5.1.3 Wolf Creek Watershed

The following municipalities lie within the Wolf Creek watershed: All of Grove City Borough, a portion of Liberty Township, all of Pine Township, a portion of Springfield Township, a portion of Wolf Creek Township, and a portion of Worth Township.

The primary stormwater concern in the Wolf Creek watershed was increased runoff. Secondary issues included poor drainage and stream flooding. Other issues mentioned were: bank erosion, inadequate stormwater facilities, and clogged culverts. (Appendix C, Figures 5 & 6.)

The Wolf Creek watershed makes up the southeast corner of Mercer County. It drains approximately 63,870 acres (99.8 square miles), of which 50,078 acres (78.2 square miles) are located within Mercer County. This watershed's drainage flows out of the county to the south and into Slippery Rock Creek which flows into the Beaver River, part of the Ohio River watershed. In general, the Wolf Creek watershed is relatively flat in topography. 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 Grove City and East Lackawannock. As development continues in these areas and in areas in the headwaters of the Wolf Creek watershed, runoff will increase due to the increase of impermeable surface (paving, structures, etc.) coupled with the impermeable soils and bedrock. The remainder of the watershed consists mainly of a mixture of forest and farmland. Wetlands are also noted in the vicinity of Wolf 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 French Creek watershed within Mercer County:

Soils – The primary soil association is the Ravenna-Frenchtown association. This association is found on nearly level to gently sloping uplands within the watershed and ranges from somewhat poorly drained to poorly drained. The Chenango-Braceville-Halsey association is prevalent along Wolf Creek and Swamp Run. This association can range from being well drained to very poorly drained and is found on gently sloping to moderately steep moraines and stream terraces and is underlain by sand and gravel deposits. A small portion of the Canfield-Ravenna association can be found in the extreme south along Wolf Creek. This soil association can be moderately well drained and somewhat poorly drained, and is found on gently sloping to moderately steep uplands underlain by glacial till. (Appendix A, Figure 6.) This watershed also contains 25,250 acres (39.5 square miles) of prime farmland soils, of which approximately 1/3 are currently used for farming. (Appendix A, Figure 5.)

Geology – The main bedrock feature in this watershed is the Pottsville formation, encompassing 30,835 acres (48.2 square miles). This formation is composed of shale,

siltstone, claystone, limestone, and coal. It has variable porosity and a moderate to low permeability. The northern part of the watershed contains 3,844 acres (6.0 square miles) of the Shenango formation, consisting of siltstone, and having moderate to low porosity and permeability. Approximately 15,400 acres (24.1 square miles) of the Allegheny formation, composed of limestone, clay and coal, and having low porosity and moderate to low permeability can be found in the south east. (Appendix A, Figure 3)

Slope – Though the majority of the watershed is relatively flat, having 0-8% grade, some of the areas around streams have steeper slopes ranging from 9%-25% grade. These areas are found mainly in the north. (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
Forested	22,363	34.9	45%
Farmland	18,187	28.4	36%
Wetland	2,752	4.3	<1%
High Density Urban	1,932	3.0	<1%
Low Density Urban	940	1.5	<1%
Water	568	0.9	<1%

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

Borough of Grove City

- Completion of the East Pine Street storm water collection system to alleviate localized flooding and ponding concerns.
- Management of flooding increased by development and inadequate storm facilities**.** The construction of a new storm sewer from CN Railroad along East Pine Street to Wolf Creek may solve this problem.
- Stabilization of peak flow conditions.
- Control of stream, street, and property flooding issues associated with extreme storm events.
- Management of sediment transport issues including scour at outfalls, property damage, and in-stream sedimentation.
- Decrease watershed pollution including dissolved and un-dissolved pollutants from increased runoff causing negative impacts to recreation, aesthetics, and in-stream habitat.

Liberty Township

- Extreme storm events cause street flooding, soil erosion, and damage to bridges/ culverts. Increased runoff has caused these problems to escalate in particular in the areas of Old Mill Road and Plain Grove Road.

Pine Township

- Maintenance and control of culverts that have occasionally been clogged.
- Property flooding, property damage, and stream bed/bank erosion 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, and clogging to culverts and bridges.

Springfield Township

- Maintenance and control of stormwater caused by increased runoff along Route 208, near Prime Outlet Mall.
- 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, and 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.

Wolf Creek Township

- Find and implement a solution to the Beaver Dam problem on Scrub Grass Road. This is a potentially very dangerous situation and lowering the Beaver Dam and installing guide rails may alleviate the danger.
- Maintenance and control of flooding associated with small tributaries during extreme storm events.
- Low areas prone to flooding exist at: Sophen Road near the eastern most tributary of the East Branch of Wolf Creek, at Patterson School Road at the southernmost tributary to the East Branch of Wolf Creek, and at Creek Road at a northern tributary to Wolf Creek.
- General stream flooding due to heavy rainfall occurs along Centertown Road at the East Branch of Wolf Creek.

Worth Township

- Regulate moderate stream bed and bank erosion.

Agency Comments

- *PA Fish & Boat Commission*: Direct access of storm drain into creek at Oregon Road in Springfield Township.
- *PA Fish & Boat Commission*: Wolf Creek is full of sediment downstream from site of dam removal.

- *Mercer County Conservation District:* Wolf Creek upstream of SR 108 through the Borough of Grove City to the Borough line has bank erosion and sedimentation.