

PADEP MS-4 – NPDES
TMDL PLAN
NEW BRITAIN BOROUGH
BUCKS COUNTY, PA

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Prepared For:
New Britain Borough
45 Keeley Avenue
New Britain, PA 18901
215-348-4586

Prepared by:
Mark G. Hintenlang, P.E.
34 Francis Meyers Road
New Britain, PA 18901
215-348-5962

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I. General –

The scope of the TMDL plan (Total Maximum Daily Load (pollutants)) is to reduce pollutants to the local streams thereby reducing pollution further downstream. The affected drainage areas are contributory areas to the Neshaminy Creek which in New Britain Borough include the Pine Run Creek, Cooks Run Creek and the Neshaminy Creek. These areas were to have TMDL's in 1995, but we are just now getting around to planning and implementing them.

The Clean Water Act requires states to list all waters that do not meet their water quality standards even after pollution controls required by law are in place. For these waters, the state must calculate how much of a substance can be put in the water without violating the standard and distribute that quantity to all the sources of the pollutant on that water body.

The pollutants in our creeks are as follows:

Pine Run Creek – Excessive algae growth

Cooks Run – Nutrients

Neshaminy Creek – Pathogens, Nutrients, Organics, low dissolved oxygen, siltation and suspended solids.

These streams have varying issues which must be addressed according to state regulations. The streams' conditions must first be evaluated and verified with the above information, and then proposed alternate methods for correction.

For example, the algae in the Covered Bridge Pond may contribute to the streams health, so a treatment at the pond may benefit. The nutrients at Cooks Run could be caused by over fertilization of the neighboring yards and lack of a riparian buffer. The Neshaminy siltation and suspended solids may be addressed by decreasing the amount of grit put on the roads in the winter and using a more concentrated salt treatment, or brine. Also, point discharge users (such as Del Val Concrete) which generates a lot of sediment, contributes directly to the stream sediment pollution. Additional street sweeping may also benefit.

II. Proposed Total Maximum Daily Loads (TMDL) -

The Clean Water Act sets a national minimum goal that all waters be “fishable” and “swimmable.” Water quality standards are state regulations that have two components. The first component is a use, such as “warm water fishes” or “recreation.” States assign a protected use, or several uses, to each of their waters. The second component relates to the instream conditions necessary to protect the use(s). These conditions or “criteria” are physical, chemical, or biological characteristics, such as temperature and minimum levels of dissolved oxygen, and maximum concentrations of toxic pollutants. It is the combination of the “use” and the “criteria” that make up a water quality standard. If any criteria are being exceeded, then the use is not being met and the water is said to be in violation of water quality standards or impaired.

Neshaminy Creek is impaired due to high concentrations of phosphorus in the water and silt covering the creek beds. The TMDL includes a plan for decreasing the instream phosphorus concentrations and for reducing the sediment loads delivered to the streams, in order to meet Pennsylvania water quality standards.

III. Correction Measures for TMDL Reduction -

We need to determine how much pollution we need to remove as this has a direct reflection on costs. The pollutant levels are measured at different stream flow levels for different pollutants and then evaluated for potential removal. This will be the evaluation for removing the pollutants from the streams.

IV. Recommendations

At this preliminary stage the following is recommended for the following streams:

1. **All Creeks:** Eliminate use of grit mixed with salt for winter months. This involves discussions and pricing changes to the New Britain salt prices from New Britain Borough.
2. **All Creeks:** Additional street sweeping. This can be arranged with Chalfont Borough, or by hiring other street sweeping contractors.
3. **Neshaminy Creek:**
 - a. Develop a plan with Del Val Concrete (DVC) to reduce sediment loading to South Shady Retreat Road. A storm collection filtration system should be considered along with more frequent street sweeping and a watering system to direct the sediment to a filtration system. The Borough has contacted DVC and found that they are interested in working with the Borough to help reduce pollution in this manner.
 - b. Investigate methods to reduce the number of pathogens by first investigate the source discharge, or by providing treatment to the water, or embankments themselves.
 - c. Investigate methods to reduce the number of nutrients. This would be mostly lawn fertilizers.
 - d. Investigate methods to increase dissolved oxygen levels. This can be done by reducing nutrients, fertilizers and phosphorus into the streams.
4. **Pine Run Creek:** Investigate methods to reduce algae. A primary source of this is shallow slow moving water, or ponds. The Covered Bridge Park is a targeted area to reduce algae from entering Pine Run Creek.
5. **Cooks Run Creek:** Investigate methods to reduce the number of nutrients. This would be mostly lawn fertilizers



Neshaminy Creek @ Cook Run confluence



Cooks Run Erosion 1



Cooks Run Erosion 2



Cooks Run Erosion 3



Cooks Run Raparian Buffer



Covered Bridge Park Pond - Algae



Pine Run Creek – Trees down



Sediment along roads



Del Val Concrete – sediment 1



Del Val Concrete – sediment 2