

Mercer County Watersheds

Act 167 Stormwater Management Plan

5.1.1 French Creek Watershed

The following municipalities lie within the French Creek watershed: All of New Lebanon Township, portions of Mill Creek Township, portions of French Creek Township, and portions of Deer Creek Township.

Within the French Creek watershed, the primary stormwater related concern was increased runoff, with the secondary issues being road flooding, erosion along roadways, and poor drainage. (Appendix C, Figures 1 & 2.)

The French Creek Watershed is located in the northeast corner of Mercer County. It drains an area of approximately 430,665 acres (672.9 square miles), of which 21,409 acres (33.5 square miles) are located within Mercer County. This watershed's drainage flows out of the county to the east and into the Allegheny River watershed. In general, the French Creek watershed consists of poorly drained soils and underlying bedrock that has moderate to low porosity and permeability, predisposing the area to excess runoff. Following is a detailed description of the portion of the French Creek watershed that lies within Mercer County:

Soils –The French Creek watershed, including its major tributaries (Deer Creek and Mill Creek) is dominated by the Canfield-Ravenna association. This soil type is typically found on gently sloping to moderately steep hillsides underlain by glacial till. The soil varies from moderately well drained to somewhat poorly drained, depending on its location. A small portion of French Creek is also underlain by the Chenango-Braceville-Halsey association, a soil type found mainly on stream terraces and moraines. This soil type is found on gently sloping to moderately steep hillsides and is underlain by sand and gravel, therefore it can range from being well drained to very poorly drained. The remainder of the watershed consists of the Ravenna-Frenchtown association. (Appendix A, Figure 6.) This soil association can be found on nearly level to gently sloping uplands within the watershed. It is a somewhat poorly drained to poorly drained soil association. The French Creek watershed within Mercer County also contains approximately 11,560 acres (18 sq. mi.) of prime farmland soils, most of which is currently forested. (Appendix A, Figure 5.)

Geology – The section of the French Creek watershed underlying French Creek itself contains approximately 1,288 acres (2.0 square miles) of the Corry Sandstone through Riceville Formation, undivided, composed mainly of shale. This bedrock type has a moderate porosity and a moderate to low permeability. Surrounding that formation is approximately 815 acres (1.3 square miles) of the Cuyahoga formation, composed of sandstone. This bedrock type has low porosity and low permeability. Approximately 6,039 acres (9.4 square miles) of the Shenango formation, composed of siltstone, can be found underlying Deer Creek and Mill Creek. The Shenango formation has moderate to

low porosity and moderate to low permeability. Approximately 13,155 acres (20.6 square miles) within the watershed consist of the Pottsville formation, composed of shale, siltstone, claystone, limestone and coal. This formation has variable porosity and moderate to low permeability. The remainder of the watershed contains 109 acres (0.17 square miles) of the Allegheny formation, a formation consisting mainly of limestone, clay and coal. (Appendix A, Figure 3.)

Slope – In general, the part of the French Creek watershed that lies within Mercer County is relatively hilly in topography. There are steeper slopes (9-15% and 16-25% grade) found around the streams, with relatively steep slopes (>25% grade) located along French Creek in the extreme northeast corner of the watershed. The western portion of the watershed is relatively flat, having 0-8% slopes. (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	11,790	18.4	55%
Farmland	8,073	12.6	38%
Wetland	416	0.7	<1%
Low Density Urban	167	0.3	<1%
High Density Urban	138	0.2	<1%
Water	117	0.2	<1%

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

Borough of New Lebanon:

- Manage stormwater and field runoff causing damage to roads and the overflow of ditches (especially along Gorden Road).
- 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 stream and street flooding, soil erosion, stream bed and bank erosion, and damage to bridges and culverts caused by increased runoff.
- Control property flooding and damage.

Deer Creek Township:

- Finding funding to respond to stormwater related issues within Deer Creek Township including road flooding and berm erosion caused by excessive runoff, especially along Deer Creek Road.
- Poor drainage and infiltration due to existing soil types.
- Control erosion caused by excessive runoff entering the stream along Deer Creek Road north of the stream. Deer Creek Township is currently working with the county to improve road ditches.
- Stabilizing peak flow conditions.
- 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.
- Resolve street and stream flooding caused by increased runoff and poor drainage.

Agency Comments

- *Mercer County Conservation District:* North Deer Creek in French Creek Township along Creek Road to mouth has bank erosion, sedimentation, and flooding.
- *Mercer County Conservation District:* Powdermill Run in French Creek Township from the county line to the mouth has sedimentation, bank erosion, and flooding.