

Mercer County Watersheds

Act 167 Stormwater Management Plan

5.1.6 Little Neshannock Creek Watershed

The following municipalities lie within the Little Neshannock Creek watershed: A portion of East Lackawannock Township, a portion of Hermitage, a portion of Jefferson Township, a portion of Lackawannock Township, a portion of Shenango Township, and a portion of Wilmington Township.

The primary stormwater concern within the Little Neshannock Creek watershed was increased runoff. Secondary issues were undersized culverts, and poor drainage. Other issues mentioned included development within floodplains, field flooding, and streambank erosion. (Appendix C, Figures 11 & 12)

The Little Neshannock Creek watershed is located adjacent to and just west of the Neshannock Creek watershed. It drains an area of 32,410 acres (50.6 square miles), of which 26,768 acres (41.8 square miles) are located within Mercer County. This watershed's drainage flows out of Mercer County to the south and into Neshannock Creek which flows into the Beaver River, part of the Ohio River watershed. In general, the Little Neshannock Creek watershed is somewhat flat in topography, becoming steeper along Little Neshannock Creek. It consists of poorly drained soils with underlying bedrock that has moderate to low porosity and permeability, predisposing the area to excess runoff. Areas of high density urban land use within the watershed include New Wilmington and small areas of high and low density urban land use dotted along Route 518. The remainder of the watershed consists mainly of a mixture of forest and farmland. Wetlands are also noted in the vicinity of Little Neshannock Creek. These wetlands provide flood storage and help water to infiltrate into the groundwater rather than running off into and flooding nearby creeks. Following is a detailed description of the Little Neshannock Creek watershed within Mercer County:

Soils – Little Neshannock Creek is surrounded by the Canfield Ravenna association, found on gently sloping to moderately steep uplands underlain by glacial till. It is a moderately well drained and somewhat poorly drained soil association. Parts of this watershed also contain a small amount of the Chenango-Braceville-Halsey association, a well drained to very poorly drained soil type found on gently sloping to moderately steep stream terraces and moraines underlain by sandy and gravelly deposits. 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.) This watershed also contains approximately 14,598 acres (22.8 square miles) of prime farmland soils, the majority of which are being farmed. (Appendix A, Figure 5.)

Geology – At the northern tip of the watershed is a small, 32 acre (.05 square mile), section of the Shenango formation, composed of siltstone, and having moderate to low

porosity and moderate to low permeability. The majority of the watershed, 23,951 acres (37.4 square miles), is composed of the Pottsville formation, composed of shale, siltstone, claystone, limestone, and coal. This formation has variable porosity and moderate to low permeability. Approximately 2,794 acres (4.4 square miles) of the Allegheny formation is found within the Little Neshannock Creek watershed. This formation has moderate to low porosity and moderate to low permeability. (Appendix A, Figure 3.)

Slope – The majority of the watershed is flat, having 0%-8% grade. The watershed becomes relatively hilly around Little Neshannock Creek and its West Branch, having 16-25% grade. Parts of the land along Little Neshannock Creek, is very steep and has a >25% grade. (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	12,642	19.8	47%
Forested	10,065	15.7	38%
Wetland	1,176	1.8	<1%
Low Density Urban	791	1.2	<1%
High Density Urban	326	0.5	<1%
Water	48	0.1	<1%

Stormwater Management Issues Identified a Significant by Each Municipality within the Little Neshannock Creek Watershed.

East Lackwanoock 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.

City of Hermitage

- Moderate stream flooding caused by increased runoff.

- 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 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.
- 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.
- Maintenance and control of flooding associated with small tributaries during extreme storm events.
- Allocating the funding to maintain the existing stormwater system and to make improvements.

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.

Shenango 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.
- Monitor and management of increased runoff and field flooding on Fennel 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.
- 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.

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, especially along Bend Road, Garrett Road, Orchard Road, Means Road, and Ferris Road.

- East and West branch of Little Neshannock Creek have flooding, erosion, and sediment deposition issues, especially at the Gilliland and Campbell properties.
- Scouring at outfalls along Garrett Road, with soil erosion and culvert problems also noted.
- 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.
- Monitor and manage the potential for soil runoff, animal waste and fertilizer contamination into streams due to primary land use within the township being agricultural.

Agency Comments

- *Mercer County Conservation District:* Little Neshannock Creek in Wilmington Borough from SR 158 south to county line has bank erosion, sedimentation, and flooding.