



2024 LOCAL GOVERNMENT SYMPOSIUM
WWSA's Regional Stormwater Program: Municipal Benefits and Lessons Learned

Samantha Albert, PE – Chief Technical Officer
Jeff Colella – Stormwater Division Manager

Wyoming Valley Sanitary Authority (WVSA)

WASTEWATER AUTHORITY – INCORPORATED 1962

STORMWATER DIVISION – CREATED BY AMENDING CHARTER 2017

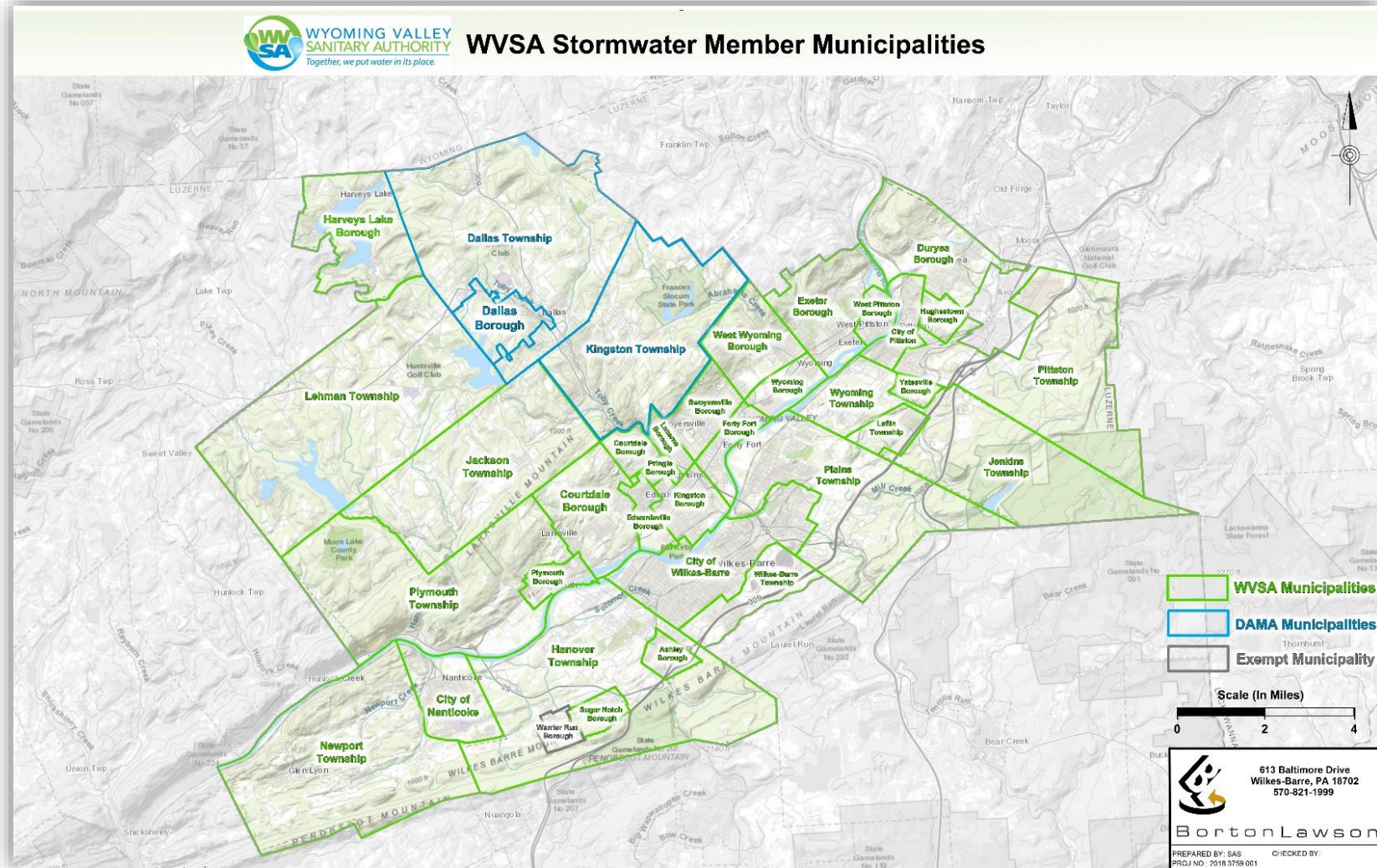


Wastewater – Serve 36 Municipalities in Luzerne County, PA (~200,000 people)

Stormwater – Serve 32 Municipalities in Luzerne County, PA (~175,000 people)



WVSA's Regional Stormwater Program



- 32 Member Municipalities
- 31 Member Municipalities have Small Municipal Separate Storm Sewer System (MS4) Permits – NPDES PAG-13 Permit
- Planning Area covers 400 square miles
- Full-service Stormwater entity

WHY CONSIDER REGIONAL COLLABORATION?

1. **It saves \$\$!**
2. MS4 Permit obligations in future permit cycles
2. LARGE-SCALE grant funding opportunities
3. Holistically solves existing drainage issues
4. Supports watershed planning and management
5. Potential for Stormwater Control Measures/ Best Management Practices to be implemented in areas to solve other stormwater problems
6. Reduces impact on Municipalities' general fund revenue
7. Administrative relief to municipalities & uniform policies and procedures
8. Economies of Scale
 - Eliminate duplication of services
 - Increased purchasing and borrowing power
 - Expanded cost sharing



45% to 95% savings realized for municipal participants in multiple regional programs in Chesapeake Bay Watershed

WVSA Stormwater Fee Rate Structure



Stormwater fee is based upon Impervious Area per property:

Tier	Tier IA Range (sq. ft.)	Monthly Charge	Number of Properties
0	0-99	No Fee	0
1	100-499	\$1.00	1,73
2	500-6,999	\$4.80	64,360
3	7,000+	\$4.80 for 6,999 ft. +\$1.70 per 1,000 sq. ft. IA	7,461

Strategies – Regional Implementation

- Stormwater Pollutant Reduction Plan (PRP)– evaluating projects for cost effectiveness & environmental impact
- Win-Win Projects – addresses MS4 & other Issues (Localized flooding, stormwater runoff, reduce stormwater volume from combined sewers)
- Partnerships – Municipalities, Commercial Developers, Fire Dept, Residential Customers, Schools, other Authorities, Luzerne County
- Projects – multiple consulting firms
- Aggressively pursuing Grants





**WYOMING VALLEY
SANITARY AUTHORITY**
Together, we put water in its place.



The Program

- Regional Mapping of municipal stormwater infrastructure, including inlets, manholes, streams and creeks, piping and outfall locations. Location of AMD, Pathogen and PCB sources
- Municipal Services -- Priority maintenance and emergency services to each municipality
- Municipal Savings Accounts for stormwater infrastructure improvements
- Regional Stormwater Parks – Best Management Practices (BMPs), recreational, educational
- BMP Projects to reduce sediment, nitrogen and phosphorus as required by EPA and PADEP



Goals – PRP Implementation

WVSA Chesapeake Bay Regional Pollutant Reduction Plan Goals

- Reduce Sediment, Nitrogen, & Phosphorus in Stormwater Runoff
- Goal is ~2.3 million lbs/yr Sediment per Year
- Implementation of Water Quality BMPs
- Estimated cost of \$20 Million



Public Outreach & Education Strategies

- Stormwater Credit Program
- Campaign for Otter Mascot
- Public Surveys
- Municipal Steering Committee
- Rebranding/Website Upgrades
- Billing Upgrade/Newsletter Insert
- Outreach to Business Community

STREAMLINE
WYOMING VALLEY SANITARY AUTHORITY NEWSLETTER JANUARY 2021

HELLO! MY NAME IS: STORMY

Wyoming Valley Sanitary Authority's (WVSA) Stormwater Management Division is pleased to announce the conclusion of its **Name the Otter Mascot Contest**.

While the selection of winners among local participating students (Grades 4-6) was disrupted due to the public health crisis, WVSA reached teachers of participating classrooms and rewarded all top-place students, eight of whom submitted the winning entry "Stormy."

WVSA extends its gratitude and appreciation to all participating students and teachers.

Let It Snow THE CLEAN WAY

Pile snow in locations with the most opportunity to infiltrate into the ground and where water doesn't pond, such as lawns.

when it rains IT STORES

Whether they're in your front yard or a local park, rain gardens have many community benefits.

Not only do they reduce the amount of polluted stormwater runoff reaching our local waterways, they also filter pollutants such as pesticides, fertilizers and bacteria. You may have noticed some newly installed rain gardens in your town, which are essential, community projects supported by the Wyoming Valley Sanitary Authority's (WVSA) Stormwater Management Program.

A rain garden is a shallow depression vegetated with native grasses and plants that collect stormwater runoff from downspouts, driveways and roads. Rain gardens typically maintain the water on the landscape so it can be absorbed by plants and grass instead of filtering into streets or down a storm drain. They also help reduce the potential for local flooding, prevent stream erosion, and create diverse habitat for

Home » Stormwater Management

Stormwater Management Public Survey (February 8 – May 8, 2021)

Consistent with our efforts to gauge customer awareness and understanding of WVSA's Regional Stormwater Management Program, we welcome and encourage your participation in the following brief survey.

Your responses will prove valuable to the ongoing assessment of our program and the implementation of necessary changes going forward.

Please choose **one answer** for each of the following questions:

Prior to WVSA's implementation of its Regional Stormwater Management Program, were you aware of state and federal regulations concerning stormwater pollution prevention and management?

Yes
 No

Have you contacted WVSA about a stormwater-related matter (e.g., storm drains, catch basins, street sweeping, etc.)?

Yes
 No

Do you know you can contact WVSA's Stormwater Management Division via email through its website?

Yes
 No

Have you noticed WVSA's storm drain stencils within your community?

Yes
 No

Have you reviewed WVSA's Stormwater Fee Credit Policy?

Yes
 No

I'm not a robot

Submit

Home » Stormwater Management

Stormwater Management by the Numbers

2019 STORMWATER MANAGEMENT BY THE NUMBERS...

<p>LAUNCHED</p> <p>a Twitter account @ WVSAStormSewer</p>	<p>CLEARED</p> <p>2,302</p> <p>YARDS OF DEBRIS</p>
<p>CLEANED</p> <p>754</p> <p>CATCH BASINS to reduce flooding & stem pollutants</p>	<p>SWEPT</p> <p>2,558 SQUARE MILES and 4,883 STREETS</p>
<p>REPLACED</p> <p>117</p> <p>CATCH BASINS</p>	<p>SPONSORED</p> <p>1</p> <p>COMMUNITY CLEANUP EVENT IN WILKES-BARRE TWP.</p>
<p>COSPONSORED</p> <p>4</p> <p>COMMUNITY OUTREACH EVENTS</p>	

MS4/ Stormwater Projects Implemented

WVSA POLLUTANT REDUCTION GOAL

- **2.3 MILLION POUNDS
SEDIMENT REDUCTION PER
YEAR**
- **32 STRUCTURAL PROJECTS →**
Stormwater Basins, Streambank
Restorations, Rain Gardens
- **2 NON STRUCTURAL PROJECTS
→ Street Sweeping & Catch
Basin Cleaning**



Green Infrastructure

- ✓ Rain Gardens
- ✓ Stream Restorations
- ✓ Stormwater Parks
- ✓ Stormwater Basin Retrofits
- ✓ Permeable Pavement
- ✓ Bioretention Swales
- ✓ Wet Ponds
- ✓ New Stormwater Basins

Stream Restoration Project – Spring Run, Hanover Township



BEFORE



AFTER

Spring Run Stream Restoration – Hanover Township



BEFORE



AFTER

Spring Run Stream Restoration – Hanover Township



BEFORE



AFTER

Can Stormwater Management Reduce Flooding Risk?

MAJOR RIVER FLOODING

- MS4 / STORMWATER PROJECTS **WON'T** MITIGATE MAJOR RIVER FLOODING



**West Pittston Borough, Luzerne County, PA
Sept 2011 - Record Flood Stage on Susquehanna River
800+ STRUCTURES DAMAGED**



Can Stormwater Management Reduce Flooding Risk?

SMALLER STREAMS FLASH FLOODING SOLOMON CREEK

HANOVER TOWNSHIP
LUZERNE COUNTY, PA

- MS4/ STORMWATER PROJECTS – **STEP IN THE RIGHT DIRECTION**
- REQUIRES NUMEROUS LARGE-SCALE PROJECTS: FLOODPLAIN RECONNECTION, PONDING/ EXTENDED DETENTION, OR OTHER SW CONTROL PROJECTS THROUGHOUT WATERSHED



SHOPPING PLAZA HARD HIT BY FLOODING

WNEP.COM

5:07
54



SOLOMON CREEK
FLOODING
SEPT 2021



Can Stormwater Management Reduce Flooding Risk?



SMALLER STREAMS FLASH FLOODING TOBY CREEK

- MS4/ STORMWATER PROJECTS – **CANNOT** ADDRESS THIS TYPE OF FLOODING
- HOME LOCATED WITHIN FLOODWAY OF TOBY CREEK

Dallas Township, Luzerne County, PA
August 2024 – Tropical Storm Debby

Can Stormwater Management Reduce Flooding Risk?

LOCALIZED FLOODING

- 6 INCHES OF RAIN IN 18 HRS (AVERAGE RECURRENCE INTERVAL ~100 YR STORM)¹
- 4 FT MAX DEPTH FLOODING
- FLOODING ISSUE **CAN BE** MITIGATED WITH MS4 STORMWATER PROJECT (GRAVITY DRAINAGE INFRASTRUCTURE AND BASIN)

Jenkins Township, Luzerne County, PA
Main Street (S.R. 2024)

September 2021

¹ NOAA Precipitation Frequency
Estimates, Wilkes-Barre &
Wilkes-Barre/Scranton Stations



Can Stormwater Management Reduce Flooding?

LOCALIZED FLOODING

- FLOODING ISSUE **ADDRESSED** WITH STORMWATER PROJECT (GRAVITY DRAINAGE PIPING AND BASIN)



Pittston Township
Luzerne County, PA
Oak Street (S.R. 2019)

July 2019



Impact of MS4 Compliance and Stormwater Management in PA

- **Chesapeake Bay received best grade since 2002 , C+ (from Univ of MD Center for Environmental Sciences) – Upper Bay is the Susquehanna River Watershed, which is ~half of PA**
- **PA has ~86,000 miles of streams, more streams than any other state only 2nd to Alaska; A large natural resource for the Commonwealth to protect ; 34% Streams Impaired (PADEP 2024 Water Quality Report)**
- **Every stream has a floodplain; flood impacts predicted to increase with climate change**



Lessons Learned – Developing A Stormwater Management Plan

- **Think Ahead on Acquiring Easements** - much easier for some projects (Stormwater Basin Retrofits), much more involved for others (Stream Restoration)
- **Public Outreach & Education is key to building support.**
- **Grant opportunities are available** - Look & Promote your program.
- **Continually evaluate projects (Structural & Non-Structural) for cost-effectiveness, environmental impact, & new project opportunities and partnerships. Amend PRP as needed.**
- **Catch Basin Cleaning as compared to Street Sweeping is more cost effective for obtaining Sediment reduction credit.**
- **Streambank Restoration projects in urbanized areas have very positive environmental impact but are a higher risk project for long-term sustainability as compared to Basins.**
- **Support member municipalities addressing stormwater infrastructure issues with economically fair and feasible approaches.**



THANK YOU