WILLIAMS RUN AMD RESTORATION PHASE III - NFHAP/EBTJV PROJECT

NFHAP Funding Requested:	$75,000
Project Location:	Irwin Township, Venango County, Pennsylvania
Congressional District:	Pennsylvania District 5
Applicant Organization:	South Sandy Creek Watershed Association (SSCWA) PO Box 223 Stoneboro, PA 16153
Project Officer:	Valerie Tarkowski, President
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PROJECT SUMMARY Field Priority: _____

Project Title: **WILLIAMS RUN AMD RESTORATION PHASE III - NFHAP/EBTJV PROJECT**

Proposed Accomplishment

Restore the main stem of Williams Run (WR) to a habitable stream by constructing a limestone bed system to treat acid mine drainage with funding from NFHAP & EBTJV. Tributaries of WR currently support healthy populations of wild brook trout. The project will allow currently isolated populations of native wild brook trout to return to the main stem of WR, connecting them and expanding their range. It will reduce pollution of South Sandy Creek (SSC), a degraded historic brook trout stream.

Description:

Importance to Resource

The project will restore historic habitat of wild brook trout. It will help reverse habitat fragmentation and decline of this important species. It will restore brook trout to remote habitat on public property at the western edge of the species' range in PA. It will also provide a unique fishing experience for the general public.

Problem and Causes

Williams Run is on the PA DEP's 303d List of Impaired Streams. This is due to past coal mining activities which have created acid mine drainage (AMD) into WR making it uninhabitable to aquatic species. Currently water chemistry is 3.2 pH and 0 mg/l of alkalinity with iron and aluminum present. (see attached table)

Objective

Treat AMD using a limestone bed to reduce Al, Fe and acidity levels and increase alkalinity and pH levels. This will allow isolated populations of native brook trout and other aquatic species to return to their historic areas. The project will connect these populations and expand their range. WR will become a popular angling destination.

Method

Retrofitting existing ponds with a limestone bed for AMD water to drain through and empty into a polishing pond. The water will then enter the main stem of WR much cleaner, creating viable habitat for brook trout and other aquatic species. The project will be monitored and managed by SSCWA and partners and adjustments made if necessary.

Additional Information

Project costs are small compared to other treatment systems giving us the biggest bang for our buck. Our belief is the "Keep It Simple, Stupid" theory. Retrofitting already existing ponds keeps construction costs minimal compared to other systems. Access is already in place with the need for widening and firming the current access. Maintenance events are planned and will be visible to the crew – there will be no guessing at what needs done where within this system as everything is above ground and visible. Other projects considered for the WR watershed: a PA Bureau of Abandoned Mine Reclamation (PA BAMR) highwall project to be implemented next spring includes reclamation of 4 highwalls and a treatment system in the headwaters of WR; a reclamation project is being considered by a local power plant to clean up 3 leftover coal spoil areas; a liming project funded by NFWF will be implemented next year; and another highwall project is being considered by PA BAMR that includes AMD treatment in the headwaters. In addition, this watershed offers a truly unique wilderness-like experience unimpacted by fragmentation due to development but still offers public access to the abundant natural resources held by PA Game Commission on SGL 39.

No fish passage barriers exist in this watershed.

Funding Information

Fund	Year			Total
	1	2	3	
NFHAP	$75,000	$75,000 if partner funding applying for doesn't happen	$75,000 if partner funding applying for doesn't happen	225,000

Estimated project duration: One (1) year

Anticipated First Year Partner Contributions

Partner	Cash Match	Pending	In-kind Match	Grand Total
NFHAP	$75,000			**75,000**
NFWF	$30,000		$99,960	**129,960**
Trout Unlimited – CHP	$5,000			**5,000**
OSM		Unknown at time of RFP applying for $100,000		**100,000**
BAMR		Unknown at time of RFP applying for $75,000	$3,390	**75,000** **3,390**
Allegheny Mineral			$11,500	**11,500**
SSCWA			$10,400	**10,400**
PASEC			$740	**740**
Mineral Township			$8,640	**8,640**
Property Owner			$8,000	**8,000**
TOTALS	**$110,000**	**$175,000**	**$142,630**	**427,630**

No anticipated new FTEs will result from the project.

Congressional district: Pennsylvania district no. 5

III. PROJECT DESCRIPTION, SCOPE OF WORK, AND PARTNER INFORMATION

A. Project Description and Scope of Work

Need for Project: AMD has destroyed what was once a vibrant coldwater aquatic community in WR that supported native brook trout. Tributaries of WR still support such communities, but the populations cannot effectively interact because of AMD in WR. Due to its wild character, a restored WR will offer a very unique fishing experience that is rare in PA.

Purpose, Goals, and Objectives: The purpose is to restore and enhance brook trout populations that have been impacted by historic coal mining practices. The project will create partnerships between management agencies and stakeholders. A principal goal is to develop support in the community for perpetuation and restoration of brook trout in their historic range.

The project will restore 9.03 miles of stream (3.7 miles of Williams Run and 5.96 miles of its receiving stream – South Sandy Creek) by increasing pH from 3.2 to 7.2 and increasing alkalinity from 0 mg/l to 60mg/l allowing isolated populations of native brook trout and other aquatic species to return to their historic areas. It will connect these populations and expand their range. Approximately three miles of WR will be improved by the project. A further objective is to make WR a showcase for partnerships and restoration.

The project is part of a broader effort to restore the entire length of WR and So. Sandy Cr. by cleaning up other sources of AMD, rehabilitating strip-mined areas, and addressing other issues that may be identified. This larger project is anticipated to restore wild brook trout throughout the 22,000 acre watershed.

Work to be Done and by Whom: All work to be done including any materials & supplies, design & engineering, construction, hauling, etc. will be done through RFPs. Permitting will be applied for by the SSCWA with the assistance of Rich Neville of Meadville DEP. Water sampling and monitoring will be done by SSCWA and BAMR.

Ownership and Management: The project will be constructed on the property of Chuck Woods and will be managed by the South Sandy Creek Watershed Association, with assistance from our partners and supporters. Maintenance will be quick and easy with only “fluffing” of the limestone that is coating being necessary. Our partners have equipment and operators that they use for our projects and show as in-kind service. A maintenance schedule will be determined after we observe how the water is reacting with the limestone. We expect the schedule to be measured in years not months or weeks.

Duration of Benefits: Limestone bed systems have an expected life of at least 20 years. That being said the 5,000 tons of Asshto #1 limestone with proper maintenance will outlast all of us. Woods has agreed to sign a written agreement allowing use of his property for this purpose for at least 10 years.

Expected Results and Monitoring: We expect the project to greatly reduce levels of aluminum & iron and increase the pH from 3.2 to 7.2 while increasing alkalinity from 0 mg/l to 60 mg/l. PA BAMR has agreed to continue their water sampling at this site. Testing will be conducted according to PA BAMR standard laboratory procedures. This improvement in water quality entering WR is expected to help restore WR to a functioning native brook trout habitat.

Timetable: 60 – 90 days for RFPs & permitting; 9 months for design, construction, revegetating if necessary; water sampling and monitoring will be ongoing.

B. Partner Information

Two letters from the PA Fish & Boat Commission are attached.

Due to the time constraints of this proposal deadline and key personnel being out of the office during the early part of the RFP we expect to have other partners providing in-kind contributions of materials, supplies, & services but did not have the time necessary to line them up.

However, SSCWA will provide a minimum of two volunteers spending 10 hours per week over the year-long project for oversight, prep & review of the RFPs for contracted services, grant administration, reporting paperwork, water sampling, permitting, etc. Their in-kind contribution is expected to be $10,400.

Property owner Chuck Woods donating his land for the treatment system and help with monitoring the system, oversight of the project, etc. His in-kind contribution is estimated at $15,000.

Mineral Township has heavy equipment and operators to run the equipment. Their in-kind contribution is expected to be $8,640.

Allegheny Mineral will supply the ASSHTO #1 limestone at a $2.30 discount per ton delivered. We expect to need 5,000 tons of this limestone. Their in-kind contribution is $11,500

BAMR will continue water sampling and monitoring. Their in-kind contribution is a minimum $3,390.

PA Senior Environmental Corps is conducting macro sampling at the mouth (and other places along) of Williams Run. Their in-kind contribution is $740

PA Fish & Boat Commission will continue their fish samplings on Williams Run and South Sandy Creek to document any changes in species, populations, etc. Their in-kind contribution is estimated to be $635.

Other potential partners include the PA Game Commission, Irwin Township, other nonprofits, etc.

Currently there are 6 partner categories identified. They include: Federal Agency, Local Government, Private Landowners, State Agencies, Local Conservation Groups, and Corporations.

IV. Map of Project Area

Two, color, large scale maps are inserted on the following pages. They are also attached as .jpeg files to the electronic version.

GPS coordinates for project area: UTM NAD83-Zone17 N, Easting = 586864, Northing = 4568681 (This is the location of the center of the pond on Chuck Woods' property)

HUC8 Level Watershed: 05010003 Middle Allegheny-Tionesta

Map One supplied by BAMR: Attached to email separately (would be page 6A)

Map Two (on following page) supplied by USFWS: Attached to email separately (would be page 7)

V. Photographs of Project Area. The attached maps tell the story of this project.

VI. Project Budget

Until this project is sent out to bid via RFPs, a breakdown of costs besides what is shown and explained below cannot be known. Acres to be affected by the monies shown below are a wild guess until a precise plan/design is written up by OSM personnel or RFP contractor.

A. General Requirements

Trout Unlimited – $5,000 Data collection, watershed plan prioritization and writing, water sampling, etc.

SSCWA– $7,500 travel to and from the project site, contractor meetings, etc. administer the grant, monitor the contracts, long distance calls, copier services, office supplies directly related to the project, and project oversight

NFWF – $30,000 trucking bagged lime, water sampling, equipment and operators, etc.

Allegheny Mineral – $60,250 Asshto #1 limestone delivered to site

RFP Partners – $7,250 access road improvements 1 acre, retrofitting existing 5-7 acre ponds, design plans, grubbing, seeding, other construction costs

OSM - $100,000 plan/design, access road improvements, retrofitting existing ponds, design plans, grubbing, seeding, other construction costs not covered by the above $7,250

PA BAMR - $75,000 water sampling, plan/design input, system oversight, access road improvements, retrofitting existing ponds, design plans, grubbing, seeding, other construction costs not covered by the above $7,250. Plus in-kind amounts of **$3,390** for water sampling.

B. Budget Table

Partner	Activity	NFHAP Request	Non-Fed. Contribution	Federal Contribution	Total Cash & In-kind
Trout Unlimited	Contractor services		$5,000 cash		**5,000**
SSCWA PA SEC Min Twsp. Prop owner	Travel, oversight, grant admin.Equip, samples, monitor contract, land use, etc.	$7,500	$10,400 in-kind $740 in-kind 8,640 in-kind 8,000 in-kind		**7,500** 10,400 740 8,640 8,000
NFWF	Contractor services		$30,000 cash 99,960 in-kind		**30,000** 99,960
Allegheny Mineral	Contractor services	$60,250	$11,500 discount -in-kind		**60,250** 11,500
RFPs will determine these partners	Design, Construction, grubbing, seeding, etc.	$7,250			**7,250**
OSM	Contractor services			$100,000 cash	**100,000**
PA BAMR	Contractor services		$75,000 cash 3,390 in-kind		**75,000** 3,390
TOTALS		**$75,000**	**$156,860**	**$175,000**	**427,630**

VII. EVALUATION QUESTIONS

A. Conservation of Sustainable Brook Trout Populations

The project will positively impact two streams: Williams Run and South Sandy Creek that are largely in public ownership and open to public fishing. Williams Run is almost entirely in public ownership. Forest canopy cover is very high throughout the watershed, as approximately 95% is held by the PA Game Commission and managed sustainably.

The limestone bed system will be located on private property, approximately ½ mile from WR. This property is completely forested and contains numerous wet areas and additional ponds for the metals (iron and aluminum) to drop out into prior to entering the main stem of Williams Run thus no deposition of heavy metals will occur instream. The property owner has agreed to a long-term agreement for siting this system on his property.

The project will conserve, enhance, and restore brook trout populations that have been impacted by AMD impacts from past coal mining practices. It will encourage partnerships among management agencies and stakeholders. It will develop support for implementation of programs that perpetuate and restore brook trout throughout their historic range in Western PA.

The project will develop relationships that foster brook trout enhancement, protection and restoration**.** It will be used to implement outreach and educational programs to ensure public awareness of the challenges facing brook trout populations. The South Sandy Creek Watershed Association currently conducts such education and programs. For instance, the Association has conducted field trips for the public, press, politicians, and conservation organizations and agency personnel. This project will be a catalyst for further such efforts.

The project will benefit many species other than brook trout, including mussels, snails, crayfish, aquatic insects, fish, amphibians, reptiles, birds, and mammals. All of these fauna live in the watershed, especially due to the fact that the watershed is primarily state gamelands. However, these fauna are not able to colonize Williams Run. Many plant species will benefit as well.

This project is part of a larger effort that was discussed on page 2 under Additional Information. These efforts are also expected to benefit groundwater in the watershed in addition to the water quality and brook trout benefits. This groundwater provides water for a number of rural residences surrounding the gamelands and is currently nearly unusable for drinking.

B. Endangered Species

Federal: None known
Our watershed does have documented species of special concern as is stated in the attached letter from Chris Urban, Chief of the Natural Diversity Section of the PA Fish & Boat Commission.

State Species of Concern: A review of maps on the PA Fish and Boat Commission Website showing historic and recent distribution of endangered and threatened species reveals that the area of Venango County where the watershed is located is a veritable last-stronghold for numerous species that need critical habitat such as that which will be created by this project. It appears that no other area of PA has such a concentration. Among the endangered and threatened species shown on the maps as per the above are:

Endangered

- Spotted darter

- Tippecanoe darter
- Gravel chub
- Eastern massasauga rattlesnake

Threatened

- Bluebreast darter
- Channel darter
- Gilt darter
- Ohio lamprey

C. Economically Important Species

The project is expected to improve population numbers and habitat for sport fish such as brook trout as well as game animal species such as waterfowl and other sport animals. Local motels, restaurants, B&Bs, gas stations, fishing & hunting supply stores, etc. will see an increase in business when word gets out that the wild brook trout have returned to Williams Run and South Sandy Creek.

D. Special Considerations

Our project will decrease the threat to the brook trout population. This project in conjunction with the other planned projects for the watershed will eliminate the threats to the brook trout populations.

The gorge that Williams Run and South Sandy Creek flow through is a very special place and quite unique in PA. Williams Run has a few road crossings in its extreme headwaters, but is otherwise roadless. There are no road crossings in the lower 5 miles of SSC and only two road crossings in the lower 8 miles. The gorge is roughly three miles across, without open roads. Some closed access and logging roads do exist in the gorge. This wild remoteness presents a unique opportunity to restore brook trout into an area where it can be nearly certain that they will remain undisturbed by urban sprawl and development pressures.

South Sandy Creek is relatively large compared to most brook trout streams in PA. If brook trout can be re-established there through the efforts of the current and future projects in the watersheds, it will be a showcase for eventual establishment of wild-reproducing brook trout beyond very small runs and brooks. South Sandy Creek is not devoid of life as is Williams Run. However, it appears to be impacted by water quality issues from WR pollutant load.

SSC and WR have open forest understories. Establishment of brook trout in these relatively large streams with open forest understories will present a unique fly-fishing experience for native brook trout. There are very few places in Western PA with native brook trout populations that offer such a quality fly-fishing experience.

The project area is on the extreme western edge of the brook trout range in PA and the restoration will have the effect of moving the brook trout's frontier westward.

The unique character of the gorge, combined with the very high degree of public ownership and the unique fishing experience that will result, will have the potential to draw visitors from outside of the area, increasing economic opportunity for this rural county.

PA BAMR is planning to conduct other projects in the area that will complement the proposed project in cleaning up Williams Run and South Sandy Creek.

A local power plant is also considering a reclamation project in the watershed that will have the effect of removing pollutant sources and cleaning up AMD in WR. This project is expected to have tremendous positive effects.

The proposed limestone bed project has very low maintenance requirements. The expectation is that the limestone will need to be turned over on a periodic basis– on the order of years, not months. There are several settling ponds downstream of the project that will collect any material that sloughs off of the limestone.

E. EBTJV Habitat Restoration Priority

According to Meredith Bartron of the USFWS Mid-Atlantic region this has not been assigned yet.

G. Habitat Connectivity & Enhancing Population Mobility

The project will connect existing healthy brook trout populations in the tributaries of Williams Run and is expected to contribute toward doing the same in South Sandy Creek. Meredith Bartron states that our watershed is identified as reduced. Having dialup connection made using the easternbrooktrout.net and sain.nbii.org/ebtjv websites very difficult. We appreciate the assistance USFWS personnel offered us on those items.

H. Management Assets

SSCWA has experience carrying out water sampling in the watershed and will continue to do so once the project is established. SSCWA will receive assistance from PA BAMR in this effort and PA BAMR has agreed to conduct the tests in its laboratories under its protocols.

If our post sampling numbers are not what we expect we will adapt our plan to make things right.

Public fishing opportunities will be extensive. Nearly 95% of the Williams Run watershed is located within State Game Lands 39. These public lands are held and protected by the PA Game Commission. Fishing opportunities include both road-access and walk-in opportunities. The other 5% of the watershed is located on private land that is open to the public.

SSCWA and its personnel have for several years conducted tours of the watershed for public officials, agency personnel, the general public, and the media. SSWCA conducted a very well received recycling day and wildlife demonstration in the spring of 2006 for the local population. SSCWA looks upon this project as a very exciting opportunity to expand these outreach efforts, including educators and school students.

SSCWA intends to put up project signs upon project completion.

This project is expected to demonstrate that brook trout can indeed be re-established in streams larger than small runs and brooks. Williams Run is in fact relatively large for a "Run," and South Sandy Creek will be quite large for a brook trout stream when the species can be effectively re-established there.

SSCWA is a dynamic and driven organization. We are totally committed to make this happen and see this through the trials and roadblocks that get in our way. We have a deep affinity for native species and brook trout and look forward to the day when our sweat, long hours, and stress will pay off for our children and those of other Pennsylvanians.

The history is there; the benthic structure is there; the land protection is there; the people to make this happen are there; now let's get the brook trout there!