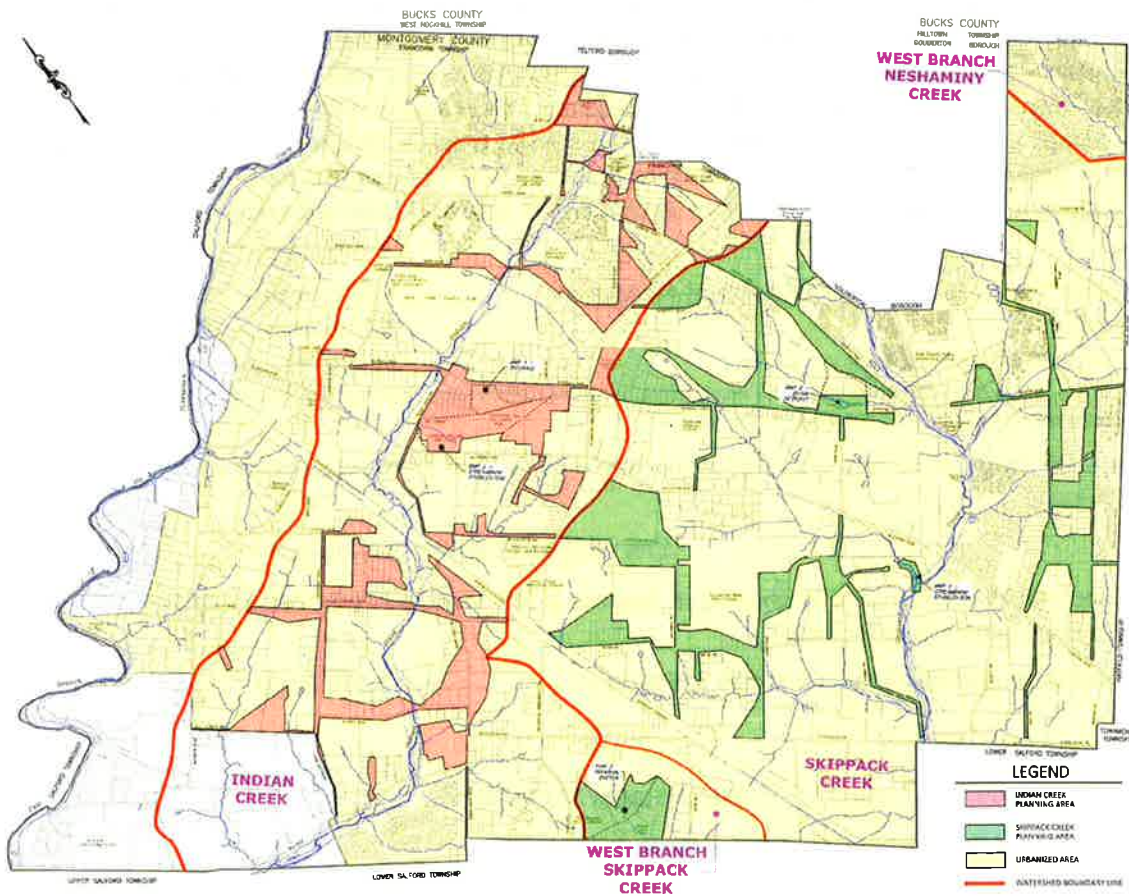


DRAFT
Executive Summary of the Proposed
Franconia Township MS4 TMDL/PRP Plans
July 9, 2017

- A. Skippack Creek Sediment TMDL and Nutrient PRP (incl. West Branch Skippack Creek)**
- B. Indian Creek Nutrient TMDL and Sediment PRP**
- C. West Branch Neshaminy Creek PRP**
- D. East Branch Perkiomen Creek**



FRANCONIA TOWNSHIP POLLUTANT REDUCTION PLAN (PRP)
INDIAN CREEK & SKIPPACK CREEK WATERSHEDS

A. Skippack Creek Sediment TMDL and Nutrient PRP (incl. West Branch Skippack Creek)

Impairments: Excessive blooms of algae, Siltation, and flow variability. Excess nutrients, erosion and sediment

Sources: small residential runoff, land development, agricultural and municipal point sources

TMDL: April 9, 2005, Sampling 2004

Based on the TMDL Plan, the Township's Existing Sediment Load and Reduction Requirement are:

2004 Existing Franconia Township Sediment Load per TMDL = 3,329,329 lb/yr
2004 TMDL Sediment Load Reduction Required for Franconia Twp (18%) = 601,019 lb/yr

New modeling efforts allow MS4s to recalculate the existing loads. Using Mapshed software, the Township's new Existing Load and Required Reduction Load are as follows:

2017 Existing Franconia Township Sediment Load per Mapshed = 2,597,480 lb/yr
2017 TMDL Sediment Load Reduction Required for Franconia Twp = 468,915 lb/yr

The existing and reduction load comparisons show a 22% reduction from the TMDL requirement. Without having the supporting documentation from the TMDL Plan describing the assumptions used in determining the existing loads, we can speculate that the difference in loads may be attributed to a number of improvements implemented since the stream sampling was performed. Attached is a list of projects from Franconia Township which included structural and non-structural BMPs, as well as, land use changes. It appears that the Township has achieved more than the required 18% reduction with improvements installed since the 2004 Sampling. However, the Township is still required to propose a 5% nutrient reduction for the required PRP. In order to address these requirements Mapshed was first used to parse out areas of the Township they are not responsible for in order to determine an adjusted loading based only on the MS4 Planning Area.

Total Franconia Twp. Skippack Creek Watershed Acreage =	3,903 Acres	100%
Parsed Areas* =	3,249 Acres	83%
Franconia Twp MS4 Planning Area =	681 Acres	17%

*Direct discharge areas, areas from Private/PennDOT/Pennsylvania Turnpike Commission drainage areas, areas addressed under a Chapter 102 NPDES Permit, areas which do not drain to the MS4, etc.

The 2017 ADJUSTED TMDL Sediment Load Reduction Required for the Franconia Township Planning Area (Minus Parsed Areas):

17% of 468,915 lb/yr = 79,715 lbs/yr

Under a combined PRP/TMDL Plan, the Township can propose a 10% sediment reduction for this permit term and assume a 5% total phosphorus reduction.

10% Required Sediment Reduction= 0.10*79,715 lb/yr = 7,971 lbs/yr

Potential Improvements

BMP Option 1: Streambank Restoration (up to 495 LF): up to 22,000 lb/yr

BMP Option 2: Wet Pond Retrofit at Enos Godshall Park: 5,725 lb/yr

BMP Option 3: Riparian Buffer Restoration (400 LF) 12,604 lb/yr

B. Indian Creek Nutrient TMDL and Sediment PRP

Impairments: salinity, siltation, and nutrients

Sources: municipal point sources, agriculture, urban and residential stormwater runoff, and sewage effluent at two locations

TMDL: Nutrient TMDL 2008 (Sediment Remanded), Sampling 1996, 2004

Based on the TMDL Plan, the Township's existing nutrient load and reduction requirement are:

2004 Existing Franconia Township Nutrient Loading per TMDL = 2,863 lb/yr

2004 TMDL Nutrient Load Reduction for Franconia Twp (74%) = 736 lb/yr.

New modeling efforts allow MS4s to recalculate the existing loads. Using Mapshed software, the Township's new Existing Load and Required Reduction Load are as follows:

2017 Existing Franconia Township Nutrient Loading per Mapshed = 956 lb/yr

2017 TMDL Nutrient Load Reduction for Franconia Township(74%) = 248 lb/yr

The existing and reduction load comparisons show a 67% reduction from the TMDL requirement.

$$(2,863-956)/2,863 = 0.67 \text{ or } 67\%$$

The EPA issued errata to the Indian Creek Nutrient TMDL on May 19, 2015, which requires a 74% reduction of total phosphorus for Franconia Township. The existing and reduction load comparisons show a 67% reduction from the TMDL requirement. Therefore, the Township has achieved all but 7% of the required reduction with improvements installed since the 2004 Sampling. The Township is also required to propose a 10% sediment reduction (which assumes a 5% reduction in nutrients) for the required PRP. Thus, the Township can carry over the remaining nutrient reduction to the next permit term. In order to address these requirements Mapshed was first used to parse out areas of the Township they are not responsible for in order to determine an adjusted loading based only on the MS4 Planning Area.

Total Franconia Twp. Indian Creek Watershed Acreage = 3,084 Acres 100%

Parsed Areas = 2,299 Acres 75%

Franconia Twp Planning Area (MS4 System Watershed) = 786 Acres 25%

*Direct discharge areas, areas from Private/PennDOT/Pennsylvania Turnpike Commission drainage areas, areas addressed under a Chapter 102 NPDES Permit, areas which do not drain to the MS4, etc.

Since the Indian Creek Sediment TMDL was voluntarily withdrawn, Mapshed was used to calculate the existing loads:

Calculated Baseline Load from Mapshed 233,347 lbs/yr

10% Required Sediment Reduction = 0.1 * 233,475 = 23,347 lb/yr

Potential Improvements

BMP Option 1: Bioswale: 813 lb/yr

BMP Option 2: Streambank Restoration (500 LF): 22,575 lb/yr

BMP Option 3: Riparian Buffer Restoration: 6,779 lb/yr

C. West Branch Neshaminy Creek PRP

Franconia Township is required to submit a PRP Plan for a portion of Sub-Basin #4 of the West Branch Neshaminy Creek for the ostensible impairment due to excessive algal growth, nutrients, organic enrichment and low dissolved oxygen (D.O.).

Based on PADEP’s eMapPA, the sections within Franconia Township are impaired for siltation due to agriculture (Seg ID 2899, 2002) and small residential runoff (Seg ID 2868, 2008). The aquatic use is warm water fishes. The reference watershed approach was developed to identify the water quality objectives. Per the December 2003 Neshaminy Creek TMDL, the following chart summarizes the Sediment TMDLs for this sub-basin:

Summary of Sediment TMDLs for West Branch Sub-basin #4 (lbs/yr)						
Pollutant	TMDL	MOS	WLA	LA	LNR	ALA
Sediment	5,998,845	599,885	-	5,398,990	570,350	4,828,640

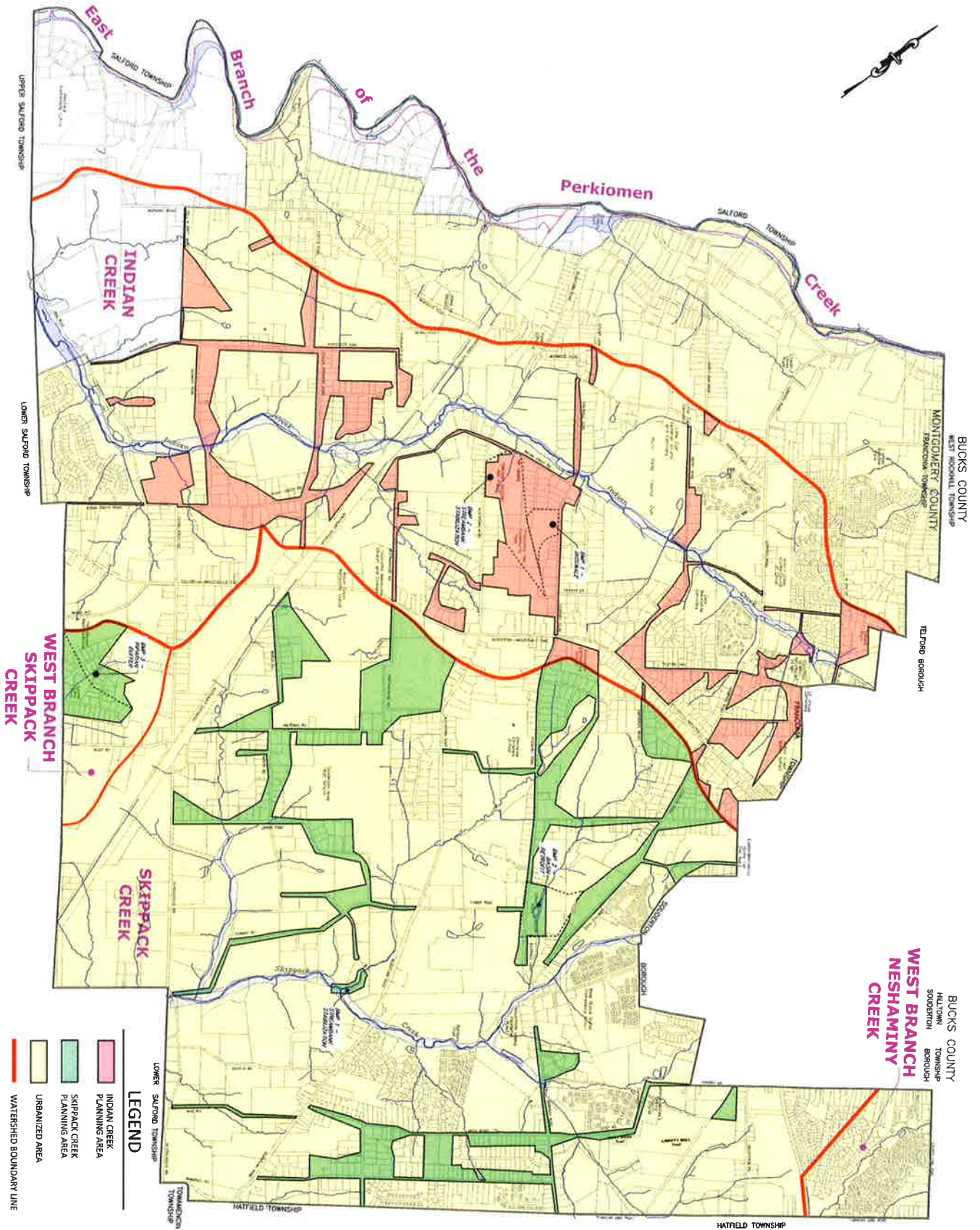
It appears that all areas within Franconia’s West Branch Neshaminy Creek watershed are privately owned or maintained by others.

Total Franconia Twp. WBN Creek Watershed Acreage =	144 Acres	100%
Parsed Areas =	144 Acres	100%
Franconia Twp Planning Area (MS4 System Watershed) =	0 Acres	0%

D. East Branch Perkiomen Creek

The East Branch of the Perkiomen Creek is currently not listed as impaired. An Act 167 Plan, issued prior to 2005, is in effect and the Township Code is consistent therewith. No additional measures are offered in this Strategy.

Franconia will continue within the East Branch of the Perkiomen Watershed to enforce Township Code Stormwater Management provisions including the 6 minimum measures under the existing, and future, Act 167 Plans along with revisions and updates to the Township Code to be completed within one year consistent with the Permit’s ‘Appendix A’, Stormwater Management Program (SWMP), and the MS4 Stormwater Operation and Maintenance Ordinance Checklists and MS4 Stormwater Management Ordinance Checklist.



**FRANCONIA TOWNSHIP POLLUTANT REDUCTION PLAN (PRP)
INDIAN CREEK, SKIPPACK CREEK,
& WEST BRANCH NESHAMINY CREEK WATERSHEDS**

