THE Valley
DARBY CREEK VALLEY ASSOCIATION
Fall 2021

## The President's Pen

By Jaclyn Rhoads

# Everybody Can Do Their Part

DCVA is well known for its clean ups. Getting close to 40 years, we have been doing this with you for a long time. Trash will never go completely away, but we should have a better sense of how to manage our waste and definitely how to limit the amount that is created. Unfortunately, our society is now at the point of generating even more per person than we did even 30 years ago.

Think about all the disposable items that are available from cups, straws, plates, to even mops. If you haven't had the opportunity to watch this short documentary please take a minute to do so. It is called storyofstuff.org. There are a number of videos on the website that are very informative including the story of plastics. We all know that plastic is in everything and dominates our country. We now have a plastic recycling crisis, and something needs to happen soon before we have more plastic in our oceans than fish.

This is where you all come in. We can go on a plastic diet by eliminating disposables. Simple steps include asking for no straw at a restaurant, bringing your own container for left overs, buying reusable items like coffee travel mugs, and using reusable bags for shopping. Towns also have the option to pass ordinances to limit or completely ban items like plastic bags, Styrofoam and straws. Several states and cities are already in the lead – Philadelphia, New York, New Jersey, and Delaware.

You can find some of these model ordinances on DCVA's website. Bring them up at your next town council meeting and advocate for their passage. These simple steps and ordinances will make a big difference in changing our culture and saving our environment. Thanks for doing your part!

# Upper Darby Rain Gardens Update and Lessons Learned

by Stephen Lockard,
DCVA Board Member


*3203 Huey Ave Rain Garden*

The Upper Darby Rain Garden (UDRG) program was only recently initiated but has enjoyed great success. Here I share some of our progress and lessons learned. During the winter and spring of 2021, the UDRG leaders performed many property assessments for fall rain garden installations. Further, we performed some property assessments during the summer of 2021 in hopes of installing additional rain gardens next spring in 2022. UDRG's leadership is mainly Jamie Anderson, Michelle Smith and me, Stephen Lockard. I suffered a back injury in May 2021 which left all of the work to Jamie and Michelle. Over the summer of 2021 we decided that we needed a new paradigm; leaving all of the work to just the two of them seemed untenable.

Prior to the summer of 2021 we had asked homeowners to incur the cost of removing the sod from the area as well as redirecting stormwater to the rain garden location. These costs can range from a few hundred dollars up to several thousand dollars. Then, using our volunteer group, we would till the soil, berm the perimeter of the garden and plant the plant plugs under a layer of mulch. Though somewhat taxing this worked with our first seven rain garden installations.
In our new plan we explored covering the cost of landscapers to perform the heavier work and then allowing our volunteers, including the rain garden recipients, to install the plant plugs. The great drawback to this plan is the high landscaper fees of $1,400 to $3,000. Fortunately, Jamie was able to tap a short-term funding source in the Pennsylvania Resources Council. We hired Duranti Landscaping in Broomall and worked closely with Mr. Duranti to develop his company as a knowledgeable and dependable partner to perform the heavier work. He is meeting our expectations. In addition, we implemented a cost share whereby the homeowner made a financial contribution to the program in lieu of paying for the prep fees explained above. We felt that for these fall gardens that it turned out to be an overall cost savings for the homeowner. By the first weekend of October, we installed four more rain gardens in Secane and Drexel Hill.

*1004 Morgan Ave Rain Garden*

The four rain gardens planned for Fall 2021 add to the seven installed last year and offer a wide variety in type. The rain garden at 1004 Morgan Avenue, Drexel Hill is in full shade with suitable plants. At two additional properties in Drexel Hill, 3203 Huey Ave and 332 Shadeland Ave, we have installed rain gardens in full sun. Both of these rain gardens experience considerable flow- they are both fed by more 600 square feet of roof stormwater runoff.

# Upper Darby Rain Gardens Update and Lessons Learned

*917 Rhoads Ave Rain Garden*

Lastly, 917 Rhoads Ave in Secane is located at the bottom of a steep hill and features a rain garden fed both by roof runoff and a large amount of street stormwater. So much street runoff is available at this last site that we had to divert much of it so it would not destroy what we built. This complicated two-tiered rain garden designed with several water loving shrubs and more than 300 plant plugs is fortified by a check dam and berms. The berms are reinforced by rocks along the street and at the berm overflow points.

*3203 Huey Ave Rain Garden*

While my injury last spring initially appeared to be a setback, it compelled us to use our ingenuity to create what currently appears to be a better way forward. Our limited personnel meant limited rain garden installations, now it appears that we may be able to increase our production from three-four per season to five-seven per season. By training and employing landscaping companies to perform the heavier work, while we assess, design, order plants and coordinate resources, we can install an increased number of stormwater mitigation sites.

*332 Shadeland Ave Rain Garden*

*1004 Morgan Ave Rain Garden*

# A Watershed Resilience, Management and Conservation Plan for the Darby Creek

by Robin Mann,
DCVA Board Member

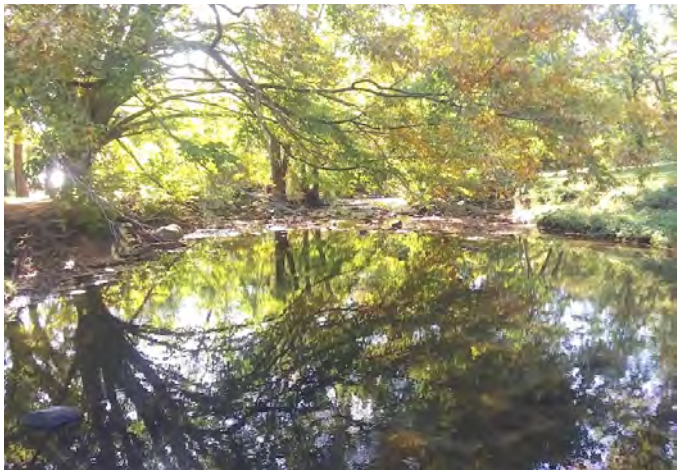
The Strategic Plan adopted by DCVA in the spring of 2021 identified four pillars on which to organize our work towards achieving our mission in the coming decade:

- **Programming**
- **Land Stewardship**
- **Advocacy**
- **Communications**

We further recognized that to be effective in these efforts towards DCVA's mission of "restoring and protecting the natural, historical and cultural resources of the watershed" required us to have an up-to-date Watershed Conservation Plan, based on current conditions and needs within the Darby Creek watershed and its communities.

The existing Darby Creek Watershed Conservation Plan was finalized in 2002. In the intervening years, the effects of climate disruption - intensified storm events, disruption of weather patterns, more severe heat waves - have compounded the stresses on watershed resources. The need has become clear for a watershed plan that emphasizes the fostering of greater climate resilience in the face of uncertainty about the extent of change in the future.

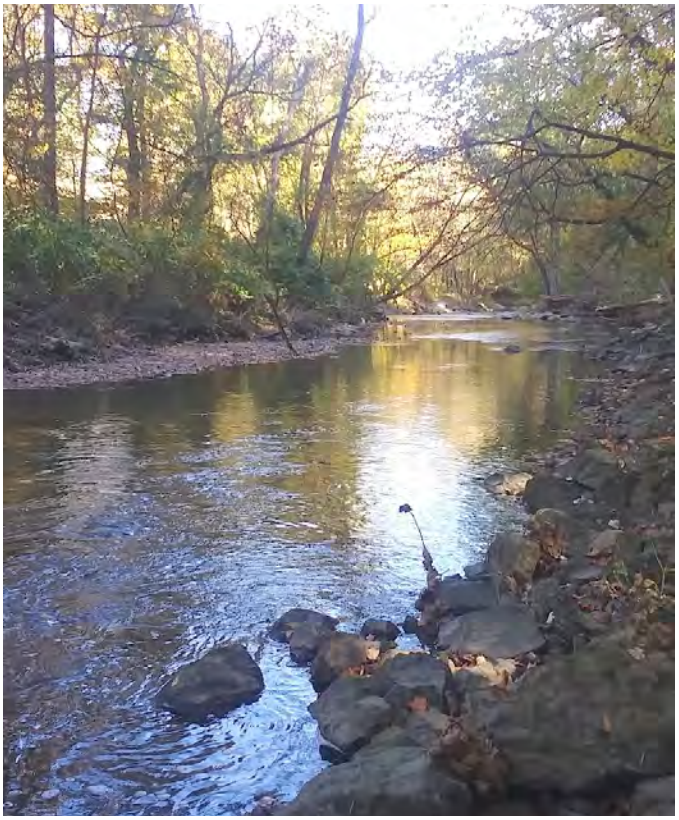
In addition, DCVA is more cognizant of the need for a plan that more fully recognizes the diverse make-up of our watershed communities and the disproportionate pollution burdens and relative lack of access to watershed resources experienced in portions of the watershed.



Our hope is this new plan will have the potential to foster a shared sense of purpose and shared commitment among the communities of the watershed in pursuing strategies to improve the watershed's health and resilience for the benefit of all.

In recent months, DCVA leaders have worked with planning experts at Natural Lands to develop a scope of work for the plan, to pursue funding for a planning process. Natural Lands is a non-profit land conservation organization based in Media, Pennsylvania that is "dedicated to the management, protection, and conservation of eastern Pennsylvania and southern New Jersey's native forests, fields, steams, and wetlands." (Natlands.org). We were pleased to learn recently that the project was eligible to

# A Watershed Resilience, Management and Conservation Plan for the Darby Creek



apply for a Delaware County Greenways Grant, and we are eagerly awaiting a determination about our proposal. Additional funding sources are being investigated to ensure we can access critical data as well as conduct the full scope of stakeholder consultations with watershed communities that we


An important first step, once we can secure funding, is recruitment of a Steering Committee to guide the project. Our aim is to recruit a committee that is representative of the watershed geographically, racially, and socio-economically and that can bring diverse perspectives and interests, as well as subject matter expertise, to shaping this plan.

We hope interested DCVA members will assist in that recruitment effort as well as in promoting participation in the coming stakeholder consultations within their communities.

# PECO Darby Road Report

by Terry Cooke,
DCVA Board Member

Over the 2020-21 period, PECO has been investing some $10 million to enhance the local natural gas distribution system in Haverford Township.

As described in PECO's public relations notices, "this work is part of a multi-year plan to modernize PECO's natural gas system. The project includes replacing existing natural gas main and bare steel natural gas service lines with new plastic pipe, which enhances safety, is more durable and improves service reliability."

Starting in late June 2021, this project came to the stretch of Darby Road between Radnor Road (near Haverford Reserve and the Quadrangle) and Brennan Drive (one quarter mile from Darby Road's intersection with Route 320/Sproul Road). The challenge presented by this stretch of the installation was passing the pipe under Ithan Creek at a sufficient depth to meet PA Department of Environmental Protection requirements for protection of the creek's water quality.

View from West (pipe emerging from pylons)

# PECO Darby Road Report

This snapshot report is, essentially, a dispatch from the front-lines of the project. It lacks comprehensive insight into the full-scale of the project. Likewise, it lacks understanding of the engineering rigors of the operation as it also lacks scientific understanding of the possible environmental consequences. It is simple and personal reportage of a (quite disruptive) project which we witnessed unfolding in front of our driveway over a 14-week period.

As depicted in the series of captioned photographs below, the main challenge was to drill a curved, 24" diameter "tunnel" over a distance of slightly more than 250 yards (from east of the 476 overpass to close to Brennan Drive).

Being on the front-lines of this project, we note three observations of interest to the Darby Creek Valley Association and area residents:

• The engineering feat was impressive. The drilling was almost entirely through through bedrock. The drill-head was controlled electronically by sensors at the drill head communicating with above-ground computer systems. The 24" diameter was only achieved after weeks and weeks of back-and-forth drilling with progressively bigger drill bits. Once the 24" diameter had been achieved, the entire 250+-yard length of the new plastic pipe was installed by dragging it through the newly-formed "tunnel" from east (Quadrangle side) to west (Brennan Drive side), surfacing just a few yards from our driveway and mailbox.

• An environmental episode was encountered. Due to technical factors which I cannot adequately explain, a run-off of clay from under the Darby Road road-bed started flowing into Darby Creek (around the southwestern abutment of the Ithan Creek Bridge) starting on July 8th, 2021. This run-off episode appears to have been quickly addressed by PECO's Senior Environmental Compliance Specialist, Linda Kardos, and the PA DEP which she notified. Run-off mitigation structures were

View from East to West

installed (on our property) on July 9th and were removed on October 4th. As home-owners for this part of the creek-bed, we were distressed that the environmental episode occurred but were guardedly gratified by the response which we witnessed.

• The post-project restoration dialogue is still a "work-in-progress." The ramifications of a 14-week project of this scope are not trivial. We are engaged with PECO's Project Manager to try to assure that the status post-facto is not starkly different from the status quo ante. We will let the DCVA community know what we find to be the case.

# Watershed Management that Works

by Carl Dupoldt, DCVA Board Member
& Kate Doms, DCVA Secretary

Sustainable management of aquatic ecosystems is a worldwide priority; the integrity of these systems depends, in turn, on the integrity of the watersheds (catchments) in which they are embedded.

Watersheds have a natural hierarchy consisting of nested hydrologic units. The largest unit is a river basin that can be thousands of square miles. The smallest is a drainage area that can be as small as a tenth of a square mile. In-between are different orders of watersheds, and sub watersheds. Each of these successively divided and sub-divided watershed levels have dynamic interactions and processes within their own level and between watersheds.

Groundwater, wetlands, lakes and reservoirs, upland streams, great rivers, estuaries, and coastal oceans are all valuable water resources, and all are embedded in or – in the case of most coastal systems – strongly connected to watersheds. In cases where waters are wholly or relatively unimpaired, new and expanding human uses of watersheds threaten the integrity and sustainability of water supplies and aquatic ecosystems. Population growth requires development of land and infrastructure for residential, commercial, transportation, and supporting uses.

The US EPA (https://www.epa.gov/hwp/initiatives-create-and-protect-healthy-watersheds#hydrologic) points out that a hierarchical approach to water quality that mirrors the hierarchical arrangement of watersheds themselves has resulted in water quality improvement. Here we list some examples in water quality improvement programs that EPA provides and some local examples as well.

**Regional Programs** – For example, the Delaware River Basin Commission that was formed in 1961 by a compact among the four basin states: New York, New Jersey, Delaware and Pennsylvania and the federal government to manage the tremendous water resource that is the Delaware River watershed. This watershed provides water for approximately 5% of the US population.

**State Programs** – The Pennsylvania Department of Environmental Protection Growing Greener Plus Grants Program, which funds watershed restoration, and protection projects, including some DCVA projects past and present. It also funds abandoned mine reclamation and abandoned oil and gas well plugging projects.

**Habitat and Biodiversity Conservation** –The National Fish Habitat Action Plan that is designed for non-governmental groups such as tribes, anglers' and business associations to help conserve fish habitat. Another example is watershed organization programs that educate the public on how to construct rain gardens and conserve riparian buffers such as DCVA and local Environmental Advisory Council programs.

**Green Infastruction and Landscape Conservation**- The Philadelphia Green City Clean Waters program that has been studied by other cities seeking ways that they too can reduce stormwater runoff and clean up their waterways.

**River Corridor Protection** – Pennsylvania's acid mine drainage restoration programs.

# Watershed Management that Works

**Land Protection Programs and Local Land Use Ordinances** – Municipal land use ordinances for stormwater management and percent impermeable surface.

**Protecting Hydrologic Regimes** – Agencies and commissions that protect the Lake Erie basin, the Delaware River Basin, and the Susquehanna River Basin.

**Protecting Biology and Water Quality** – Pennsylvania's Coldwater Heritage Program to protect coldwater fisheries, or DCVA's StreamWatch water quality monitoring program.

The nested nature of watersheds means that impairment of a subwatershed has a "rotten apple" effect on the larger watersheds of which it is a part. On the other hand, we can look at that situation in a positive way-rather than be overwhelmed by the magnitude of water quality problems, we can tackle isolated problems in subwatersheds and have a wider positive effect. All of the examples that I listed above are encouraging examples of that wider positive effect!

# Darby Creek Headwaters Monitoring Program

by Lauren McGrath,
DCVA Board Member,
Director of the Watershed Program at Willistown Conservation Trust

The Darby Creek Valley Association (DCVA) has teamed up with the Willistown Conservation Trust's Watershed Protection Program and Stroud Water Research Center to create a citizen science water monitoring program in Darby Creek. This collaborative project aims to create a network of training and mentoring opportunities to empower the neighbors of Darby Creek to collect high quality stream data and become water advocates for their communities. The long-term goal of this project is to use the information collected from Darby Creek to advise restoration decisions, like choosing the most effective location to improve riparian buffers or the best place to install a rain garden to slow down storm water entering the stream. Detailed monitoring data will also help to identify pollution sources and areas of the landscape that pose a risk to watershed health and integrity. Cultivating a stronger understanding of the waterway takes time and effort, and we are looking to the community for help!

Training for this program will focus on safety, high quality data collection, and education on watershed ecology and the influence of humans on waterways. Individualized training will be provided to each volunteer to ensure confidence in safety protocols and the process for collecting high quality chemistry data and water samples. In addition, volunteers will learn more about how human activity and landscape development affects the health of waterways beyond the borders of the headwater region. The creation of a volunteer network will provide a platform for volunteers to become stream advocates who are knowledgeable about current issues in the watershed and can speak to both the needs of the waterway itself, as well as the surrounding communities.

# Darby Creek Headwaters Monitoring Program

As Willistown Conservation Trust focuses on the data collection in the headwaters of Darby Creek, partnership with DCVA ensures that this program is being implemented throughout the entire Darby Creek Watershed. This watershed-wide approach will provide opportunities to learn how the waterway changes as it moves downstream, in addition to highlighting challenges that local communities face such as stream flooding, thermal pollution, road salt pollution, erosion and sedimentation. The hope is that the insights that residents develop about the Darby Creek watershed through this program will provide a foundation to begin to address those issues. Our waterways are a valuable part of our environment and are a reflection of the health of the entire landscape – the more we understand how they are being impacted by human activity, the more effective we can be at preserving and restoring them.

## We are looking for volunteers! To learn more about this program, email LBM@wctrust.org, and to become a volunteer, contact director@dcva.org.

More details about the Darby Creek Community Science Monitoring Program will be shared in February 2022 at the Upper Main Line YMCA as part of the Easttown Environmental Advisory Council lecture series. The date and time of this presentation will be announced soon. Everyone is cordially invited to attend by Zoom or in person. Watch the Easttown Township and DCVA websites for more information.

# Eastwick's Community Advisory Group's Notable Achievement Award for 2021

by Earl Wilson,
3rd Vice President, DCVA,
Eastwick Friends and Neighbors Coalition

The Eastwick Community Advisory Group was honored to receive the US Environmental Protection Agency's "Notable Achievement Award" for 2021. It is important to have a brief chronological history that presents an understanding as to how the above "Notable Achievement Award" was achieved. This award was the result of years of cooperative work between the Environmental Protection Agency (EPA) and the Eastwick Lower Darby Creek Area Community advisory Group (CAG) working together to remediate the superfund site called the Clearview Landfill.


The Clearview Landfill, once called the Heller's Dump is a mountainous pile of toxic organic and inorganic wastes that covers approximately fifty four (54) acres and extends to a height of about one hundred (100) feet at its highest point of elevation. It was an "eye sore" and a major concern for the residents who lived near-by. It was a major source of discussions and meetings with politicians by residents hoping that "something" could be done about the landfill issue. After years of advocacy by the residents, the EPA finally declared the landfill a superfund site. This declaration brought to the residents of the community a heightened sense of optimism that "maybe something was going to be done about that landfill".

The EPA and the residents held many meetings for months and during that time a document called the Record of Decision (ROD) was produced. This document was to serve as a template as to how the remediation process was to be implemented at the landfill. In addition, it was during this time that the Eastwick Lower Darby Creek Area Community Advisory Group (CAG) was formed, under the facilitation of Marion Cox. This group was formed more than five (5) years ago and consisted of a majority of Eastwick residents. Its main mission was to make sure that the guidelines for the implementation of the ROD was carried out in the best interest of the Eastwick community. For more than (5) years the EPA and the CAG has had a very positive partnership and guided the remediation process at the landfill to where it is today.

# Eastwick's Community Advisory Group's Notable Achievement Award for 2021

The remediation work around the landfill is not 100% complete, but it's safe to say that the "light can be seen at the end of the tunnel".

The success of the implementation of the selected process called the Evapo-Transpiration cover shines a "spotlight" on the consistent and quality of work being done at the landfill under the supervision of the Region #3 Project manager, Josh Barber. He and his EPA team, along with the CAG, formed a successful partnership that made this remediation process, to this point, successful. It was a proud moment for the Eastwick Lower Darby Creek Community Advisory Group to achieve this recognition on behalf of the Eastwick community.

It is my belief that this successful and productive relationship set the conditions upon which this award was granted. This achievement also provided the Eastwick community with an opportunity to feel more positive about the remediation work at the landfill and to know that their advocacy played a role in this endeavor.

# The 2021 Canoe / Kayak Race

by Aurora Dizel,
DCVA Administrative and Operations Manager

On a warm Sunday in September, a cloudless blue sky above the gentle flow of the Darby Creek set the backdrop of our 2021 Annual Darby Creek Canoe / Kayak Race. We once again hosted this popular annual event at the beautiful Ridley Township Municipal Marina. With 36 racers participating at this year's event it was our biggest turnout in recent years (up from 28 racers in 2020 and 16 in 2019).

Special thanks to DCVA member Rocco Mastricolo for his help in preparing for and also for volunteering at the event. He placed the turnaround buoy for us and paddled the course in the days leading up to the race to check that the recent flooding from Tropical Storm Ida had not created any issues or obstacles for the race. DCVA board members Gerry Krieg and David Bennett were on site lending a hand to keep things running smoothly throughout the day. Thanks also to Glen Green from the Paddlesports Racing Association who assisted us with the pre-race meeting and seeing the racers off at the starting line. As this was the first time that I organized or even attended the race, having the help of so many was so much appreciated!


# The 2021 Canoe / Kayak Race

Not only is DCVA's annual fall race a gathering of great people coming together for friendly competition and a shared love of paddlesports, it's also a wonderful reminder of the importance of the work we do to preserve and protect our beloved Darby Creek and its tributaries all throughout the year. Recreating in and around our waterways is one of the many ways we stay connected to our shared environment and the importance of preserving it for many years to come.

# WA Watershed Resilience, Management and Conservation Plan for the Darby Creek

by Carl Dupoldt, DCVA Board Member
& Kate Doms, DCVA Secretary

On October 21, 2021 The Pennsylvania Department of Transportation (PennDOT), along with other state agencies, announced a pilot project to pave part of a Ridley Creek State Park roadway with an asphalt and recycled plastic mixture (1,2). Asphalt, also known as bitumen, is a sticky, black, highly viscous liquid or semi-solid form of petroleum (3). The majority of asphalt used commercially is obtained from petroleum, but naturally occurring asphalt deposits can be found throughout the world. Canada has the highest asphalt reserves (3). Asphalt pavement is made from asphalt mixed with aggregates--stone, sand, or gravel (3). The recycled plastic in the asphalt in Ridley Creek Park will replace a small portion of the asphalt in the pavement mixture. Plastics and asphalt are obviously not the same materials as each other, but they are both made from petroleum and are compatible enough to be to be mixed (4).

This project is part of the PennDOT Strategic Recycling Program (SRP). PennDOT uses a great deal of raw materials to construct and repair roads and bridges. The PennDOT SRP was established in 1998 to promote and support the use of recycled materials in state highway construction and maintenance projects. PennDOT's objectives for the SRP are to find ways to be environmentally responsible while also growing Pennsylvania businesses (5).

The pilot project is incorporated into a 1.5-mile reconstruction project within the park from the entrance to Pavilion 14. The rest of the roadway is being paved with a standard asphalt mixture to provide a comparison for the new material over the five-year evaluation period. It is hoped that this roadway material will be durable, divert plastics from landfills and help to establish a market for recycled plastic for this use in the future (1,2). Similar projects have occurred elsewhere in the state (6).

China banned the import of plastic waste into China in 2018. Prior to that time, China had been taking and disposing of approximately 45 percent of the world's plastic waste. Plastic is one of the several materials that have been tested for use in asphalt, including glass (7).

Glass is another material that has been used in roadways. Glass recycling is a robust industry in Pennsylvania. However, broken, mixed-color glass below a certain size (maybe ½-inch) cannot be sorted by color and therefore it cannot be recycled. This particulate broken glass, called "cullet", can be crushed and used as aggregate in asphalt (8). Asphalt that contains glass is reflective when the sun hits it at certain angles (e.g. dusk/dawn), it is also slick when wet (9). This material is therefore used more in road bases and other applications rather than road surfaces, although reflection and slickness may be addressed by the glass particle size and percent of the total mixture (9).

Alexis Campbell, PennDOT Press Secretary kindly responded by email to our question about whether plastic release from the road into the environment will be monitored. She stated: "Besides monitoring the technical performance of the asphalt, the potential environmental impact of this product was assessed, including transport/storage and release of microplastics from wear. The asphalt modifier used in this program comes in a stable pellet form that is added to the heated asphalt at the plant. At temperatures above 250o F, the pellets are completely melted within the bitumen and homogenized in the asphalt mix; the typical range of an asphalt plant is over 300oF. Therefore, there is no visible evidence of this product within the pavement.

However, we will still monitor the product for any traces of microplastics in stormwater runoff. Following construction, two times per year during a 'qualifying' rain event for several years, the SRP team will collect stormwater runoff from the control and trial sections of the paved road, which will be analyzed for any evidence of microplastics."

# WA Watershed Resilience, Management and Conservation Plan for the Darby Creek

**Sources:**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# New Green Stormwater Projects Funded in the Darby Creek Watershed

by Jamie Anderson,
DCVA Board Member,
Eastern Delaware County Stormwater Collaborative Director

Glenolden and Morton Boroughs recently received funding to complete large green stormwater infrastructure projects within their communities. The funded projects will help the two boroughs meet their requirements under MS4 Pollutant Reduction Plans. These boroughs are members of the Eastern Delaware County Stormwater Collaborative.

In April 2021 Morton Borough received $97,464 from the Commonwealth Financing Authority for a Watershed Restoration Protection Program. The Commonwealth Financing Authority (CFA) was established in 2004 as an independent agency of the PA Department of Community and Economic Development (DCED) to administer Pennsylvania's economic stimulus packages. The grant funding will be used to retrofit a failed stormwater basin on Country Lane within the Borough just south of Providence Road and close to the borough-line with Secane. The basin will be retrofitted to use native vegetation to treat and reduce nonpoint source pollution to the Shipley branch of Stony Creek. The project will also create a smaller rain garden and bioswale to treat stormwater generated from Sycamore Avenue. A raingarden is a garden planted with water tolerant plants that captures stormwater. A bioswale is a shallow depression to capture stormwater that is also planted with water tolerant vegetation. These features are designed to be attractive and can provide habitat and food for birds, animals, and insects.

The Morton Borough project will reduce sediment load to the Stony Creek watershed by an estimated 1,970 lbs/yr and reduce the volume of stormwater entering the watershed by 39,309,067 gallons/year. These projects will complement the two existing rain gardens at the Morton Borough Hall that were constructed to increase green stormwater infrastructure within the Borough and reduce nonpoint source pollution and flooding downstream.

Glenolden Borough received $175,000 from the National Fish and Wildlife Foundation, Delaware River Conservation Fund. The Borough provided matching funds of $220,257.20. These funds will be used in Glenolden Community Park to redirect flows from an existing 48-inch storm sewer pipe into a created bioswale/wetland. The stormwater feature will remove and treat an approximate 73,000,000 gallons of stormwater annually from entering the Muckinpates Creek which flows into the Darby Creek just north of the Heinz refuge. As part of this project approximately 550 linear feet of stream bank that is severely eroded in some areas will be stabilized by the installation of a native riparian buffer. All told, these projects will capture an estimated 55,645lbs of sediment annually, the leading pollutant that is causing impairment to the Muckinpates and larger Darby Creek Watershed.

Muckinipates Creek flowing through Glenolden Park.

These projects are a focus of the Eastern Delaware County Stormwater Collaborative's holistic approach to their Pollutant Reduction Plan. These projects will benefit the communities in which they are located as well as communities downstream. Further, the green nature of these stormwater projects will increase habitat within the watershed.

## JOIN THE DARBY CREEK VALLEY ASSOCIATION TODAY!

The Darby Creek Valley Association (DCVA) is dedicated to the protection and enhancement of all of the watershed's resources, including water, wildlife, historical sites, and the floodplains. The organizations immediate goals are to prevent all forms of pollution in the Darby Creek and its tributaries, to prohibit dumping and construction on the floodplain and to expand our educational programs for all residents within the watershed. It Also seeks to improve water quality and maintain a debris-free stream through clean-ups and public education. DCVA works to preserve historic properties, such as the Swedish Cabin and the Blue Bell Inn. The Association would like to set aside the more than 30 miles of valley for use as a greenway for all residents to enjoy. We need your support. Help us continue to protect the environment for ourselves and our children.

**We invite you to fill in the form below, check member category, and mail form with your check to: Darby Creek Valley Association, PO Box 732, Drexel Hill, PA 19026 or join at www.dcva.org**

Name:_____Date:_____

Address: _____City:_____State:_____

Phone Number: _____Email Address:_____

***DCVA is a 501(c)(3) Non-Profit Organization – All Donations are tax deductible to the fullest extent of the law.***

| | | |
|---|---|---|
| $15 Senior/Student Membership | $25 Friend Membership | $50 Supporter Membership |
| $100 Patron Membership | $250 Protector Membership | $500 Steward Membership |

***The Valley*** **is the quarterly publication of the Darby Creek Valley Association. Send your articles to Kathryn Goddard Doms Editor kgoddard@ursinus.edu**

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# CALENDAR

DCVA Board meetings:

Dates for board meeting will be posted on our website.

**Tree Planting at Whitby Meadow with Audubon**. Saturday, November 13, 2021 10:00 AM

- Meet @ the intersection of Whitby Ave. & Cobbs Creek Pkwy, Phila. Register at DCVA.org

**Tree & Shrub Planting at McCall Golf Club**. Saturday, November 13, 2021 10:00 AM

- 201 N Lynn Blvd, Upper Darby. Register at DCVA.org

**Annual Meeting Feb 26**