



PROJECT WORKPLAN

Please see the Growing Greener Plus Program Guidance for instructions and what information to include in each section.

1. Project Summary

The Cone Creek Watershed Association is requesting \$104,000 to fund design and permitting necessary to implement restoration practices in the Cone Creek watershed at three high priority sites listed in the Cone Creek Watershed Restoration Plan. The projects are located in Environmental Justice Area Census Tract 10 according to DEP's EJ Viewer. The following projects are proposed:

Site #101. Blue Project. 890 linear feet (LF) of streambank stabilization and approximately 1.45 acres of riparian buffer establishment on Hoff Creek.

Site #146 Green Project. 185 LF of streambank stabilization, approximately five acres of riparian buffer establishment, and 220 LF of bioswale retrofit on Cone Creek main stem.

Site #257 Red Project. 2,172 LF of streambank stabilization and approximately 3.5 acres of riparian buffer establishment on unnamed tributary (UNT) to Cone Creek (1st UNT North).

All riparian buffers will be 35 ft. wide. When constructed, the projects will reduce nutrient and sediment pollutant loads. The estimated pollutant load reductions are 3,839 lbs./yr. of nitrogen, 773 lbs./yr. of phosphorus, and 327 tons/yr. of sediment using Model My Watershed. Besides implementing the Cone Creek Watershed Restoration Plan, the project will help implement the Chesapeake Bay Phase 3 WIP within the Dauphin Countywide Action Plan.

2. Environmental Needs

a. Sources and Causes of Impairment

The sources of impairment for priority sites on Hoff Creek, Main Stem Cone Creek and 1st UNT North Cone Creek are agriculture. The causes are nutrients and siltation from sediment.

b. TMDLs/Alternative Restoration Plans

The Cone Creek is an impaired watershed for which a TMDL has been developed (Cone Creek Watershed TMDL 2018).

c. Baseline Conditions

The Cone Creek Watershed (HUC 020503051010) is 53.2 square miles and spans portions of Phin, Land and Leb counties in the Piedmont region of Pennsylvania. Cone Creek originates near Mt. Davis, in Leb County and flows generally southwest to the confluence with the Hanna River near Falls, Pennsylvania. There are approximately 60.5 miles of stream within the watershed. There are ten subwatersheds within the Cone Creek Watershed, including tributary subwatersheds for Little Cone Creek, Hoff Creek, Gall Run, Rills Run, Inch Run and two unnamed tributaries in the lower watershed. The designated uses are water supply, recreation and aquatic life. The designated uses for aquatic life are trout stocking and migratory fishes.

The watershed is dominated by deciduous forest (35%), cultivated crops (20%), and pasture/hay (16%) with smaller areas of developed land, mostly developed open space and developed, low intensity. Forestland is concentrated in the headwaters and the southern boundary of the watershed. The watershed is bisected by US 86 (Turnpike), and State Highways 530 and 583. More intense development tends to be clustered in the lower portion of the watershed, near the state highways. Animal agriculture in the watershed is predominantly broiler chicken (380,000) and hogs (10,500), along with approximately 3,000 dairy cattle.

An overview of impaired stream reaches in the Cone Creek Watershed is provided below. According to the 2024 Integrated Report, the stream sections within the watershed are impaired by agricultural practices and need agricultural best management practices, such as cattle exclusion, livestock crossings, streambank stabilization, and riparian buffers. The project will address the sources of nonpoint source pollution from agriculture, be they current runoff sources (eroding stormwater swales, livestock pasturing), or addressing sources from a legacy of generations of agricultural land use and production (unstable eroding streambanks, lack of riparian forest cover).

At all sites, the riparian vegetation was assessed to be “marginal to poor in quality” lacking shrub and tree stratum in areas. The right bank consisted of greater tree and shrub cover that included Eastern cottonwood, sugar maple, and red osier dogwoods; whereas the right bank consisted of dense herbaceous vegetation dominated by Japanese knotweed.

Cone Creek Watershed

Designated Use	Stream Name	Causes & Sources
Aquatic Life	Hoff Creek	Nutrients and Siltation from sediment - Agriculture
Aquatic Life	Cone Creek Main Stem	Nutrients and Siltation from sediment - Agriculture
Aquatic Life	1 st UNT North	Nutrients and Siltation from sediment - Agriculture

d. Existing Plans Guiding Implementation

The project is ideally suited for Growing Greener grant funding because of the Cone Creek Watershed Restoration Plan created in 2018 by the Land County Conservation District. This proposal addresses high priority sites all of which is listed in the plan. Besides implementing the plan, the project has the co-benefit of implementing the Chesapeake Bay Phase 3 WIP in the Land Countywide Action Plan with action items 1.2 - Agriculture – Streambank Stabilization and 1.3 - Buffers - Buffer Implementation.

3. Funding Justification

a. Pennsylvania Nonpoint Source Management Plan (2019 Update)

Goal 2: Improve and protect the waters of the Commonwealth from nonpoint source pollution associated with agricultural activities.

- 2.13 Continue to implement PA’s Chesapeake Bay WIP over the next five years.

Goal 3: Improve and protect the waters of the Commonwealth from nonpoint source pollution associated with stormwater runoff, as well as streambank and shoreline degradation.

- 3.4 Implement 30 new, state-funded riparian buffer, stream restoration and/or stormwater management projects annually for the next five years.
- 3.8 Plant and protect 2,500 acres of riparian forest buffer over the next five years.

b. Chesapeake Bay Phase 3 WIP Countywide Action Plans

The project is located within the Chesapeake Bay watershed and will implement the Chesapeake Bay Phase 3 WIP in the Land Countywide Action Plan with action items 1.2 - Agriculture – Streambank Stabilization and 1.3 - Buffers - Buffer Implementation. An email from Chesapeake Bay Watershed Countywide Action Plan Coordinator is uploaded in the eGrants application.

c. Growing Greener Priorities

The proposed project will design and permitting necessary to implement restoration and conservation practices in the Cone Creek watershed at three high priority sites listed in the Cone Creek Watershed Restoration Plan, including riparian buffers, streambank stabilization and bioswale retrofit. The project will meet the following Growing Greener priorities:

- **BMP Implementation:**
 - Design, install and maintain agricultural BMPs to reduce nitrogen, phosphorus, and sediment pollutant loads.
 - Implement agricultural and stormwater BMPs, stream restoration, bank stabilization to reduce runoff volumes, increase infiltration, improve water quality, and assist in future flood prevention and climate resiliency in support of the Pennsylvania 2021 Climate Action Plan.
 - Restoration or protection of designated uses of water, according to water quality standards in 25 Pa. Code Chapter 93. Projects that directly address causes and sources of impairment as listed in DEP's 2024 Integrated Water Quality Report.
- When constructed, the three projects will be located in an Environmental Justice Area.

d. Previous Growing Greener Grant Work Performance

The proposed project builds upon a successful riparian buffer, stream bank fencing and off-stream watering project implemented using funds under from a 2018 and 2021 Growing Greener grants, along with Conservation Reserve Enhancement Program (CREP). Within the last five years, the Cone Creek Watershed Association has successfully managed and completed two Growing Greener grants totaling approximately \$320,000 with low administrative costs (3%) and a high matching funds (\$160,000 or 50%). The watershed association also has a successful track record with managing grants and working with landowners to implement and maintain agricultural BMPs. In 2019, the watershed association received a \$212,000 grant from the National Fish and Wildlife Foundation and regularly partners with the county conservation district, DEP's regional watershed manager and the Chesapeake Bay countywide action plan team. Since 2004, six individual stream restoration phases have been successfully completed both upstream and downstream of this proposed project area.

e. Pennsylvania Climate Action Plan

As per the information contained in the 2021 Pennsylvania Climate Action Plan, Pennsylvania's 6.9 million hectares (17 million acres) of forest land are estimated to sequester about 34 million MTCO₂e annually. Several natural strategies evaluated for their potential to increase the carbon sequestration of forestland in Pennsylvania, extending harvest cycles and reforestation showed the highest potential. Increasing the amount of forest land will help to improve air and water quality, as forests act as a natural filter for pollutants in the air and water sources. Increased tree cover can also mitigate the effects of urban heat islands, reducing the level of heat stress placed on individuals that live near forests. Forests are an important public resource that provide a source of recreation and enjoyment. In addition to the project's proposed streambank improvements, a riparian buffer will be established, enhanced, or restored as a result of this effort, when the project is constructed. Also, this project will provide individual landowners with better information about their ecologically based options and the rapidly changing location of floodplains as shifts in land use and climate affect erosion and flooding.

4. Environmental Justice

a. Community and Beneficial Impacts

This project is contained within the Environmental Justice Area – Census Tract 10, Land County. Census Tract 10 has a minority population of 20% and a poverty rate of 29%. When constructed, the project will provide increased nature-based recreational opportunities for residents and visitors alike.

The project area is located within walkable distance of many residents, as well as public access points located upstream and downstream of the proposed project area.

b. Community Involvement History

Since 2004, the Cone Creek Watershed Association and other project partners have facilitated the completion of six individual phases of stream restoration on Cascade Creek that is in the Cone Creek watershed. Two phases of restoration have occurred within Census Tract 10, located directly downstream of the project Area. Census Tract 10 has a minority population of 26% and poverty rate of 30%. Four additional stream restoration projects also have been completed. Although listed as an impaired waterway, the Pennsylvania Fish and Boat Commission (PFBC) has expressed interest in possibly trout stocking to Cascade Creek.

c. Facilitate Working with Underserved Population and/or Organizations

In addition to the increased recreational opportunities provided through the successful completion of this project, a portion of the proposed Blue site 101 area is adjacent to the high school. The watershed association has assisted the middle and high school for several years to implement PFBC's Trout in the Classroom and plans to partner with the high school's STEM and volunteer clubs to assist with the buffer planting and any fish stocking.

5. Partnerships and Match

a. Partner Coordination

Green Environmental Co. - \$5,000 - in-kind services for GIS mapping, budgeting, outreach and technical assistance.

Land County Conservation District - \$6,000 - in-kind services to participate in project meetings, assist with landowner coordination, assist with concept design, assist with final design and permitting.

Cone Creek Watershed Association - \$5,000 - in-kind services for project management, meetings and assist with design.

Red, Green and Blue Site Landowners \$5,000 – in-kind services to participate in project meetings, implementing updated agricultural plans and assist with design.

b. Match Sources

The match exceeds 15% program requirement and the match is already committed to and reserved for the project. Letters of commitment from project partners for identified match are included.

6. Scope of Work

a. Project Goals

This project will fund design and permitting necessary for BMPs, streambank stabilization, riparian buffer planting and bioswale retrofit, in the Cone Creek watershed at three high priority sites listed in the Cone Creek Watershed Restoration Plan. The following projects listed below are proposed.

Site #101 Blue Project. 890 linear feet of stream restoration and approximately 1.45 acres of riparian buffer establishment on Hoff Creek.

Site 101 involves some 890 feet of unnamed tributary and Hoff Creek restoration. A small, unnamed tributary flows into Hoff Creek on the property which in turn flows into the Cone Creek's main stem. Both stream reaches are for the most part in partial forest and fallow settings. Hoff Creek is one of three critical area subwatersheds identified in the Cone Creek Watershed Restoration Plan.

The watershed will work cooperatively with the landowner to stabilize streambanks and improve fish habitat and the riparian buffer. Banks will be stabilized through a means of naturalized structures such as mounds, log and rock vanes and cross-vanes, and rock and log deflectors. These structures will also improve aquatic habitat for fish and other aquatic organisms. The project sponsor will minimize the use of rock in its design.

There are several locations where bank erosion is severe, with vertical banks exceeding five feet. In these locations, some combination of floodway and bank regrading will likely be designed in concert with naturalized bank stabilization structures described above.

Because of the magnitude of reshaping some of the more severely eroded and damaged sections of stream channel, the watershed association and its consultant will prepare restoration designs, complete wetland delineations, adhere to PNDI (rare, threatened and endangered species) concerns, and complete the other related planning components necessary to apply for and receive the necessary permits.

Erosion and sedimentation pollution controls will also be planned. This will likely include the design of temporary access ramps and crossings to accommodate future construction. Strategic stockpiling and staging of materials and equipment will also be considered. A forest buffer comprised of native species will also be designed to accommodate the trees and shrubs already present. On average, this buffer will exceed 35 feet.

Site #146 Green Project. 185 linear feet of stream restoration, approximately .14 acre of riparian buffer establishment, and 220 linear feet of bioswale retrofit on Cone Creek main stem. Site 146 involves some 185 feet of restoration of Cone Creek's main stem. The project area is located within a pasture.

The watershed association will work cooperatively with the landowner to improve existing streambank fencing to protect the streambank. Streambank stabilization will likely include the design of a moundsill which provides both stabilization and overhead fish cover. Native trees and shrubs will also be planted to provide additional stabilization, habitat and water quality improvements.

A drainage ditch originates from a road culvert and proceeds on a direct path across the floodway to the bank where it "waterfalls" over the bank and persists on being an ever changing, chronic source of scour and erosion. The watershed association will design a suitably sized and stable bioswale to transport this flow from the road to the creek. Effort will be made to keep this swale vegetated and have infiltration properties as well so that a filtering benefit of the road runoff can be realized.

The watershed association and their consultant will design the necessary plans, complete municipal notifications letters, perform a wetland delineation, and fill out the necessary registration package forms to obtain the permits, likely GP-1 (Fish Habitat Improvement) and GP-4 (Outfall).

Site #257 Red Project. 2,172 linear feet of stream restoration and approximately 3.5 acres of riparian buffer establishment on unnamed tributaries to Cone Creek (1st UNT North).

Site 257 involves some 2,172 feet of unnamed tributary restoration. There are in fact two unnamed tributaries on this property. The larger, first unnamed tributary flows directly into the main stem of the Cone Creek, while the smaller, second tributary flows into the first tributary. Both tributary reaches are for the most part in pasture settings. The landowners had previously installed streambank fencing along the majority of the stream reaches which keeps livestock from freely wading and damaging banks and vegetation. However, there are several locations where bank erosion is moderate to severe and requires further intervention.

The watershed association will work cooperatively with the landowner to relocate the streambank fencing further away from the stream and/or install new fencing so as to provide a wider, more efficient forest buffer. Banks will be stabilized through a means of naturalized structures such as moundsills, log and rock vanes and cross-vanes, and rock and log deflectors. These structures will also improve aquatic habitat for fish and other aquatic organisms. Additional cattle crossings in combination with the streambank fencing will likely be designed to better accommodate streambank fencing and rotational grazing efforts. Livestock watering improvements will also be planned in the interest of further limiting cattle access to the streams. The project sponsor will minimize the use of rock in its design.

There are several locations where bank erosion is severe, with vertical banks exceeding nine feet. In these locations, some combination of floodway and bank regrading will likely be designed in concert with naturalized bank stabilization structures described above. The watershed association

and their consultant will prepare restoration designs, complete wetland delineations, adhere to PNDI (rare, threatened and endangered species) concerns, and complete the other related planning components necessary to apply for and receive the necessary permits.

Erosion and sedimentation pollution controls will also be planned as part of the design. This will likely include the design of temporary access ramps and crossings to accommodate future construction. Strategic stockpiling and staging of materials and equipment will also be considered. A forest buffer comprised of native species will also be designed. On average, this buffer will exceed 35 feet.

When constructed, the projects will reduce nutrient and sediment pollutant loads. The estimated pollutant load reductions are 3,839 lbs./yr. of nitrogen, 773 lbs./yr. of phosphorus, and 327 tons/yr. of sediment using Model My Watershed.

Summary Task Tables

The project will proceed to implement the following tasks and subtasks:

Task 1: Site #101, Blue Project Design and Permitting		
Subtask	Partner	Approx. Completion Date
1. Topo, stream survey, design, CADD	Environmental Consultant	April 2026
2. Permitting (restoration waiver, PNDI, PHMC)	Environmental Consultant	January 2027

Task 2: Site #146, Green Project Design and Permitting		
Subtask	Partner	Approx. Completion Date
1. Topo, stream survey, design, CADD	Environmental Consultant	April 2026
2. Permitting (GP1 and/or GP3, PNDI, PHMC)	Environmental Consultant	January 2027

Task 3: Site #257, Red Project Design and Permitting		
Subtask	Partner	Approx. Completion Date
1. Topo, stream survey, design, CADD	Environmental Consultant	April 2026
2. Permitting (restoration waiver, PNDI, PHMC)	Environmental Consultant	January 2027
3. Update conservation, manure management plans	Ag consultant	January 2027

b. Environmental Results and Pollutant Load Reductions

When constructed, the projects will reduce nutrient and sediment pollutant loads. The estimated pollutant load reductions are 3,839 lbs./yr. of nitrogen, 773 lbs./yr. of phosphorus, and 327 tons/yr. of sediment using Model My Watershed.

c. Monitoring

While the watershed association and partners are prepared to conduct any monitoring that are associated with permitting requirements for these projects, no specific monitoring tasks are proposed as part of this proposal. It should be noted that the Cone Creek Initiative has developed a comprehensive monitoring program that includes two permanent gauge stations maintained by

USGS, regular water quality sampling by the Land County Conservation District, macroinvertebrate sampling every five years by Land County Conservation District, and fish sampling every three years by the Leeb County Conservation District. These monitoring activities will continue watershed wide and will provide opportunities to track results of these and other conservation projects in the watershed.

d. Project Deliverables

Project deliverables for this proposal include the following:

1. Completed designs and permit applications submitted for all three projects.
2. Permits issued for all three projects.
3. Updated and Approved Nutrient and Manure Management Plans
4. Submission of all required interim progress reports.
5. Submission of final report

e. Project Schedule/Timeline

Estimated timeframe, not to exceed three (3) years.

Task	State and Completion Dates
Site #101 (Blue): Topo, stream survey, design, CADD	Oct 1, 2025 – April 1, 2026
Site #146 (Green): Topo, stream survey, design, CADD	Oct 1, 2025 – April 1, 2026
Site #257 (Red): Topo, stream survey, design, CADD	Oct 1, 2025 – April 1, 2026
Site #146 (Green): Permitting	April 1, 2026 – January 1, 2027
Site #101 (Blue): Permitting	April 1, 2026 – January 1, 2027
Site #257 (Red): Permitting	April 1, 2026 – January 1, 2027
Site #257 (Red): Update Nutrient and Manure Management Plans	April 1, 2026 – January 1, 2027
Submission of Final Report for Grant	February 2027

f. Landowner Situation/Interest

Signed landowner letters of commitment have been secured for all three landowners and are included with application.

g. Permits and/or Special Approvals

The watershed association will work to obtain all necessary permits, such as GP1 and/or GP3, PNDI, PHMC. Encroachment permitting for this work will likely involve a combination of GP-1 (Fish Habitat Improvement) and GP-4 (Outfall).

h. Operation, Maintenance and Repair/Replacement Plans

A general or draft OM&R plan will be developed for this project and included within the final report. The NRCS practice code lifespans of the proposed BMPs are 15 years for forest riparian buffers (Practice Code 391) and 20 years for stream restoration (Practice Code 580). However, when properly maintained in the early years of establishment pursuant to the OM&R plan, the lifespan of these practices should be much greater and have the opportunity to provide permanent water quality improvements.

i. Equipment

N/A. Since this is a design and permitting project, no equipment will be acquired.

j. Potential Conflicts of Interest Disclosure

There are no possible potential conflicts of interest relating to personal financial gains from the proposed project's implementation.

7. Contractor Provisions

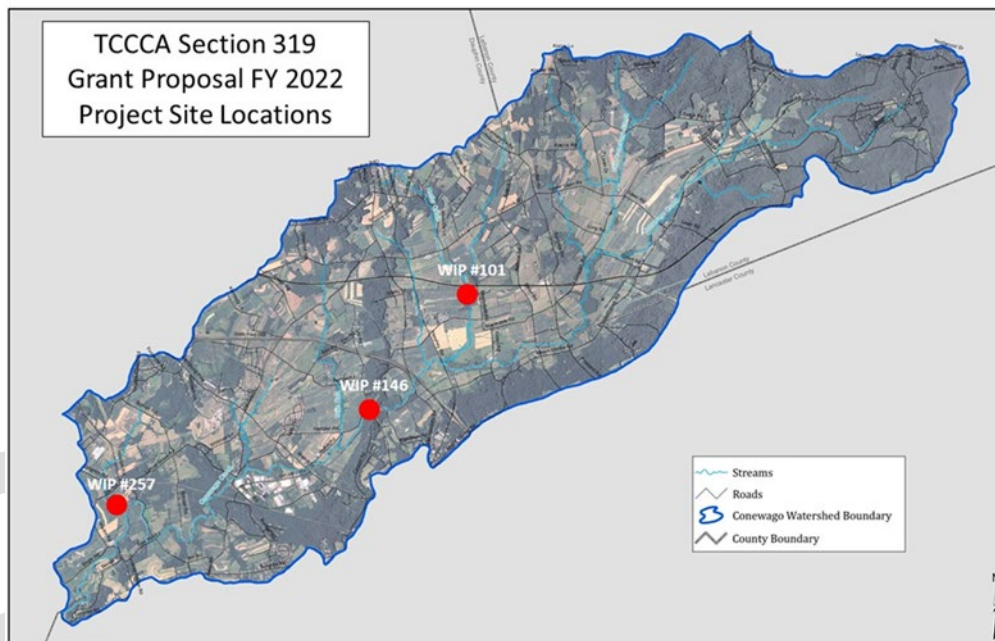
Watershed association will abide by the Commonwealth of Pennsylvania's Procurement Code. The project will be competitively bid to identify a consulting firm who will be contracted to complete the final design and engineering, facilitate required permitting, and oversee the projects construction. Updated conservation and manure management plans will be needed for the project on the Red farm. This will be undertaken by the farmer's existing agricultural consultant.

8. Project Data Submission

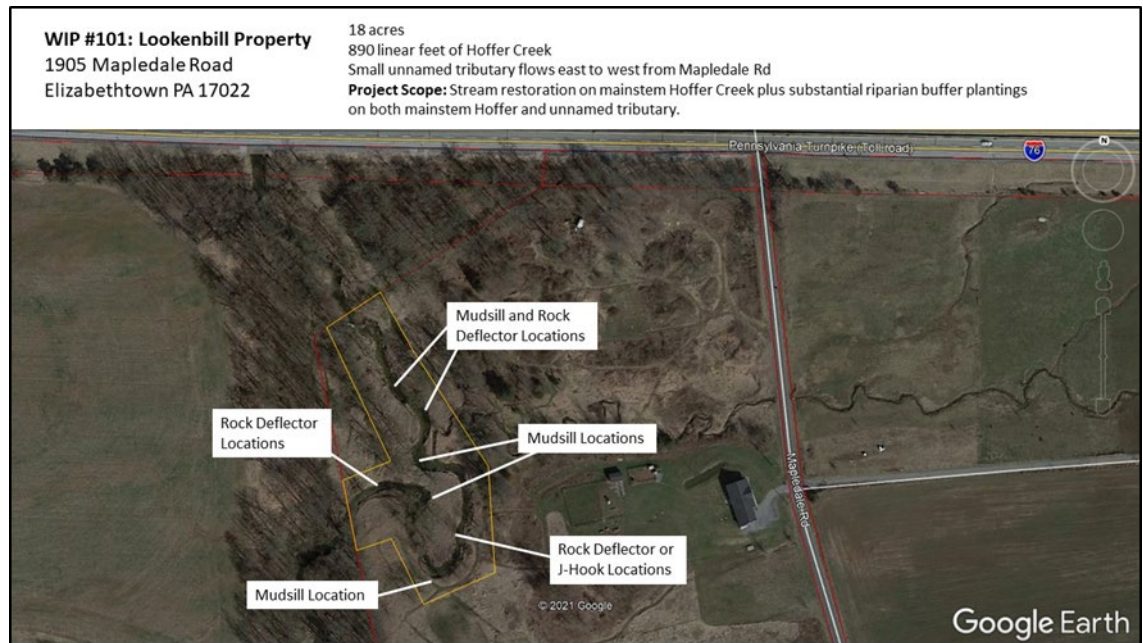
If fully funded, grantee will submit data, information, and applicable project deliverables. All submittals will be completed in accordance with DEP's Guidance for Data Management.

9. Photos and Maps

a. Project Location Map



b. Project Site Map



c. Project Site Photo(s)



Blue Site #101. Stream bottom highly impacted by siltation.



Red Site #257 without a riparian buffer.



Green Site # 146 Severe streambank erosion.