



Testimony of
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Pennsylvania Department of Transportation
Public Hearing to Discuss MS4 Requirements
Senate Environmental Resources and Energy Committee
September 11, 2019

Good afternoon, Chairman Yaw, Chairman Yudichak and members of the Committee. On behalf of PennDOT Secretary Leslie Richards, I appreciate the opportunity to testify before you today regarding Municipal Separate Storm Sewer System (MS4) Requirements and PennDOT's coordination with municipalities.

MS4 Municipal Coordination

PennDOT has several partnership projects underway, which are showcased below and are coordinated closely with the Department of Environmental Protection (DEP), which has been supportive of innovative and incentivized municipal partnership opportunities. Specifically:

- DEP agreed that both PennDOT and the municipality can share the sediment reduction credit in each of their Pollutant Reduction Plans if they partner. Some examples of partnering are:
 - PennDOT designs and constructs additional stormwater controls on a project and the municipality agrees to maintain all of the stormwater controls constructed for the project
 - The municipality contributes to the cost of designing and constructing the additional stormwater controls.

- DEP has approved a pilot concept to allow PennDOT to fund design and construction projects identified by municipalities as part of their MS4 pollutant reduction plan for reductions credit under the MS4 program and stream mitigation credit for the project. The concept showcased below is York 105 Mitigation Project.
- DEP has provided funding to incentivize partnerships. An example is identified in the Pilot Sustainable Stormwater Management Project below.

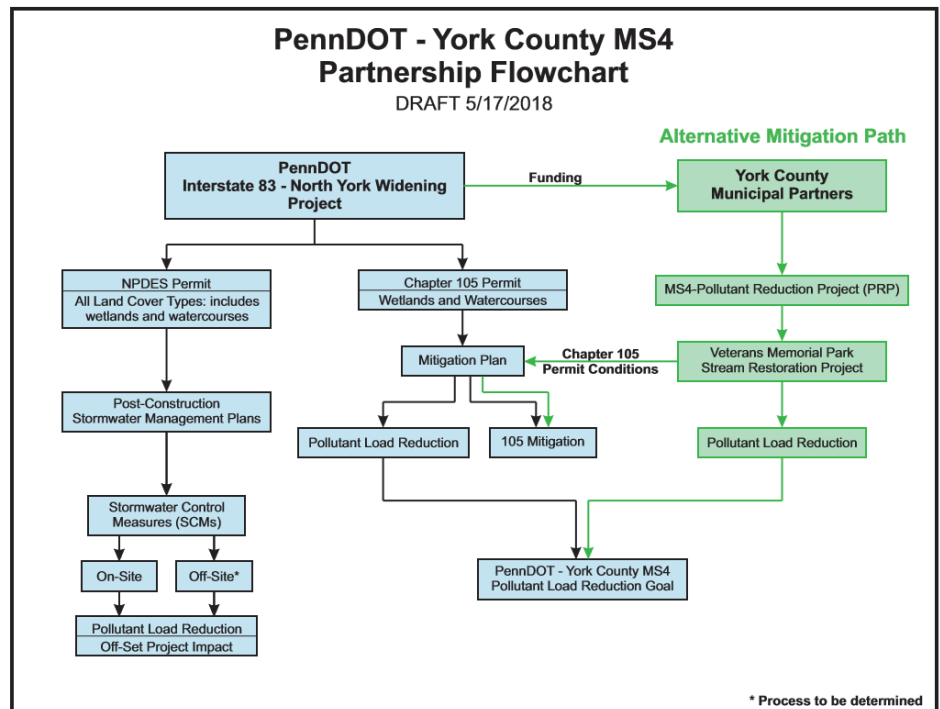
Operational responsibility of the state roadway drainage system

PennDOT's 2007 Transportation Committee Advisory Report identified the management of storm water on state highways as a complex issue. When completing a highway project, PennDOT will design and construct a drainage system and stormwater controls. Legally, cities and boroughs have the responsibility for maintenance of stormwater facilities along PennDOT highways, roads, and bridges.

Municipal Partnership Projects involving MS4

York County 105 Mitigation MS4 Pilot

Engineering District 8 has a \$300M Interstate 83 multi-phase widening project in York County, which can lead as a funding resource for PennDOT's future MS4 requirements relating to its Chesapeake Bay Pollutant Reduction Plan (PRP). The Department of Environmental Protection approved the ability to identify and construct Chapter 105 Mitigation (stream and wetland mitigation projects) and apply sediment reductions resulting from the stream mitigation toward the Department's future MS4 PRP(s).



Chapter 105 mitigation also requires a NPDES permit for construction activities. The NPDES permit boundary includes the impacted waters that generated the need for the Chapter 105 mitigation. The mitigation is not a post construction stormwater measure under a NPDES permit for construction activities. The mitigation is located in a watershed that makes it eligible as a MS4 PRP project (i.e., impaired watershed or Chesapeake Bay watershed). Therefore, MS4 PRP stream restoration should not be considered a stormwater management feature eligible for Chapter 105.12.(a) (6) waiver or 33 CFR 238.3 a. 7 exemption. A preapplication meeting on the MS4 PRP stream restoration is held to discuss the proposed mitigation and the projects requiring Chapter 105 mitigation that the stream restoration will be applied. The Chapter 105 permit application for the MS4 PRP stream restoration designates the projects that the Chapter 105 mitigation will be applied to as advance mitigation and/or PennDOT amends the Chapter 105 mitigation site to its Umbrella Agreement Mitigation Instrument.

Partnership Opportunity: DEP affirmation of this analysis will greatly enhance opportunities for partnerships between PennDOT and municipalities with MS4 PRP obligations. Many municipalities in Pennsylvania have identified worthy water quality improvement projects that would yield significant pollutant reductions but lack funding for permitting and construction. PennDOT could participate as a funding partner in local MS4 PRP projects in exchange for Chapter 105 Advanced Mitigation. These same municipalities are well-suited to provide long-term management and maintenance of the MS4 PRP project sites.

Next Steps: Choose partnering location

Deliverable: Roadway Construction Mitigation, MS4 Credit

Outcome: Municipal Partnership, MS4 Credits

Saw Mill Run

PennDOT and the Pittsburgh Water and Sewer Authority (PWSA) are partnering to reduce sediment discharge in the Saw Mill Run Watershed as part of Pollutant Reduction Plan (PRP) obligations. PennDOT intends to request proposals for a vendor to construct a stream restoration for (sediment impaired) water quality improvements. Proposals will be of a design/build nature providing for design, permitting, acquisition of property interests, construction, inspection, operation, maintenance, post-construction monitoring and long-term operation and maintenance. Long term operation and maintenance will be provided by an entity other than PennDOT. PennDOT will bid and manage the project and provide \$500,000 and PWSA will contribute \$6.4M. Both parties will share the sediment credit.



In evaluating proposals, the award will be based upon a weighted technical criterion and the amount of sediment reduction credit to be achieved in five years also considering the amount of stormwater detention volume (ac-ft) achieved.

Next Steps: Execute partnering Agreement with PWSA and advertise an RFP

Deliverable: Sediment reduction credits

Outcome: Improved water quality

Stream Restoration Municipal Partnership

PennDOT is conducting a detailed literature review on stream restoration and how other state DOTs partner in sharing MS4 Credits. This review will identify other state stream restoration design, construction and maintenance standards. Environmental benefit includes measurable tie to water quality such as sediment, nitrogen and phosphorus reduction. This review will include the cost benefit of conducting

stream restoration as opposed to other stormwater control measures which achieve sediment reduction toward MS4 Permits.

Based upon the findings, the Selected Offeror will develop a Partnership and Deployment Plan that would illustrate written commitment from municipalities, that the municipality agrees to enter into an agreement to share MS4 sediment reduction loading credit from a stream restoration project. The Partnership and Deployment Plan would illustrate what both parties, PennDOT and the municipality, would contribute to see a stream restoration project through completion, i.e. outline what party will design, obtain permits, bid, construct, inspect, maintain, monitor and secure land ownership. Also, design bid build or Public Private Partnership should be considered. The Partnership and Deployment Plan would include project location, scope and a meeting and approval by the Department of Environmental Protection.

Next Steps: Executive partnering agreement & advertise a contract Partnership was offered to the City of Harrisburg, Capital Region Water, Lower Paxton Township, and Susquehanna Township. PennDOT will procure sediment credits to be shared with the partners. PennDOT will provide \$1M and the partners will provide \$1M

Deliverable: Other state best practices, standards & sediment reduction credit

Outcome: Improved water quality



Wildwood Lake, Dauphin County 2019





Codorus Creek

PennDOT will be sharing MS4 Sediment Reduction Credit with the York County Planning Commission as an incentive for operating under a county based MS4 model. After going through a competitive bid process, PennDOT has contracted with Pennsylvania Resource, LLC. (FPR), a wholly-owned subsidiary of RES, LLC (RES) to

complete stream restoration for the Sinking Springs Restoration Site in Manchester Township, York County, PA. The purpose of the project is to provide sediment reduction for PennDOT's MS4 permit compliance, to reduce sediment discharging to the Chesapeake Bay. The proposed project will involve stream restoration with a floodplain restoration approach to restore stream and floodplain areas within the Codorus Creek watershed. The project site is located within an active agriculture field adjacent to Interstate 83 within the urbanized area of York, PA. The proposed restoration will be designed to be a self-sustaining, highly-functioning floodplain system that will reduce pollutant (sediment) loadings by stabilizing eroding banks and reconnecting the mainstem stream with its historic floodplain. Restoration will utilize a combination of channel relocation, floodplain grading, subsurface grade control structures, and habitat structural improvements to restore the channel pattern and floodplain. This will be one of the projects included in PennDOT's pollutant reduction plan for the Chesapeake Bay.



Manchester Township, York County 2019

Next Steps: Approval of MS4 Sediment Reduction Credit from DEP, obtain permits & begin Construction

Deliverable: Sediment reduction credits

Outcome: Improved water quality

Carlisle Rain Gardens

Completed: May 11, 2016

With help from DEP and a collaboration of municipalities in the LeTort Spring Run Watershed, a pilot was formed to manage stormwater on a watershed basis rather than political boundary. DEP and PennDOT provided funding for this effort.

This pilot started with stakeholder support. This led to modeling the entire watershed. The model revealed PennDOT roadways accounted for less than 1% of the total impervious surfaces in the watershed, and was not a significant contributor to the stormwater issues. The study also led to the identification of ten projects to be completed by the stakeholders. PennDOT agreed to construct the first project. The site chosen was rain gardens located in Carlisle, on East High Street and West Trindle Road (State Route 641), which provided stormwater benefits to two neighboring townships, a borough, and PennDOT.

This was the first PennDOT project of its kind where maintenance forces installed a stormwater control measure for water quality along a state highway.

Next Steps: Pursue new innovative collaborative municipal partnerships

Deliverable: Written report and five rain gardens.

Outcome: Municipalities abandoned the partnership-perception was that it was not set up as a fair share model. One private property owner abandoned maintenance of decorative vegetation of a rain garden constructed in their property. PennDOT learned rain gardens do provide volume control/rate control/ water quality benefits, however, the maintenance is intensive to county forces. In order to properly maintain, they are to re-mulch every two years without compacting the soil. In addition, replace any dead or dying plantings, hand cut any overgrowth, repairs to intake/outlet structures, etc.



Municipal Partnership Examples involving Stormwater

Bloomsburg - Lime Ridge Corridor Hydrology Study

Project Description:

Low-lying areas along the Bloomsburg - Lime Ridge Corridor experience frequent and damaging localized flooding. Increased storm water flowing from gaps in the low ridge that parallels U. S. Rt. 11 in South Centre Township settles into the low-lying areas along this highway and are not able to drain to the river. This causes frequent and expensive disruptions to major manufacturers which are among the largest employers in Columbia County. At the west end of the proposed study corridor, storm water in southwestern Scott Township collects into Kinney Run and flows through the Town of Bloomsburg, emptying into the Susquehanna River at the end of Market Street. During high water events, Kinney Run and the Susquehanna River typically flood at the same time which exacerbates the flooding issues in the Town of Bloomsburg by flooding areas of U.S Rt. 11 and the town itself.

Over the last several decades Columbia County has seen large amounts of development which results in impermeable surfaces such as roofs, parking lots, local roads and sidewalks that increase storm water runoff. To decrease flooding impacts along the Bloomsburg - Lime Ridge Corridor, local officials and businesses are researching methods to increase storm water drainage capacity, contain storm water, and divert Kinney Run before it gets to the Town and causes flooding. This project will mainly impact census tracts 508 & 509 with small portions of tracts 510 & 511 on the west side of the study area.

Historically, early settlers located near waterways to utilize the water for agriculture, consumption, energy, waste disposal, travel and more. Today the development along the low-lying Bloomsburg - Lime Ridge Corridor has caused increased storm water runoff which, in turn, increases localized flooding events in and around those areas. This project area contains over 1,700 residences and 239 industrial and commercial properties which include Columbia County's largest employers.

The collaborative partnerships for this regional project include the local elected officials of South Centre Township, Scott Township, and the Town of Bloomsburg. Local industry as well as the SEDA-COG Joint Rail Authority are also investing in the project.

Next Steps: This project will study the hydrology, hydraulics, and hydrogeology of the area to determine if and where to implement methods to increase storm water drainage capacity, contain storm water, and determine if Kinney Run can be diverted to decrease flood activity.

Deliverable: Written report

Outcome: Three Communities and project identified for future implementation. By implementing channel improvements that we can reduce flood costs and damage and also reduce sediment inputs

Ohiopyle Multimodal Gateway Project

PennDOT's District 12-0, Ohiopyle Multimodal Gateway (OMG) Project located within Ohiopyle Borough and Ohiopyle State Park includes a redesigned parking lot to allow for stormwater runoff volume reduction and water quality benefits.



This project involved approximately 13 acres of earth disturbance. The entire project is situated within a few hundred feet of the Youghiogheny River.

Under Pennsylvania Code, the Youghiogheny in Ohiopyle has a special protection designation of High Quality – Cold Water Fishery. Also, it was known through public and municipal involvement, that the area of Sugarloaf Road experienced high runoff volumes during storm events. The proposed design included oversized drainage design.



Photo 1: Youghiogheny River

Proposed Construction

Final design involved removal of pavement in some places and additional pavement in others. Pervious pavements are rarely encountered but are slowly becoming more common. This project incorporated standard pervious pavement design details which were adopted in the PennDOT Pavement Policy Manual in October 2016.

Stormwater Mitigation



Photo 2: Parking lot pervious subbase

The following were incorporated into the project:

- Use of Permeable Pavement for the parking lot
- Use of Permeable Pavement for the proposed off-road bike path
- A Vegetated Swale to divert upslope runoff around the parking lot
- Disconnection from Storm Sewers / Vegetated Slopes

Compliance with Requirements

Three potential points of interest were evaluated, including the bike path, vegetated swale, and pervious parking lot.

For water quality purposes, more than 90% of the 0.61 acre area of new pavement was documented to drain to either pervious pavement, the vegetated swale, or was disconnected from storm sewers in favor of vegetated slopes.

Public Concerns

While not a requirement, PennDOT District 12, in an effort to be a good neighbor, listened to the public and municipal concern about stormwater runoff in the area around Sugarloaf Road. As part of



Photo 3: Completed parking lot

the Sugarloaf Road relocation, inlets at the top (east side above the proposed parking lot) were oversized to collect more runoff. Additional inlets were also provided, beyond that required by criteria. The intent of the additional stormwater drainage features is to convey water away from developed areas of the Borough where drainage issues have been a public concern. This aspect of the design will make the proposed drainage / stormwater design much more resilient.

Next Steps: Under Construction

Deliverable: Runoff reduction

Outcome: Improved water quality and provides a resilient design