West Virginia Stream Partners
Grant Application Questions

1) Describe how your group fits the Stream Partners Program mission of a broad-based community organization. Give an overview of your group's history, including (if applicable) how your accomplishments over the last year have led to improvements in the health or quality of life in and around your stream or watershed.

In 2006 a group of citizens came together to discuss the need to eradicate purple loosestrife along the banks of Warm Springs Run (WSR). Spearheaded by the president of the Sleepy Creek Watershed Association (SCWA), the Morgan County Purple Loosestrife Coalition (MCPLC) feared that the seeds from this invasive species would travel downstream and ultimately overwhelm small and fragile harperella plants in Sleepy Creek. Harperella is on the endangered species list.

In an effort to determine how far purple loosestrife had spread, MCPLC contracted with Kieran O'Malley of the WV Division of Natural Resources to conduct a corridor assessment of Warm Springs Run. Among other things, O'Malley determined that WSR suffered from "an out-of-sight out-of-mind condition," and that the best way to make people aware of the Run and its many problems was to form a watershed association.

With the help of SCWA, the Eastern Panhandle Conservation District (EPCD), and Potomac Headwaters Resource Conservation and Development (PHRC&D), concerned citizens were brought together and the Warm Springs Watershed Association (WSWA) was established in July of 2008.

The mission statement of our organization is *to protect and restore Warm Springs Run and its watershed through action based on education and the establishment of partnerships with concerned citizens, civic organizations, and governmental agencies of Morgan County and the state of West Virginia.*

There are two reasons why WSWA has been successful in fulfilling our mission. The first reason is the advice and help we have received from various agencies and organizations, including:

- Cacapon Institute
- Chesapeake Bay Program Coordinator of the Eastern Panhandle Regional Planning and Development Council
- Eastern Panhandle Conservation District
- Potomac Riverkeepers
- Sleepy Creek Watershed Association
- US Department of Agriculture – National Resource Conservation Service
- US Environmental Protection Agency

- US Fish and Wildlife Service
- WV Conservation Agency
- WV Department of Environmental Protection
- WV Division of Forestry
- WV Division of Natural Resources
- WV Extension Office

WSWA is actively involved with West Virginia Rivers Coalition and the Choose Clean Water Coalition.

The second reason we have been successful in fulfilling our mission is because we have formed active partnerships with the following local organizations:

- Berkeley Springs State Park Foundation
- Morgan County Board of Education
- Morgan County Commission
- Morgan County Planner
- Morgan County Planning Commission
- The Museum of the Berkeley Springs
- Town of Bath (ToB)
- Town of Bath Cemetery Maintenance and Management Corporation (ToBCMMC)
- Town of Bath Tree Board
- Town of Bath Streetscapes Committee
- Warm Springs Public Service District

In the past year, WSWA has accomplished the following major tasks:

Since 2007 we have conducted an annual effort to eradicate/control purple loosestrife in WSR. We are seeing major reductions of the numbers of plants along the banks of the Run.

In 2009 we developed a stream monitoring program based upon the protocol outlined in the WVDEP Save Our Streams program. Volunteers have been trained at level 1 and level 3. We continue to educate volunteers and to monitor 5-7 sites every year.

The comprehensive plan, which was completed in 2012, has been integral to various civic and municipal groups addressing issues of stormwater control throughout the watershed. Information included in the comprehensive plan was used by the ToBCMMC to successfully apply for a $50,000 grant from the National Fish & Wildlife Foundation. The goal of the project is to reduce erosion, and thus the amount of nitrogen and phosphorus that is carried to Warm Springs Run. The comprehensive plan has also been used by the engineering firm hired to create a design for various green infrastructures in the cemetery. The plan was also used by the Streetscapes Committee to engineer various green stormwater best management projects to be installed when portions of Fairfax and Washington Streets are renovated.

Over the years, WSWA has planted more than 500 trees in an effort to improve the riparian buffer of the Run. This year WSWA has partnered with the ToB Tree Board to increase the tree canopy in town and in the overall watershed. As part of that process, the Tree Board worked with Cacapon Institute to conduct an i-tree inventory using aerial photographs of the entire watershed. WSWA members and friends organized and participated in a boots-on-the-ground inventory of every tree located on ToB property, including Greenway Cemetery. In the future, the information gathered in this process will allow us to plant trees in areas that will have the greatest impact on protecting WSR.

In 2013/14 WSWA developed a Quality Assurance Program Plan that was accepted by the WVDEP and USEPA. Using those guidelines Cacapon Institute tested for the presence of fecal coliform bacteria in the Run. Areas with consistently high levels of fecal coliform bacteria have been identified. Future testing is being done over the next several months to more accurately pinpoint possible sources of contamination.

In 2009 the EPCD reestablished a wetlands area south of Widmyer Elementary School. Widmyer and Berkeley Springs High School are located in the flood plain of WSR. This year, after five years of negotiations, a contract between the Morgan County School Board and the Eastern Panhandle Conservation District has been established to determine who is responsible for what upkeep and when. The school is satisfied that they can maintain a “tidy” campus and environmental groups are satisfied that the area will be maintained in a way that protects nesting and migrating wildlife. In many instances, the participation of WSWA was the lynchpin that enabled the school and the conservation district to sign the contract. For example, members of WSWA agreed to take responsibility for making certain that the path through the wetlands is kept weeded.

During these negotiations, it became very clear how important it was to educate school personnel, students and the general public. For example, school personnel were convinced that mowing the banks of WSR was the only way to protect children from snakes. This year WSWA and EPCD partnered to create and install educational kiosks in the wetlands. The kiosks tell people that:

- In nature, anything done in a particular location has a wider impact in other locations.

- Protecting the native flora and fauna of the wetlands is as important to human visitors as to those whom they visit.
- In addition to providing wildlife with food and a place to breed and live, wetlands filter pollution and sediment and thus help to reduce the severity of flooding downstream.
- "Be prepared" rather than "scared" by inhabitants of the wetlands such as snakes, snapping turtles, mosquitos, ticks, poison ivy, etc.

WSWA also created signs to be erected along the Run between the elementary and high schools to educate people about the importance of not mowing and that erosion upstream results in more severe flooding downstream.

In the last year, the number of dues-paying members of WSWA has increased from 29 to 80 people. Many new members were recruited due to WSWA participation in the Master Gardener Plant Fair and the Morgan County Fair. In order to keep members informed and involved, we continue to publish a quarterly newsletter and have established a website and Face Book page.

Using funds from the 2014 Stream Partners grant, we created t-shirts using a scenic but hidden portion of the Run. These shirts are aesthetically pleasing enough that people who wear them are often asked where they are available. (One of our members wore her WSWA shirt to a meeting of the Morgan Arts Council. When talking about the type of t-shirts MAC wants to create, several people said they want something like the WSWA shirt.)

2) List the issues that affect your stream or watershed (e.g. acid mine drainage, stream bank erosion, litter etc.).

In the 2007 stream corridor assessment, Kieran O'Malley lists several issues affecting the Warm Springs Run, including:

- Channel alteration
- Erosion
- Exposed Pipes
- In/near stream construction
- Inadequate buffers
- Debris along the banks as well as in the Run
- Pipe outfall
- Stream input
- Various species of invasive plants including autumn olive, Japanese knotweed, Japanese stiltgrass, mile-a-minute weed, tree of heaven and purple loosestrife.

The 2010 watershed assessment notes that 17% of the watershed is covered by impervious surfaces, which creates problems with stormwater runoff and more severe flooding of WSR. The i-tree inventory done in 2014 by the Cacapon Institute notes that the percentage of impervious surfaces in the watershed has increased to 19%.

In addition to noting the above mentioned insults to WSR, the comprehensive plan also lists problems such as:

- Erosion from gravel roads and disturbed hillsides throughout the watershed.
- Stormwater problems have caused the stream to be separated from the floodplain in many areas.

WV DEP lists the Warm Springs Run as impaired due to CNA biological and fecal coliform bacteria. In talking with various experts, there is debate as to whether these problems are caused by too much sedimentation as a result of erosion, or by too little sedimentation due to stream channelization. Both conditions are present in the Run. The 2005 report by the *West Virginia Potomac Tributary Strategy Implementation Plan* lists Warm Springs Run as at high levels of development and nitrogen delivery factors.

WVDEP is 18 months into establishing a TMDL for Warm Springs Run.

3) Explain your group's long and short-term goals to improve your watershed and community. Describe how this Stream Partners grant will help you achieve those goals and (if applicable) how your goals have evolved since your organization was created.

Despite the work done over the past six years, the condition of WSR is deteriorating, as is evidenced by the fact that scores from stream monitoring are down significantly. Until the TMDL is completed, WSWA won't know sources of impairment to the Run. However, based on information contained in our corridor and watershed assessments as well as in the comprehensive plan, WSWA has established the following goals:

Many of the programs listed previously will continue as part of our long-term goals.

We will continue our stream monitoring program.

We will continue to plant trees. Based upon the i-tree inventory, we intend to be more intentional about where we plant trees so as to provide the greatest benefits in terms of green stormwater management.

In terms of invasive species, we will continue to control/eradicate purple loosestrife in WSR. We are partnering with the Cacapon Institute, the ToB Tree Board and ToBCMMC to create a comprehensive plan to eradicate tree of heaven in specific locations in the cemetery and to plant native trees in its place. After many years of effort, there has been success in removing Japanese knotweed from a small portion of one of the tributaries to WSR. Without any help from WSWA, the area has been taken over with native plants such as jewelweed, joe pye weed, ironweed, and goldenrod, to name but a few. We are in negotiations with the landowner, WV Division of Forestry, WV DNR, US Fish & Wildlife Services and Morgan County Department of Highways to eradicate a limited but heavily infested area upstream.

We have partnered with the EPCD to establish a program whereby local businesses, and especially those located on the Run, voluntarily inventory their practices, learn better management practices, and implement those BMPs that will protect the Run. Those groups that become better stewards of the Run will receive a sign recognizing their efforts, as well as free advertising on our website and Face Book page.

For various reasons, including decreased stream monitoring scores and the increased percentage of impervious surfaces in the watershed, we plan to concentrate our current efforts to form partnerships with some of the aforementioned local groups to install green BMPs in strategic locations in the watershed. The goal of installing green BMPs is to reduce the volume and velocity of stormwater runoff into WSR, thus reducing levels of sedimentation and pollution carried by stormwater.

4) Describe your watershed improvement project that will restore, protect, or enhance the quality of your stream or watershed. Tell us how this Stream Partners grant will be used to support that project.

The Town of Bath, in partnership with the Warm Springs Watershed Association, was successful in securing a 2013 National Fish and Wildlife Foundation (NFWF) Chesapeake Bay Small Watershed Stewardship Grant to bring green infrastructure stormwater control solutions to Greenway Cemetery.

The town has obtained the services of William H. Gordon, a professional landscape architecture and engineering firm, to develop an overall master plan within the cemetery that will maximize best management practices throughout the site. These practices will help to meet the nutrient and sediment reduction goals described in the NFWF grant.

The NFWF grant allocates funding to implement only a portion of the practices identified in the master plan. Therefore, the Warm Springs Watershed Association is requesting additional funding from a WVDEP Stream Partners grant to install the following green stormwater control practices.

Conveyor Belt Diversion Break

Conveyor belt diversion breaks are used on low traffic roads to divert water off the road surface. It consists of a piece of used conveyor belt bolted to treated lumber and buried in the road. The belt diversion gives under tire pressure then springs back to its original position. Unlike waterbars the belt diversion will remain stable during wet road conditions and will still function when the road crown is lost.

Berm Removal

A berm is a mound of earthen material that runs parallel to the road on the downslope side. Berms can be formed by maintenance practices and road erosion, both of which lowers road elevation over time. This berm can be removed to encourage sheet flow into the surrounding land area instead of concentrated flow in the unnecessary ditch created

by the berm. Restoring sheet flow results in decreased runoff and sediment transport along the roadway, increased infiltration, and reduced maintenance associated with the road drainage system.

Bio-Swale Design and Construction Workshop

A bioswale or vegetated swale is a form of bioretention used to partially treat water quality, attenuate flooding potential, and convey stormwater away from critical infrastructures (roadways). These systems are linear, with length to width dimensions much greater than the more typical bioretention cells.

Green Does Not Mean Grassy (Conservation Landscaping Workshop)

The restoration of the weathered shale areas of Greenway Cemetery will benefit water quality downstream and the entire watershed by decreasing runoff, reducing sediment deposition, and potentially reducing acid sulfides from entering the streams. This project will demonstrate that that these areas can be restored using various species other that traditional turf grass.

5) Provide a budget for your watershed improvement project showing any cash and/or in-kind service contributions that will match 20% of the grant.

WSWA Conveyor Belt Diversions				From Grant	In-Kind
Budget Item	**Amt. Needed**	**Unit**	**Cost Per Unit**	**From Grant**	**In-kind**
2"x6" x 10' Pressure Treated Lumber	15	ea	$10.00	$150.00	
Conveyor Belt (12" width min)	100	lf	$10.00	$1,000.00	
Bolts, Nuts and Washers	120	ea	$6.00	$720.00	
Excavation and Installation	40	hr	$17.00		$680.00
Administration					$150.00
SubTotal				$1,870.00	$830.00
20% Contingency				$374.00	
				From Grant	In-Kind
10 Conveyor Belt Divesions Total				$2,244.00	$830.00

WSWA Berm Removal				From Grant	In-Kind
Budget Item	**Amt. Needed**	**Unit**	**Cost Per Unit**	**From Grant**	**In-kind**
Grading with equipment	20	hr	$20.00		$400.00
Seed and Straw`	100	sf	$2.00	$200.00	
Administration					$25.00
SubTotal				$200.00	$425.00
20% Contingency				$40.00	
				From Grant	In-Kind
Berm Removal Total				$240.00	$425.00

WSWA Bio-Swale				From Grant	In-Kind
Budget Item	**Amt. Needed**	**Unit**	**Cost Per Unit**	**From Grant**	**In-kind**
Pre-design Planning	3	hours	$17.00		$51.00
stone (#57)	5	ton	$25.00	$125.00	
Topsoil	2.5	ton	$18.00	$45.00	
Compost	2.5	ton	$30.00	$75.00	
Sand	5	ton	$45.00	$225.00	
Mulch (2" Thick)	10	CY	$26.00	$260.00	
Filter Cloth	100	LF	$0.50	$50.00	
Plants	35	ea	$7.00	$245.00	
Delivery	5	ea	$50.00	$250.00	
Installation	60	hours + tools	$17.00		$1,020.00
Under Drain (6"x10')	10	each	$15.00	$150.00	
Administration					$100.00
SubTotal				$1,425.00	$1,171.00
20% Contingency				$285.00	
				From Grant	In-Kind
100 LF Bio-Swale Total				$1,710.00	$1,171.00

WSWA Conservation Landscaping				From Grant	In-Kind
Budget Item	**Amt. Needed**	**Unit**	**Cost Per Unit**	**From Grant**	**In-kind**
Garden Preperation with equipment	1	day	$52.00	$52.00	$52.00
Wild Flower Seed Mix	5	pounds	$25.00	$125.00	
Compost	0.5	ton	$30.00	$15.00	
Potted Perennials	60	ea	$8.00	$480.00	
Administration					$100.00
SubTotal				$672.00	$152.00
20% Contingency				$134.00	
				From Grant	In-Kind
Conservation Landscaping Demo Total				$806.00	$152.00

6) Explain your group's mission to provide outreach and education to your community about the importance of stream and watershed health. Describe (if applicable) any changes you have seen in your community's attitudes towards watershed and stream health.

Since its inception, WSWA has given various power point presentations to any and every civic, municipal, and government organization in the county with whom we might form partnerships in order to further our mission.

We are also a presence at events such as the Morgan County Master Gardeners Plant Fair and the Morgan County Fair. In addition to providing literature on how people can improve stream and watershed health, we have tried to increase traffic to our booths by holding raffles and offering such delicacies as cattail salad.

We issue press releases to the *Morgan Messenger* for every event we hold. Example of press releases include pre- and post-articles about Make It Shine efforts, tree plantings, projects to control invasive species, and awards received at Watershed Celebration Day. These press releases are also published on the website, Face Book page, and in our newsletter.

We work with local students to raise awareness about the importance of watershed and stream health. For example, WSWA has partnered with the EPCD to instruct students in the aquatics portion of the Envirothon competition. For the past two years we have partnered with the Morgan County Parks and Recreation Committee to teach younger students about what macroinvertebrates tell us about the health of a stream.

Without exception, every single WSWA board member is involved in other civic, municipal and government efforts to improve the environment. This cross-fertilization has led to dissemination of information specifically geared toward stream and watershed health. We have also formed partnerships with these organizations to seek grant and to implement projects to improve stream and watershed health.

If awarded a 2015 Stream Partners grant, we will hold public workshops as part of the implementation of the Bio-Swale Design and Construction and Green Does Not Mean Grassy projects.

We knew were on our way to overcoming the "out-of-sight out-of-mind" problem of WSR when non-members began to call to report "insults" to the Run, such as improper dredging procedures at the high school, unusually high water and sediment levels in the stream north of the US Silica plant, or destruction of a wetlands area to build a parking lot. Also, representatives from WSWA are frequently asked to make presentations at various events. For example, we were asked to make a presentation to the County Commission to support the rail-to-trail conversion project that parallels a portion of the Run. So, too, the Town of Bath Planning Commission specifically asked a member of WSWA to speak to various issues at public workshops leading to the update of the town's comprehensive plan.