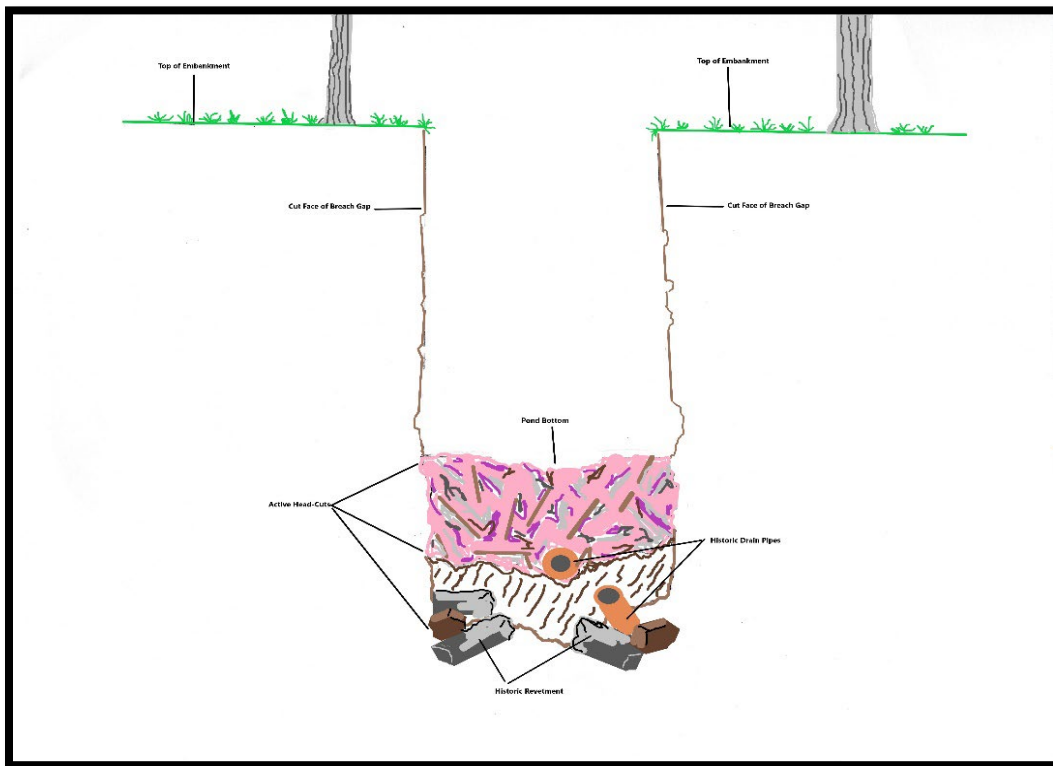


Figure 3 – Cross-Section of Embankment at Breach Gap

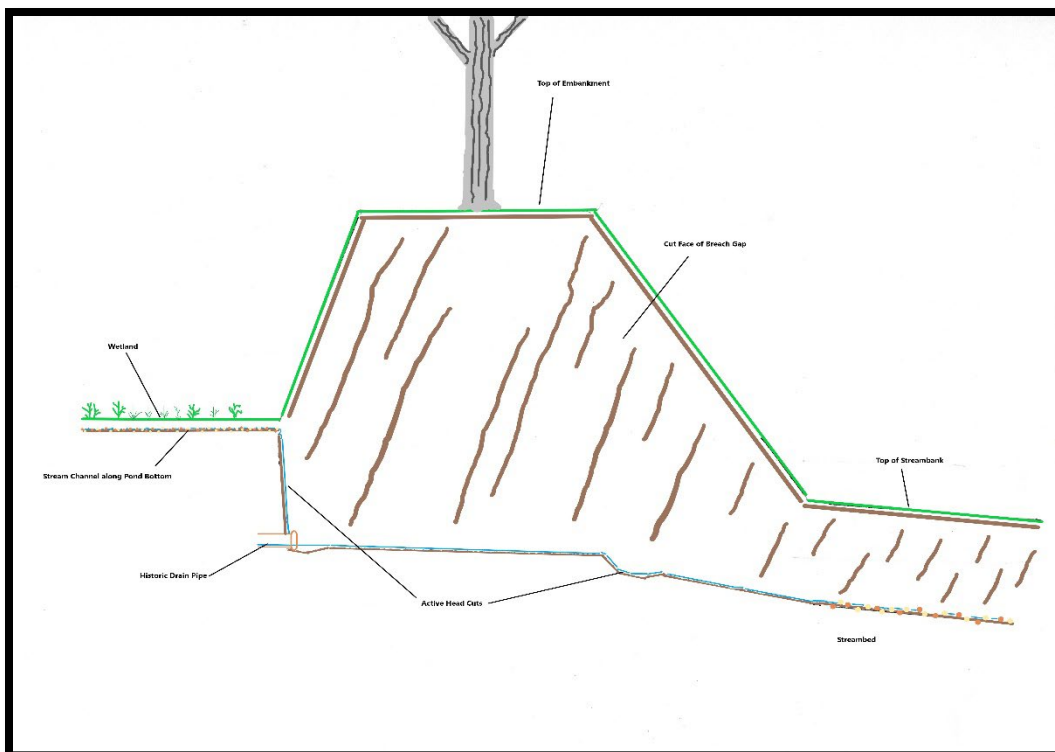
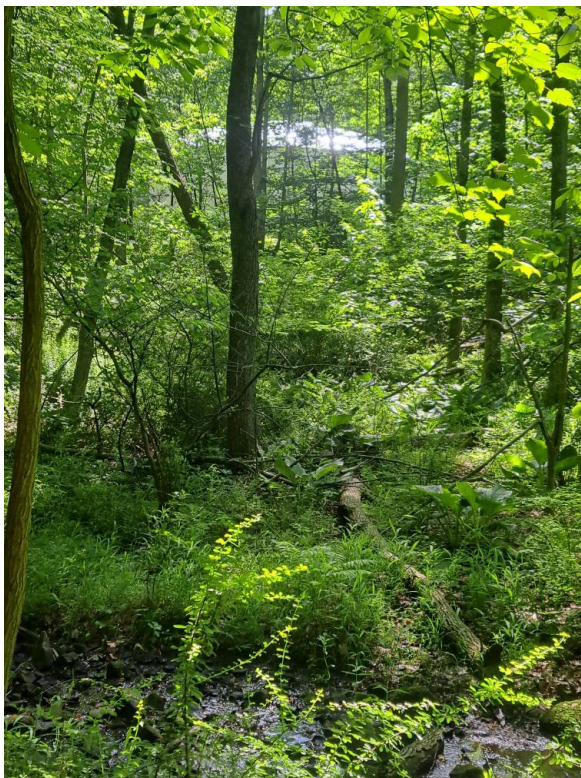


Figure 4 – Profile of Embankment at Breach Gap

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

Estimates of Existing Sediment and Nutrient Loadings

Evaluating the need for and success of sediment and nutrient reduction efforts requires accurate estimates of existing and post-implementation pollutant loadings. Most practitioners agree that actual loadings of sediment and nutrients should be determined through a comprehensive water quality monitoring and sediment discharge monitoring effort, as well as geomorphic assessments that survey and resurvey permanent cross-sections. However, this approach is very costly and resource intensive.

Recognizing these constraints, the U.S. Environmental Protection Agency, Pennsylvania Department of Environmental Protection and Maryland Department of the Environment have been utilizing alternative approaches based on research efforts in the Chesapeake Bay Watershed. These have included Default Values for Sediment and Nutrient Loadings based on Per Linear Foot of Stream Channel and the Field Doc Watershed Modeling Tool. These approaches provide a reasonable planning level tool. However, they do not provide the detailed assessment data related to actual stream channel conditions needed for design and implementation level evaluations of existing conditions and anticipated sediment and nutrient reduction efforts.

Rosgen (2001) developed Bank Assessment for Nonpoint Source Consequences of Sediment (BANCS) to provide that data. The BANCS Method quantitatively predicts streambank erosion rates based on two commonly used bank erodibility tools: the Bank Erosion Hazard Index (BEHI) and Near Bank Stress (NBS). Rosgen demonstrated that significant relations exist between stress in the near-bank region (NBS), stream bank erosion potential (e.g. BEHI ratings), and measured stream bank erosion rates. Utilizing relations

developed for Colorado and Wyoming streams he has been able to predict, with a high degree of confidence, erosion rates for stream banks utilizing field data on near bank stress and bank erosion potential. Utilizing the BANCS Method, the U.S. Fish and Wildlife Service, Chesapeake Bay Field Office developed predictive regressions for use in the Chesapeake Bay Watershed (2007). A Unified Guide for Crediting Stream and Floodplain Restoration Projects in the Chesapeake Bay Watershed (2020) outlined the currently accepted procedures for verifying that stream and floodplain restoration projects are meeting their stated pollutant reduction objectives. The BANCS Method is an integral component of that process.

The BANCS Method was used to evaluate existing conditions and anticipated sediment reduction for the Gingrich Run 1 proposed project stream reaches. Data was collected to assess bank erosion potential (i.e., bank height-to-bankfull height, bank angle, rooting depth, rooting density, surface protection, bank soil material, etc.) to determine erosion potential (BEHI ratings). In addition, stress in the near-bank region was estimated for the stream banks along the project reaches. Utilizing the data collected and the near bank stress and bank erosion potential relations (Table 3) developed by U.S. Fish and Wildlife Service (2007) predicted erosion rates were calculated for the stream banks evaluated within the project area.

Estimates for current sediment loadings were developed based on the existing bank height, length of stream bank evaluated, and the predicted erosion rates. As Table 1 shows, there are an estimated 345,000 pounds or 172.8 tons of sediment contributed annually to Beck Creek from streambank erosion from the proposed project reaches. These estimates do not include contributions from streambed erosion.

Table 1 - Beck Creek 1 - Sediment Loading Calculations

Bank ID	BEHI Rating	Near Bank Stress	Bank Area (Length x Height Square Feet)	Predicted Erosion Rate (Feet/Year)	Predicted Sediment Loading (Cubic Feet/Year)	Predicted Sediment Loading (Pounds/Year)
Reach 1						
1	Very High	High	50 x 15 = 750	1.6	1,200.0	108,000
2	Very High	High	50 x 15 = 750	1.6	1,200.0	108,000
Reach 2						
1	High	High	150 x 4 = 600	1.2	720.0	64,800
2	High	High	150 x 4 = 600	1.2	720.0	64,800
					Total Pounds	345,600
					Total Tons	172.8

Note; If the active head-cut eroding through the dam embankment is not repaired it will continue to erode in an upstream direction through the high value wetland in the old pond bottom until it reaches the boulder field approximately 300 feet upstream. The following calculations provide an estimate of the additional sediment that will result from this streambed erosion upstream of the old dam.

Given the existing 7 ft drop over the large head-cut in the embankment gap, a gully width of 10 ft and headward erosion of 300 ft, the future erosion would contribute an additional 7 ft x 10 ft x 300 ft = 21,000 ft³ x 90 lbs/cubic ft = 1,890,000 lbs or 945 tons of sediment to downstream reaches. This estimate does not include the additional sediment contributed by a catastrophic failure of the dam embankment.

As outlined in A Unified Guide for Crediting Stream and Floodplain Restoration Projects in the Chesapeake Bay Watershed (2020) procedures for calculating nutrient loadings require that soil samples be collected from the streambanks being evaluated and a chemical analysis of those soil samples be conducted to determine nitrogen and phosphorus concentrations. Given the cost of sampling and analysis the evaluation of the streambanks along the Beck Creek project reaches nutrient loadings were calculated using the Default Values for nitrogen and phosphorus per linear foot of stream channel. This method indicates that 200 LF x 0.075 lbs TN /LF or 15.0 pounds of nitrogen and 200 LF x 0.068 lbs TP /LF or 13.6 pounds of phosphorus are contributed annually from the Beck Creek Project reaches.

Stabilization Approaches

1. Stabilizing the Pond Embankment 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 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. Alternative 1
 - 1) Raising the streambed with a layer of compacted soil backfill and installing a series of timber boulder step pools to provide grade control and energy dissipation.
 - 2) Grading and stabilizing banks along the channel in areas where there are no large bank trees.
 - 3) Planting the streambanks with native shrubs.
 - b. Alternative 2
 - 1) Raising the streambed with a layer of compacted soil backfill and installing a riffle-pool sequence.
 - 2) Grading and stabilizing banks along the channel in areas where there are no large bank trees.
 - 3) Planting the streambanks with native shrubs.

Concepts for the Stabilization Approaches are shown in Figure 5 – 8. as well as Photos 13 – 18 showing completed projects that illustrate these approaches.

Beck Creek 1

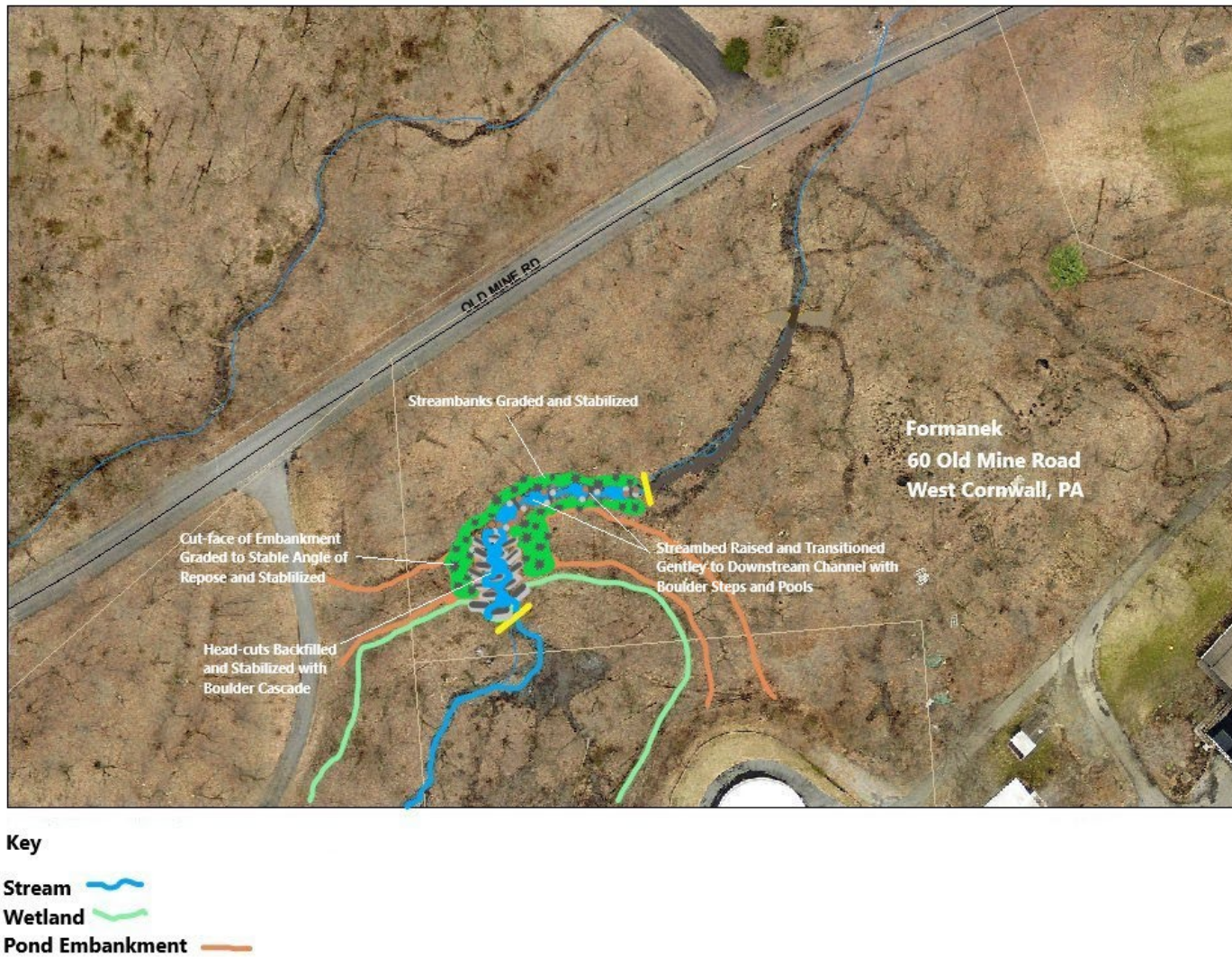


Figure 5 – Concept of Stabilization Approach

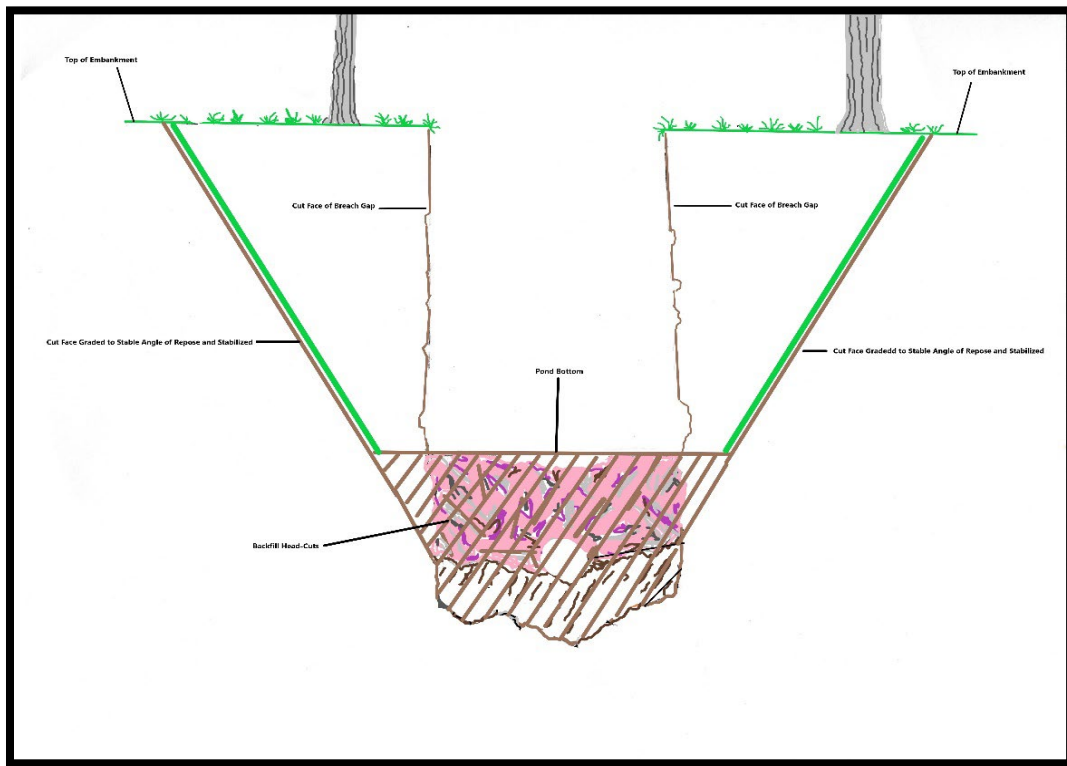


Figure 6 – Cross-Section Concept for Stabilization Alternatives 1 and 2

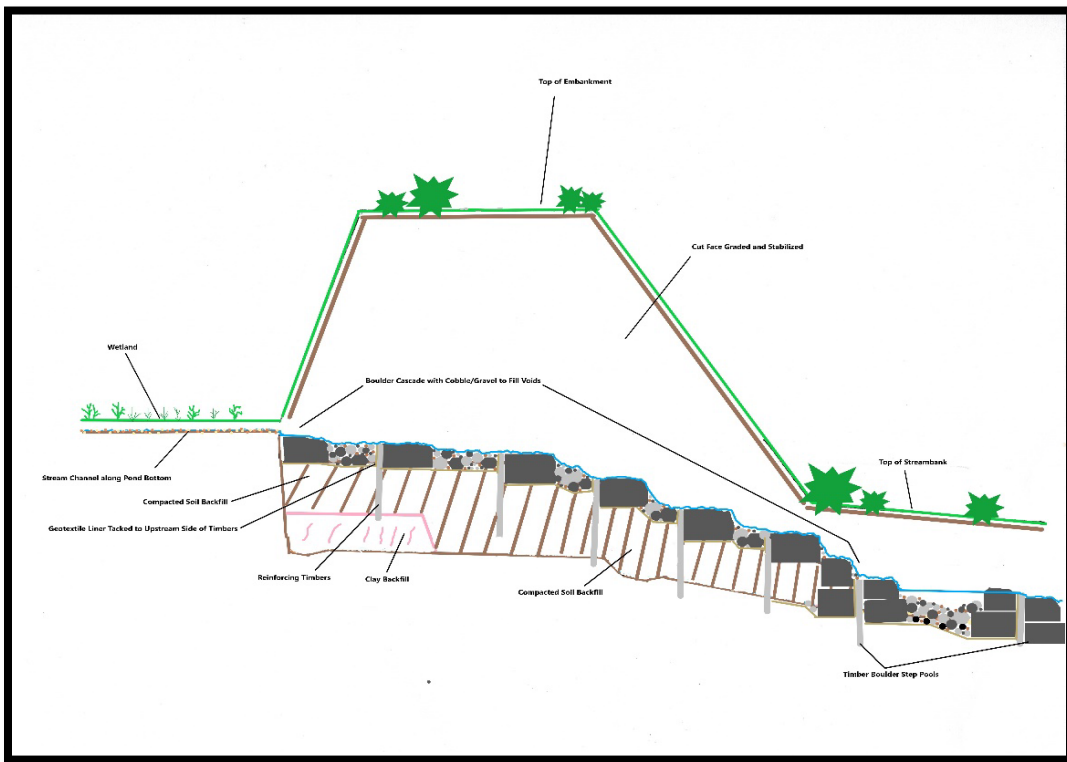


Figure 7 – Alternative 1 Profile Concept with Boulder Cascade through Breach Gap and Timber Boulder Step-Pools along Stream Channel



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

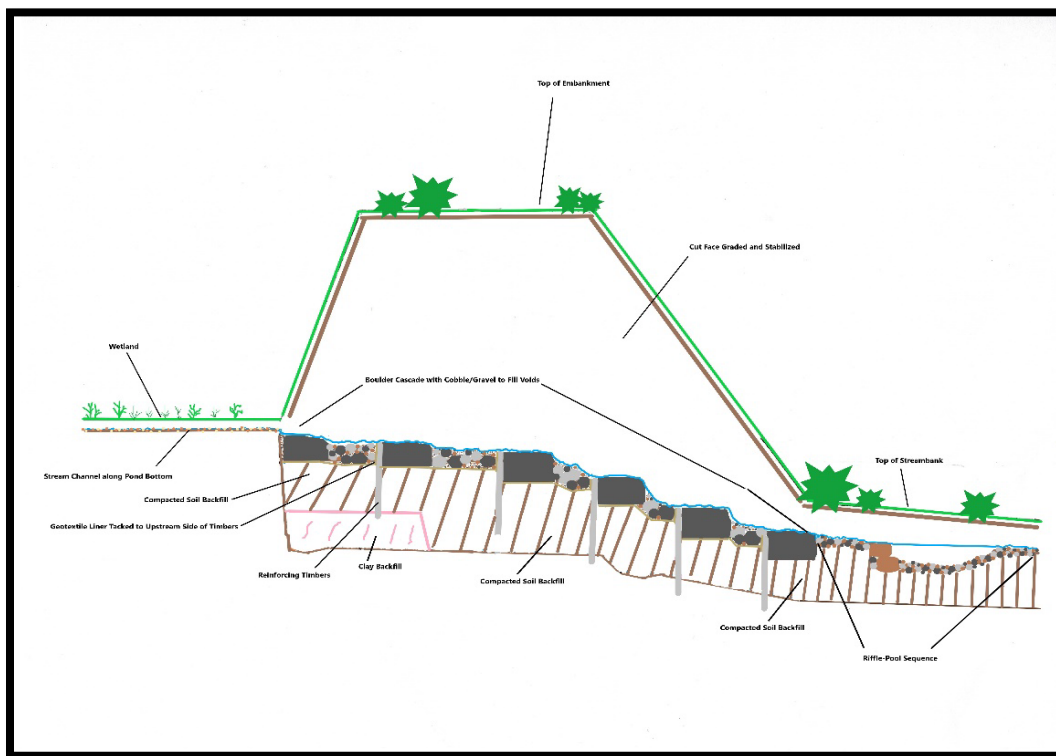


Figure 8 - Alternative 2 Profile Concept with Boulder Cascade through Breach Gap and Riffle-Pool Sequence along Stream Channel



Photo 17 – Example of Constructed Riffle-Pool Sequence



Photo 18 – Example of Constructed Riffle-Pool Sequence

Community Benefits to Formanek Property – Beck Creek Project

1. Sediment Loading Reduction

The Project will significantly reduce sediment conveyed to downstream reaches on neighboring properties. As a consequence, the stream channels and small lake at Camp Gretna currently impacted by significant sediment loadings will recover with time or future rehabilitation efforts.

2. Environmental Justice

The Project scores fairly well, 51 to 60 percentile. Accordingly, it fulfills a critical role in this challenge – ensuring the fair treatment and meaningful involvement of all people with environmental policies, regulation, and laws; as well as with respect to the identification of environmental issues that affect the most vulnerable communities.

3. Groundwater Recharge Potential

The Project scores in the highest quantile for this benefit. As such, it contributes by providing critical year-round hydrology to the wetland system in the old pond bottom, as well as the stream reaches downstream of the pond. It should be noted that the reservoir that existed prior to the dam breach served as a critical element in the water supply that served Cornwall Borough.

4. Preventing the Loss of a High Quality Wetland Resource

If the active head-cut eroding through the dam embankment is not repaired it will continue to erode in an upstream direction through the wetland in the old pond bottom until it reaches the boulder field approximately 300 feet upstream. This will result in the total loss of this high quality wetland and its accompanying recharge value.

5. Public Safety

The sediment and debris that currently collects along the upstream side of the culvert beneath Old Mine Road routinely creates a maintenance issue. If the active head-cut eroding through the dam embankment is not repaired it will continue to erode. The large trees on the embankment, as well as the volume of soil in the eroding embankment present not just a maintenance issue, but the potential for flooding and closure of Old Mine Road. If the current erosion results in a catastrophic failure of the remaining embankment the trees and large volume of soil could cause a total blockage of the culvert beneath the road. Repairing the embankment and backfilling and stabilizing the gully will eliminate this potential public safety issue.

CAP 2025 Project 2 – Formanek Property - Beck Creek 1 Budget

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

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

Grant Request - \$184,700.00

Grant In-Kind Match

Doc Fritchey Trout Unlimited

1. Administration and Contract Management - \$4,600.00
2. In-Kind Match - \$4,600.00

Clear Creeks Consulting

1. Site Visit to conduct stream reach data collection and office analysis and data summary – \$1,800.00
2. Landowner Coordination and Site Visits - \$1,200.00
3. Contractor Coordination, Bid Documents, Site Visit, and Bid Review - \$2,400.00
4. Grant Application and Supporting Documentation Preparation - \$6,200.00
5. Design Review and Comments - \$800.00
6. Construction Inspections Site Visits - \$4,000.00
7. In-Kind Match - \$16,400.00

Total In-Kind Match - \$21,000.00

Formanek Property - Beck Creek 1 Schedule

Task	Completion (Days)
1. Topographic survey and Base Maps	NTP - 35
2. Design Plans, Cross-Sections, Details, E&S	36 - 85
3. Permitting	86 – 310
4. Construction	311 - 356
5. Red-Line As-Built Plans	357 - 387

Assumptions

1. Durations assume a March 1, 2025 Start and May 1, 2026 Completion
2. Permitting can take 6 – 8 months
3. Total Project Duration 14 months

**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

Beck Creek 1

Design, Permitting and Construction - ARRC Bid - \$184,700.00

Total Projects Cost - \$389,025.00

Appendix

Landowner Approval Emails

Community Benefits Documents

Contractor Bid Proposals

Landowner Approval Emails

Beck Creek Dam Embankment Stabilization and Gully Restoration

Rocky Powell <clearcreeks1994@gmail.com>

Mon, Oct
21, 2024,
10:12 AM

To carlajean@live.com, Kara, Lee, Justin, Russ

Dear Mrs. Formanek,

As I explained when we spoke last Thursday, Kara Lubold with the Lebanon County Conservation District (LCCD) requested that I provide recommendations for restoration projects that LCCD can fund with their 2025 Countywide Action Program (CAP) Grants. She requested that I provide a narrative description of the project including photos and concepts no later than October 28th. Her deadline for submission of funding applications is October 31st.

Because I was already familiar with the stability problems on your property, I believe the project I am recommending would definitely benefit you and your husband as landowners. It would also benefit landowners downstream of your property, as well as Beck Creek in general, by reducing the significant sediment being washed from the old dam embankment and eroding stream channel. In order to move forward, we would need your approval.

As I also indicated when we spoke, I was visiting the site on Thursday with two contractors who will be preparing bids proposals for the design, permitting and construction of the proposed project. Both are highly qualified contractors that specialize in stream and pond stabilization and restoration.

Per your request, I prepared the attached narrative to provide you and your husband with the information you need to make an informed decision regarding your participation in this effort.

I look forward to hearing from you and hope that you both will find this as worthwhile an effort as I do.

Best regards,

Rocky Powell

Carla Formanek <carlajean@live.com>

Fri, Oct 25,
2024,
10:13 PM

To me, Kara, Lee, Justin, Russ

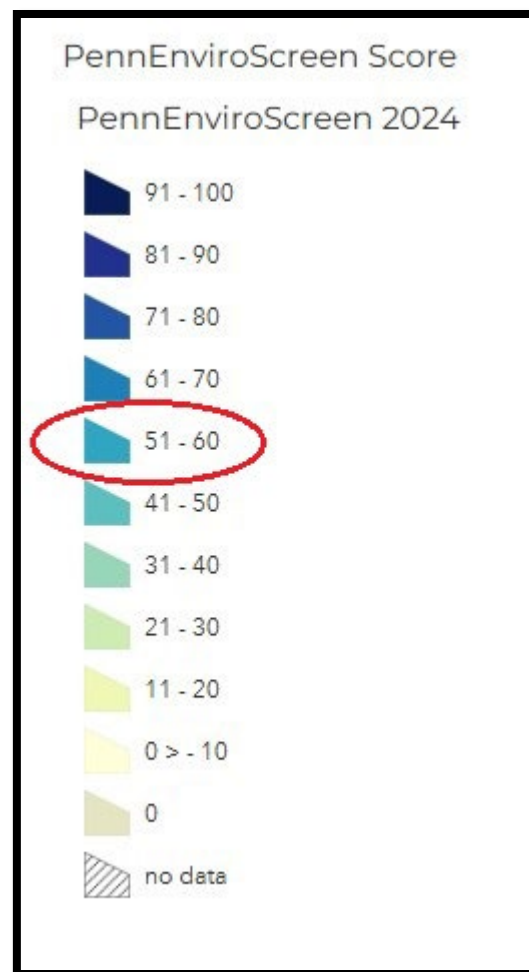
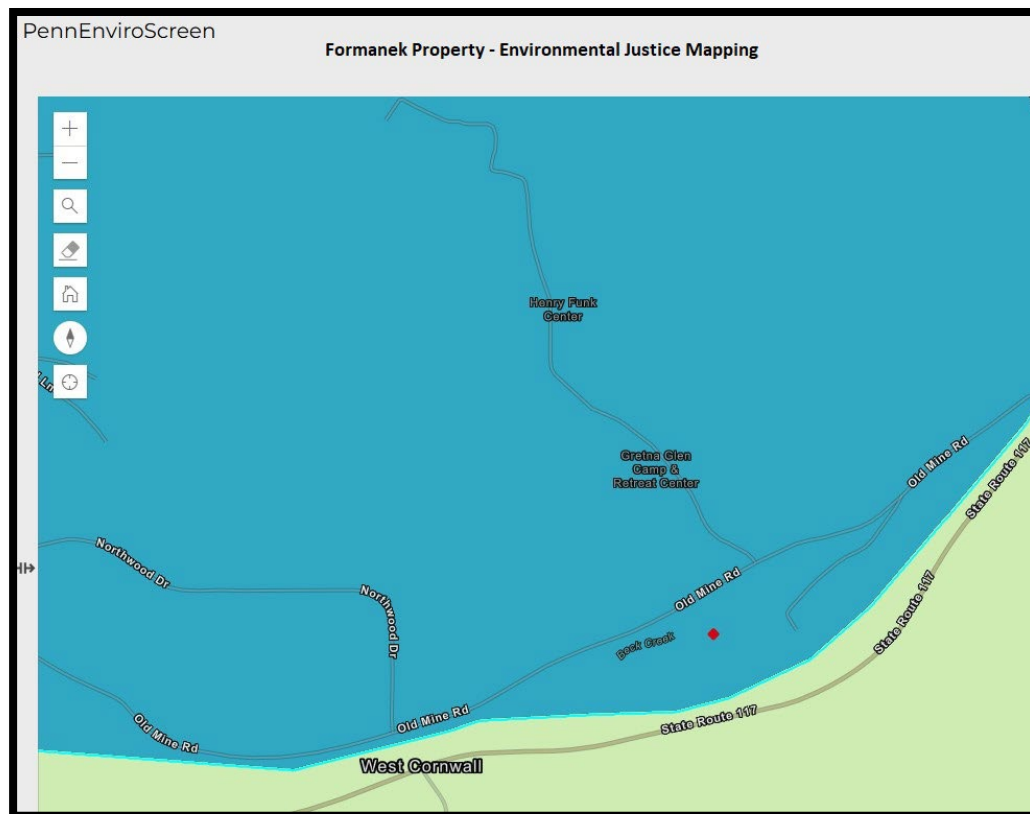
Hi Rocky!

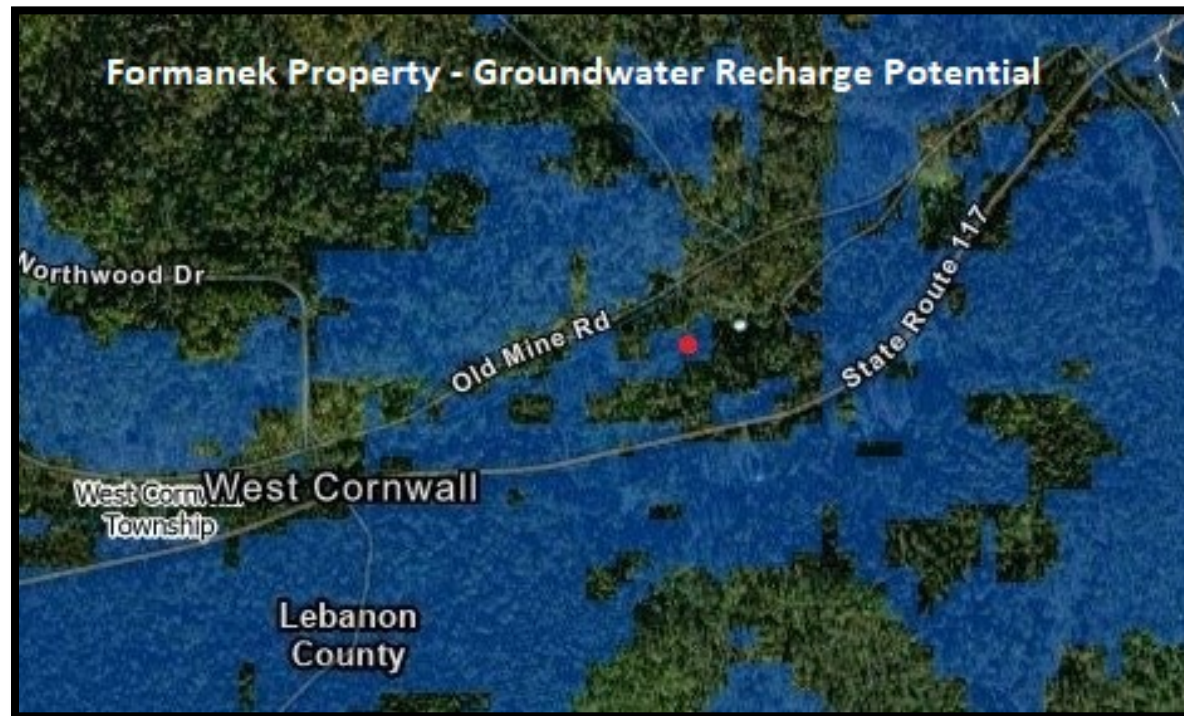
Thanks for sending over the plans. They look great. After talking with my husband, we'd like to give you the go ahead to move forward on this project. The only requests we have, is for us to keep the wood from the trees that are taken down, and we'd like for the stumps to be removed as well.

Overall this sounds like a great improvement, thanks for taking the time! Let us know what the next steps are.

Carla and Josh Formanek

Community Benefits Documents





Groundwater Recharge Locations ?

☒ **Highest Groundwater Recharge Potential (Highest Quantile)**

■ High

☐ **Groundwater Recharge Potential (Quantiles)**

■ High

■ Above Average

■ Average

■ Below Average

■ Low

SRBC | SUSQUEHANNA RIVER
BASIN COMMISSION
NY ■ PA ■ MD ■ USA | 4423 N. Front Street
Harrisburg, PA 17110-1788

Contractor Bid Proposals

10/22/2024 15:33
 KG24-029 Rocky - Beck Creek 1
 *** Kyle Gleissner

BID TOTALS

<u>Biditem</u>	<u>Description</u>	<u>Status - Rnd</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Bid Total</u>
10	Topographic Survey & Base Maps	U	1.000	LS	6,500.00	6,500.00
20	Design Plans, Longitudinal Profile, Cross Sections, Details, E&S	U	1.000	LS	10,500.00	10,500.00
30	Permitting	U	1.000	LS	4,400.00	4,400.00
40	Construction	U	1.000	LS	159,000.00	159,000.00
50	Redline As-Builts	U	1.000	LS	4,300.00	4,300.00
Bid Total =====>						\$184,700.00



AQUATIC RESOURCE RESTORATION COMPANY
 2433 SEVEN VALLEYS ROAD
 SUITE 202
 SEVEN VALLEYS, PA 17360
 717.428.4368 • FAX 717.428.9411
 WWW.ARRC.COM



October 26, 2024

Lebanon County Conservation District
2120 Cornwall Road, Suite 5
Lebanon, PA 17042

Re: Lebanon County Conservation District Countywide Action Plan (CAP) Grants 2025 – Design / Build Proposal

Dear Sir or Madam,

Resource Restoration Group, LLC (RRG) is pleased to submit this design / build proposal to the Lebanon County Conservation District ("LCCD") for Gingrich Run 1 and Beck Creek 1 as described in the document "Lebanon County Conservation District Countywide Action Plan (CAP) Grants 2025" for a lump sum price of **\$398,500.00** (Three Hundred Ninety Eight Thousand Five Hundred Dollars and No Cents).

RRG has 25 years of combined experience in environmental design and construction in the Mid-Atlantic region specializing in stream restoration, natural channel design, regenerative stormwater conveyance, living shoreline, shoreline stabilization, bio-retention and wetland creation. As a specialized ecological construction firm, RRG has the ability to deliver innovative, efficient, cost effective solutions to provide clients with the most sustainable, robust project maximizing functional lift and value.

RRG is excited to partner with LCCD in order to create a functional, aesthetically pleasing ecological enhancement project(s) and best management practices to treat and reduce harmful runoff from adjacent impervious surfaces. This reduction in volume is critical to minimize harmful pollutants entering the Chesapeake Bay. As conservation minded owners and restoration professionals, RRG has a vested interest in the successful completion of this project and others to aid in the restoration and enhancement of the Chesapeake Bay and the resources that lie within.

Enclosure(s):

1. Narrative (3 pages)
2. Scope Clarifications (1 pages)
3. Cost Tables (2 pages)

Please feel free to contact me with any questions or concerns.

Sincerely,

Ben Hutzell
Project Manager, Owner
P: 301-491-2386
www.RRGroup.us



NARRATIVE

Qualifications and Experience

RRG has 25 years of combined experience in environmental design and construction in the Mid-Atlantic region specializing in stream restoration, natural channel design, regenerative stormwater conveyance, living shoreline, shoreline stabilization, bio-retention and wetland creation. As a small firm, RRG has the ability to deliver innovative, efficient, cost effective solutions to provide clients with the most sustainable, robust project maximizing functional lift and value.



The staff of RRG have a deep knowledge of all industry standard practices used in the construction of stream restoration, natural channel design, regenerative stormwater conveyance, shoreline stabilization, bio-retention and wetland creation projects. RRG is extremely familiar and efficient with the installation of all in stream structures, including but not limited to, rock cross vanes, log rock J vanes, weirs, riffles, toe wood structure, cascades, boulder toe, breakwaters, low marsh, high marsh, soil lifts and bio engineering practices. Along with these specialized skills, RRG staff have expert knowledge in the maintenance of stream

flow and clean water bypass practices, low impact methods of access and travel through sensitive areas, tree and wetland protection practices and the installation and maintenance of all E&S measures used during the execution of these projects.

With over 100,000 linear feet of channel construction/ restoration experience, 60+ acres wetland construction and more than 300 acres of reforestation and wild grassland establishment in the Mid-Atlantic region, the staff of RRG have the background and knowledge needed to successfully execute and complete projects on-time and on budget.

Specific project experience can be provided in table format with client contact information as a separate enclosure. RRG urges the staff of LCCD to contact **any** of the references listed for a more personal description of RRG's quality of work, cleanliness, efficiency and character. RRG has worked with many municipalities, conservation districts and watershed groups throughout Maryland and Pennsylvania and continues to provide outstanding service to them and others throughout the Mid-Atlantic region.



Project Manager and Key Staff Experience



Daily onsite management will be conducted by Mr. Justin Hutzell. Mr. Hutzell has over 20 years of field experience supervising and constructing stream restoration projects, wetland creations and enhancements, regenerative stormwater conveyance projects as installing a variety of best management practices. Also, Mr. Hutzell has 3 plus years experience of major riparian buffer/ floodplain reforestation and native upland meadow establishment projects. Mr. Hutzell has acted as construction manager and/or field supervisor during his entire time in this field, he has developed and implemented many special skills pertaining directly to stream restoration and wetland construction projects.

Mr. Hutzell is a certified marine contractor in Maryland, has attended Level 1 and Level 2 of Wildland Hydrology's geomorphology training and is certified as a responsible personnel from the Maryland Department of Environment.

With full-time, direct on-site involvement throughout all of his projects, he has accumulated a vast knowledge of successful techniques and BMP's to effectively complete some of the most difficult and basic projects.

Operations, Labor and sub-contractor coordination will be done by project foreman Mr. Logan Fischer. Mr. Fischer started with RRG in 2019 but is no stranger to specialized ecological work. Prior to his work with RRG, Mr. Fischer served as a foreman on a different ecological construction crew where he managed a variety of projects and employees for the previous 6 years. Mr. Fischer came to RRG with a profound understanding of project management and the necessity of understanding efficiency. During his time with RRG, Mr. Fischer has been involved in a variety of projects including: bioretention retrofits, rain garden installations, natural channel design stream restoration, regenerative stormwater conveyance, shoreline protection, riparian planting as well as general excavation services. Mr. Fischer is responsible for the oversight of all operators, field technicians and erosion and sediment controls while on site. Mr. Fischer holds a bachelor's degree in Environmental Science with a program emphasis on Hydrology from Juniata College and is a certified responsible person in charge from Maryland Department of Environment.

Project design, management and coordination will be the responsibility of Mr. Ben Hutzell. Mr. Hutzell has been involved in water resource planning and ecologic engineering projects for more than 16 years and has been the co-owner of Resource Restoration Group, LLC for the past 9 years. He has been directly responsible for the geomorphic assessment, hydraulic analysis, restoration design and construction of more than 40,000 linear feet of stream and wetland projects throughout the Mid-Atlantic and Southeastern regions of the U.S. Mr. Hutzell has also been invited to serve as an instructor for the past 9 years at Level 1 through Level 3 of Wildland Hydrology's training workshops. Mr. Hutzell is fluent in a variety of water resource design methodologies and has been active in the field for the entirety of his career.

Mr. Hutzell holds a bachelor's degree in Environmental Analysis and Planning and a certificate in Ecosystem Restoration. He has attended Levels 1 – 4 of Wildland Hydrology's training as well as holding his responsible personnel card from the state of Maryland.



Subcontractors

Planting will be implemented by the crew of Ecological Restoration and Management, Inc. (ER&M). ER&M is a full-service commercial landscape and ecological restoration contracting firm, located in central Maryland. Since



Providing innovative solutions to conserve, restore and enhance our natural resources.
Tracys Landing, MD, www.RRGGroup.us

1983, ER&M, a certified small business, has been an acknowledged leader in the field of “ecological restoration” construction, successfully creating, restoring, and enhancing various and vital native ecosystems throughout the mid-Atlantic and Great Lakes regions. Over the past 35 years ER&M has earned a reputation for partnering with clients to provide a wide range of quality services. From the beginning, their shared interest in and concern for our fragile natural environment, along with their commitment to quality, has driven them to go above and beyond what is expected.

During the past 3+ decades, ER&M has successfully completed thousands of individual projects, ranging in size from small freshwater wetland construction, to several hundred feet of stream channel relocation, to 20 acres of reforestation, to 80 acres of tidal wetland restoration, to 60+ acres of coastal dune restoration, and everything in between. For over two decades, ER&M has also applied this same drive and dedication to superior commercial landscape installations.

Geotechnical services (as necessary) will be provided by Hillis-Carnes. Hillis-Carnes Engineering Associates is a multi-specialty engineering firm with advanced capabilities in geotechnical and geostructural engineering, environmental consulting, specialty construction, construction materials engineering and testing, and third-party inspections. If there’s construction, they’re there — schools, stadiums, highways, housing developments — in any location throughout the Mid-Atlantic and beyond.

RRG has worked previously with Hillis-Carnes when geotechnical services are required. They’re extensive range and availability make them extremely responsive and aid in efficiency of RRG’s work





SCOPE CLARIFICATIONS

[X] RRG pricing is based on the site walk as well as site descriptions found on the document developed by Clear Creeks Consulting.

[X] RRG will mark and work around identified utilities, however, RRG has not included nor is responsible for any utility relocation. RRG will notify LCCD immediately if a utility is found to implicate design or implementation.

[X] Price included existing and proposed condition HEC RAS analysis.

[X] Price does not include bulk density testing of existing soils.

[X] Price assumes a projects can be designed, permitted and installed in 2025 calendar year.

[X] No deer protection is included in the planting task.

[X] Price includes a guarantee of 80% tree/shrub survival, and 50% live stakesurvival at the end of the one- year warranty period. Potential one-time replacement. RRG cannot be held responsible for mortality due to acts beyond our control (vandalism, flooding, deer predation, inadequate owner maintenance, etc.).

[X] Price does not include maintenance or monitoring.

[X] Price includes 1-year guarantee on materials and workmanship.

[X] Tax is included.

[X] Price valid for 30 days.



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

Proposed Projects

1. Gingrich Run 1 - Gully Restoration Project

Landowner

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

Problem

1. Remnants of small concrete dam in upper section.
2. Deeply incised channel with severely eroding banks and multiple active head-cuts along channel.
3. Undercut, leaning and fallen trees along banks.

Stabilization Approach

Stabilize 390 linear feet of unstable channel by:

1. Removing remnants of 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 and transitioning from upstream to downstream with timber/boulder steps and pools.
5. Planting streambanks with native shrubs.

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-3, E&S (If required)	\$10,750.00
Construction – Grading, backfilling, installation of structures, matting, seeding and plantings.	\$153,450.00
Redlined As-Built Plans	\$8,000.00
Total	\$204,325.00

***Design task includes cost to perform existing and proposed condition HEC RAS analysis.**

BH

2. Beck Creek 1 – Dam Removal and Gully Restoration Project

Landowner

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

Problem

1. Breach pond embankment in upper section.
2. Incised channel with eroding banks.
3. Undercut trees along banks.
4. Active head-cut migrating upstream through gap in old pond embankment threatening to drain emergent and scrub-shrub wetland along old pond bottom.

Stabilization Approach

Stabilize 200 linear feet of unstable channel by:

1. Removing large trees from pond embankment.
2. Widening the gap in the pond embankment by grading the the side slopes to a stable angle of repose to reduce the potential for future erosion.
3. Crushing or sealing the under-drain pipe.
4. Stabilizing the active head-cut in the gap of the breached embankment with a boulder spillway.
5. Grading and stabilizing alternating banks along downstream channel section to preserve large bank trees if practicable.
6. Planting streambanks with native shrubs.

Task	Budget
Topographic Survey and Base Maps	\$9,750.00
Design Plans including Plan View, Longitudinal Profile, Typical Cross-Sections, Structure Details, E&S (If required)	\$20,325.00*
Permitting – GP-3, E&S (If required)	\$9,250.00
Construction – Grading, backfilling, installation of structures, matting, seeding and plantings.	\$145,900.00
Redlined As-Built Plans	\$8,950.00
Total	\$194,175.00

***Design task includes cost to perform existing and proposed condition HEC RAS analysis.**

BH