III. PREVIOUS AND CURRENT PLAN EFFORTS

An Act 167 Plan was developed separately for the Brodhead Creek (1991) and McMichaels Creek (1988) watersheds by the Monroe County Planning Commission and combined as part of the 2003 update. Standards and criteria were developed and incorporated into a model municipal ordinance. The 2022 Plan Renewal is considered a "straight renewal" of the 2003 Plan Update. The limited updates to the 2003 Plan were made to account for high tunnel farming practices, updated and new technology BMPs, consistency with 25 Pa. Code Chapter 102 Erosion and Sediment Control, and to provide updated release rate district mapping.

A. POCONO CREEK PILOT PROJECT

Throughout the process of the Brodhead and McMichaels Creek Watershed Act 167 Stormwater Management Plan 2003 update, the Pocono Creek Pilot Project was concurrently being conducted. The Pocono Creek is a tributary of the McMichaels Creek and eventually also the Brodhead Creek. The Pocono Creek Pilot Project entailed developing community-based goals and objectives which yielded the following water resources and community goals:

- Improve water quality
- Preserve stream corridors and floodplains
- Coordinate watershed planning process with other levels of government
- Maintain existing stream flow
- Preserve open space
- Develop using village centers and conservation design
- Establish an environmentally compatible economy.

Four main water resource disciplines were identified to evaluate and determine targets in order to develop a means to achieve these goals. These four water resource related disciplines included:

Water Quality

- Maintain existing water quality where it is better than state standards
- Improve water quality to meet state standards

Stream Channel Stability

- Maintain natural stable streams
- Re-establish stability to unstable streams

Stream Flow

- Provide necessary stream flows to support a natural ecosystem

Aquatic Ecology (Macroinvertebrates)

- Restore or maintain an optimal biological community in each management area

Since the municipalities in the Pocono Creek watershed extend into the Brodhead and McMichaels Creek Watershed, it is safe to assume that the same concerns would be applicable to the Brodhead and McMichaels Creek watersheds. The Pocono Creek Pilot Project did not specifically address "water quantity" or stormwater and floodplain management since the Brodhead/McMichaels Creek Act 167 Plan was addressing that goal. A watershed under natural conditions is in equilibrium, with aquatics, water quantity, stream bank erosion and sedimentation and stream flows typically under "stable" conditions. It is the influence of man, or anthropogenic changes to the land surface including regrading, impervious area, pollutant

accumulation and washoff that alters this equilibrium. Many of the detrimental effects of these disturbances occur during rainstorm events. Therefore, water quantity or stormwater management from new development is a means to achieve many of the goals of the Pocono Creek Pilot Project and maintain the hydrologic regime of the watershed in general. The final report from the project is available online and is titled "Framework for Sustainable Watershed Management – Pocono Creek."

Water Quantity Management

Manage stormwater to achieve the objectives below:

- Minimize flooding
- Prevent future stormwater flows from being greater than predevelopment flows
- Manage flows to prevent accelerated stream bank erosion
- Treat stormwater to improve the quality of the stormwater runoff
- Recharge the groundwater to replenish groundwater supplies and stream base flow.

As one can see, the objectives above can be achieved through the five-phase approach to stormwater management, which also achieves the four goals of the Pocono Creek Pilot Project. The five-phase approach to stormwater runoff is described in Section IV.

Mapping of the watershed management districts as defined in this study can be found on the Monroe County Conservation District website.

Flood Plain and Riparian Buffer Management

Floodplains and riparian buffer areas store flood waters reducing flooding downstream, allow sediment to settle, provide groundwater recharge, keep stream temperatures cooler, remove nutrients, provide important wildlife habitat, and preserve stream banks. Filling floodplains, on the other hand, in accordance with current flood plain ordinance criteria, not only is a detriment to the natural functions above, but also acts to channel the flood flow volumes and sediment downstream, causing increased flooding and sedimentation problems. In addition, structures and fill in floodplains are prone to damage. Proper stormwater management, should therefore include riparian and floodplain preservation. The Chesapeake Bay Riparian Handbook has identified the following recommended minimum buffer widths to aid in the following functions:

- Stream bank stabilization – 40 feet
- Water temperature moderation – 60 feet
- Nitrogen removal – 140 feet
- Sediment removal – 160 feet
- Flood mitigation – 220 feet
- Wildlife habitat – 275 feet

Source: USDA Forest Service, Chesapeake Bay Riparian Handbook: A Guide for Establishing and maintaining Riparian Forest Buffers, June, 1998

B. WATERSHED PLAN ADVISORY COMMITTEE (WPAC)

The current plan effort involves the updating and renewal of the Act 167 Plan to meet current standards. For the current effort, the Watershed Planning Advisory Committee (WPAC) for both watersheds was reorganized with representatives from each municipality within the two watersheds.

A Technical Subcommittee was formed to review and revise the Plan and present the final document for review by the WPAC. Meetings were held throughout the planning process to develop an understanding of the updated criteria and to solicit input as to how these criteria can be best implemented within the watersheds. Input was obtained from the WPAC members as to how the existing ordinances were being implemented and the effectiveness of their implementation.

An Educational Subcommittee was formed to provide community education on the Act 167 planning and adoption process through a series of webinars, workshops and presentations. Subcommittee members attended and presented at the Monroe County Council of Governments (COG) meeting in July 2021.

A summary of the WPAC meetings, and their purpose, is included on the following page.

Table III-1
Formation of the Watershed Plan Advisory Committee

WPAC Planning Meetings

- Committee Formation Meetings: **6/25/20, 7/24/20, 10/14/20, 11/9/20, 11/18/20, 1/29/21, 2/3/21, 2/18/21**
- WPAC Meeting dates: **2/24/21, 5/27/21, 12/9/21**
- Form WPAC and subcommittees - **3/5/21**
- Subcommittees Meeting dates: **3/18/21, 4/15/21, 5/13/21, 6/17/21, 7/15/21, 8/12/21, 9/30/21, 10/27/21**

Technical Tract

- Review/Audit of existing plans
- Draft Update Reviewed by DEP and WPAC – ***Provided to DEP and WPAC 1/28/22; Comments submitted by 3/1/22***
- Monroe County Public Hearing (*two weeks* public notice) – ***Notice sent out 3/2/22; Public hearing held 3/16/22***
- Monroe County Commissioners Resolution to renew adoption – ***4/20/22***
- Pike County Public Hearing (*two weeks* public notice) – ***Notice sent out 5/17/22; Public hearing held 6/1/22***
- Pike County Commissioners Resolution to renew adoption – ***6/1/22***
- *90 Days* DEP and DCED Review
- DEP Approved plan or Revisions
- Municipalities have *six months* to adopt or amend ordinances

Municipal and Public - Educational Tract

- Monroe County Stormwater Planning Survey- ***11/23/20; sent to 1420 recipients, 85 people responded.***
- Survey 123 - Municipal hot spots -***7/28/2021; sent to 73 recipients, 27 people responded.***
- Webinar Educational Series:
  - Public on Facebook - "Stormwater Takeover" Webinar Shorts – ***7/26/21 – 8/2/21; 1939 people reached***
  - Municipal (Zoning and Supervisors) - Email Webinar series – ***7/26/21 – 8/3/21***; ***7 townships participated***
- Monroe County Council of Governments Meeting Presentation and Q/A – ***7/26/21 @10am***
- Rain Barrel Workshop – ***6/30/21 with the Brodhead Watershed Association***
- Riparian Buffer Planting / Workshop – ***4/2/22 with U.S. Fish & Wildlife Service – Cherry Valley National Wildlife Refuge, Penn State Extension Master Watershed Steward Program, and The Friends of Cherry Valley***
- Municipal Stormwater BMP tour and Ordinance adoption Updates – ***Fall 2022***