

# **Mercer County Watersheds**

## **Act 167 Stormwater Management Plan**

### **5.1.5. Neshannock Creek Watershed**

The following municipalities lie within the Neshannock Creek watershed: All of Coolspring Township, a portion of Delaware Township, a portion of East Lackawannock Township, a portion of Fairview Township, all of Findley Township, all of Fredonia Borough, all of Jackson Center Township, all of Jackson Township, a portion of Jefferson Township, a portion of Lake Township, all of Mercer Borough, a portion of Otter Creek Township, a portion of Perry Township, a portion of Springfield Township, a portion of Wilmington Township, a portion of Wolf Creek Township, and a portion of Worth Township.

Within the Neshannock Creek watershed, the primary stormwater related concern was increased runoff, with secondary issues being undersized culverts and poor drainage. Other issues included: stream flooding, stream erosion, ponding and road flooding, and floodplain development. (Appendix C, Figures 9 & 10)

The Neshannock Creek watershed is located in the southeast portion of Mercer County, adjacent and to the west of the Wolf Creek watershed. It drains an area of approximately 123,406 acres (192.8 square miles), of which 92,815 acres (145.0 square miles) are located within Mercer County. This watershed's drainage flows out of the county to the south and drains into the Beaver River, part of the Ohio River watershed. In general, the Neshannock Creek watershed is relatively flat in topography with some steep slopes along the southern reach of Neshannock Creek. The watershed consists of poorly drained soils with underlying bedrock that has moderate to low porosity and permeability, predisposing the area to excess runoff. High density urban areas exist in Mercer and Fredonia. There are several high density urban areas dotted along Route 62, and a low density urban/commercial area around Lake Latonka. All of the urban areas can cause increased runoff due to increased pavement from parking lots and roads. When mismanaged, this runoff will flood Neshannock Creek and its tributaries. The remainder of the watershed is forested in the south central portion and consists primarily of farmland in the north. Following is a detailed description of the Neshannock Creek watershed within Mercer County:

Soils – Neshannock Creek is underlain by the Wayland, coarse variant-Papakating-Red Hook association, found on nearly level floodplains underlain by alluvium. This soil association ranges from very poorly drained to moderately drained. The Chenango-Braceville-Halsey association is found in the south in the floodplain of the creek. This association consists of well drained to very poorly drained soils found on gently sloping to moderately steep stream terraces and moraines underlain by sandy and gravelly deposits. In the north, the Canfield-Ravenna association is common. This association is moderately drained to somewhat poorly drained and is found on gently sloping to moderately steep uplands underlain by glacial till. The remainder of the watershed contains the Ravenna-Frenchtown association, somewhat poorly drained to poorly

drained soils found on nearly level to gently sloping uplands. (Appendix A, Figure 6.) The Neshannock Creek watershed within Mercer County also contains 53,655 acres (83.8 square miles) of prime farmland soils, the majority of which are being farmed, especially in the north. (Appendix A, Figure 5.)

Geology – Underlying Neshannock Creek is approximately 12,046 acres (18.8 square miles) of the Shenango formation. This formation is composed of siltstone and has moderate to low porosity and moderate to low permeability. Approximately 1,358 acres (2.1 square miles) of the Cuyahoga group also underlies a small portion of the creek. This association is composed of sandstone and has low porosity and low permeability. Approximately 60,041 acres (93.81 square miles) of the Pottsville formation underlie this watershed. This formation consists of shale, siltstone, claystone, limestone, and coal. It has variable porosity and moderate to low permeability. Only 1,358 acres (2.1 square miles) of the Cuyahoga formation are found within this watershed. This formation is composed of sandstone and has low porosity, and low permeability. (Appendix A, Figure 3.)

Slope – In general, the part of the Neshannock Creek watershed that lies within Mercer County is somewhat flat with rolling hills having 0%-15% grade. There are some slopes >25% along the southern reach of Neshannock Creek. (Appendix A, Figure 4.)

Land Use – Appendix A, Figure 7 contains a map of the primary land uses within Mercer County, overlain with the watershed boundaries. The following table presents coverage of the most dominant land uses within the watershed:

Land Use	Acres	Square Miles	Percent of Watershed
Farmland	39,832	62	43%
Forested	39,366	62	42%
Wetland	3,244	5.1	<1%
Low Density Urban	1,891	3.0	<1%
High Density Urban	1,512	2.4	<1%
Water	825	1.3	<1%

**Stormwater Management Issues Identified as Significant by Each Municipality within the Neshannock Creek Watershed**

**Coolspring Township**

- The maintenance of debris transported and collected by Tributary 35698 to Otter Creek. Coolspring Township has suggested cleaning the creek channel.
- Stabilizing peak flow conditions.
- Decrease watershed pollution including dissolved and un-dissolved pollutants from increased runoff causing negative impacts to recreation, aesthetics, and in-stream habitat.
- Maintain groundwater supplies as increasing runoff decreases the amount of rain that becomes groundwater. Decreased groundwater supplies may have

negative effects on well water supplies or dry up stream baseflow in dry periods.

- Control the erosion of stream beds and banks, undercut roads and utilities, damage to in-stream cover, and clogging of bridges and culverts during extreme storm events.
- Regulate and monitor overbank flows associated with extreme storm events.

### **Delaware Township**

- Control the erosion of stream beds and banks, undercut roads and utilities, damage to in-stream cover, and clogging of bridges and culverts during extreme storm events.
- Stabilizing peak flow conditions.
- Regulate and monitor overbank flows associated with extreme storm events.
- Property damage, bridge/culvert damage, and street flooding have occurred along Redfoot Road as a result of poor drainage and undersized structures insufficiently transporting stormwater.
- Property damage, bridge/culvert damage, street flooding, and scour at outfalls has occurred along Kelso Road as a result of poor drainage and undersized structures insufficiently transporting stormwater.
- Delaware Township feels that current practices need to be made friendlier when replacing existing structures (i.e. bridges, large culverts); for instance, the permit process needs to be waived or expedited.

### **East Lackwanna Township**

- Control the flooding of streams and streets, soil erosion, stream bed and bank erosion, in-stream sedimentation, habitat/resource damage caused by increased runoff from the development of parking lots, yards, streets, and roads.
- Decrease watershed pollution including dissolved and un-dissolved pollutants from increased runoff causing negative impacts to recreation, aesthetics, and in-stream habitat.
- Maintain groundwater supplies as increasing runoff decreases the amount of rain that becomes groundwater. Decreased groundwater supplies may have negative effects on well water supplies or dry up stream baseflow in dry periods.
- Monitor and management of increased runoff from Gabany's proposed development near the borough of Mercer.

### **Findley Township**

- The dredging and cleaning of the Pine Run tributary in several areas where they run adjacent to a township or state road.
- Noted a severe runoff issue one mile north of the intersection of Elliott Road and Springfield Church Road, on Springfield Church Road.

- Culverts or bridges are clogged due to increased runoff and poor drainage in Pine Run, Tributary 63829 to Pine Run, and Tributary 35770 to Mill Creek. Findley Township proposes clearing or dredging debris from Pine Run.
- A runoff problem exists on the properties between McMillan Road, Mariacher Road, Clintonville Road, Scrubgrass Road, and Route 58. Findley Township proposes the implementation of a SWMP.
- Stormwater leeching from mismanaged driveways and private property during and after construction.
- Inadequate drainage culverts on state highways causing flooding during severe storm events.
- Stabilizing peak flow conditions.
- Decrease watershed pollution including dissolved and un-dissolved pollutants from increased runoff causing negative impacts to recreation, aesthetics, and in-stream habitat.
- Control the erosion of stream beds and banks, undercut roads and utilities, damage to in-stream cover, and clogging of bridges and culverts during extreme storm events.
- Stream flooding, increased sedimentation in streams, and bed and bank erosion caused by increased runoff and poor drainage.
- Findley Township would like to discuss the regulations associated with cleaning the streams, and would like to have a copy of the current watershed management procedures.

#### **Borough of Fredonia**

- Moderate stream flooding caused by increased runoff.

#### **Jackson Township**

- The property adjoining logged areas near intersection of Cape Horn Road and Cottage Road is prone to severe flooding and property damage after storm events. Jackson Township has contacted the PaDEP, the property owner, and the logging company with no result.
- The property surrounding Tributary 35820 to Cool Spring Creek has experienced flooding and property damage after severe storm events. Jackson Township has replaced and enlarged a culvert pipe and redirected the flow of water.
- Sewage drainage from Jackson Center Borough Sewer Plant has entered Yellow Creek creating concerns surrounding fish and wildlife health. Jackson Township has contacted the PaDEP, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, and the Jackson Center Borough with no result.
- Flooding, bank erosion, property damage, and surface water/bridge concerns occur on South Foster Road following severe storm events.
- Flooding and bridge concerns occur on Millbrook Road following severe storm events.

- Water runoff following severe storm events causes safety concerns associated with culverts, berms, and ditches along South Foster Road. Jackson Township has attempted to fill ditches with oversized rock for drainage.
- Controlling runoff and stream erosion.
- Decrease watershed pollution including dissolved and un-dissolved pollutants from increased runoff causing negative impacts to recreation, aesthetics, and in-stream habitat.
- Maintain groundwater supplies as increasing runoff decreases the amount of rain that becomes groundwater. Decreased groundwater supplies may have negative effects on well water supplies or dry up stream baseflow in dry periods.
- Regulate and monitor overbank flows associated with extreme storm events.

### **Jefferson Township**

- Stabilizing peak flow conditions.
- Control the erosion of stream beds and banks, undercut roads and utilities, damage to in-stream cover, and clogging of bridges and culverts caused by increased surface runoff during extreme storm events.

### **Borough of Mercer**

- Frequent flooding specific to inadequate state highway drainages exemplified by Maple Street. Storm culverts have been installed by the state in few areas.
- Poor stormwater controls surrounding the school. Stormwater (catchbasin) facilities installed by the school.
- Management of stream, street, and property flooding caused by the natural terrain and topography of the eastern portion of Mercer Borough.
- Stabilizing peak flow conditions.
- Controlling stormwater from bordering municipalities.
- Controlling stormwater from the school district.

### **Otter Creek Township**

- Control the erosion of stream beds and banks, undercut roads and utilities, damage to in-stream cover, and clogging of bridges and culverts caused by increased surface runoff during extreme storm events.
- Maintain groundwater supplies as increasing runoff decreases the amount of rain that becomes groundwater. Decreased groundwater supplies may have negative effects on well water supplies or dry up stream baseflow in dry periods.
- Stabilizing peak flow conditions.
- Regulate and monitor overbank flows associated with extreme storm events.
- Property damage, bridge/culvert damage, stream, street, and property flooding have occurred as a result of poor drainage and undersized structures insufficiently transporting stormwater.

### **Springfield Township**

- Extreme storm events cause stream flooding, property damage, erosion of stream banks and beds, and bridge/culvert damage caused by increased surface runoff and poor drainage.
- Stabilization of peak flow conditions.
- Control the erosion of stream banks and beds, causing undercut roads and utilities, damage to in-stream habitat, clogging to culverts and bridges.
- Decrease watershed pollution including dissolved and un-dissolved pollutants from increased runoff causing negative impacts to recreation, aesthetics, and in-stream habitat.

### **Wilmington Township**

- Control the erosion of stream banks and beds, soil erosion, in-stream sedimentation, undercut roads and utilities, damage to in-stream habitat, clogging to culverts and bridges caused by increased runoff, poor drainage, and undersized structures.
- Control the erosion of farmland soils in the vicinity of White Chapel Road.
- Control the erosion of stream banks and beds, and scour at outfalls along Indian Run in the vicinity of Indian Run Road.
- Maintain groundwater supplies as increasing runoff decreases the amount of rain that becomes groundwater. Decreased groundwater supplies may have negative effects on well water supplies or dry up stream baseflow in dry periods.
- Stabilizing peak flow conditions.

### **Wolf Creek Township**

- Maintenance and control of flooding associated with small tributaries during extreme storm events.
- Regulate and monitor overbank flows associated with extreme storm events.
- Control the erosion of stream banks and beds, soil erosion, in-stream sedimentation, undercut roads and utilities, damage to in-stream habitat, clogging to culverts and bridges caused by increased runoff.

### **Worth Township**

- Regulate moderate stream bed and bank erosion.

### **Agency Comments**

- *PA Game Commission:* Acid Mine Drainage on State Game Land #284 east of Pennsy Road in Springfield Township.
- *PA Game Commission:* Possible runoff, pollution from the Old Fredonia Dump on State Game Lands #294 in Fairview Township.
- *PA Game Commission:* Potential Acid Mine Drainage from Old Mine #2 (out of Mercer County) could enter the county.

- *Shenango River Watchers*: Runoff from Auto Auction reached Coolspring Creek and caused trout kill.
- *PA Fish & Boat Commission*: Fertilizer run-off into Coolspring Creek and flowing into Lake Latonka is causing algae in the lake.
- *PA Fish & Boat Commission*: Acid Mine drainage in Neshannock Creek Watershed into Otter Creek near Scrubgrass Road.
- *Mercer County Conservation District*: Un-named tributary of Munnell Run from Lamor Road in East Lackawannock Township to mouth has flooding and sedimentation.
- *Mercer County Conservation District*: Un-named tributary of Neshannock Creek from US 62 to Brandy Springs Park in Mercer Borough has flooding and sedimentation.
- *Mercer County Conservation District*: Munnell Run from US 19 to mouth has flooding and bank erosion.
- *Mercer County Conservation District*: Otter Creek from ITT Reznor to mouth in Mercer Borough has flooding and bank erosion.
- *Mercer County Conservation District*: Coolspring Creek at SR 58 in Mercer Borough has flooding.
- *Mercer County Conservation District*: Neshannock Creek from SR 58 in Mercer Borough to Blacktown Road has bank erosion and flooding.
- *Mercer County Conservation District*: Coolspring Creek upstream of Lake Latonka has sedimentation and bank erosion.