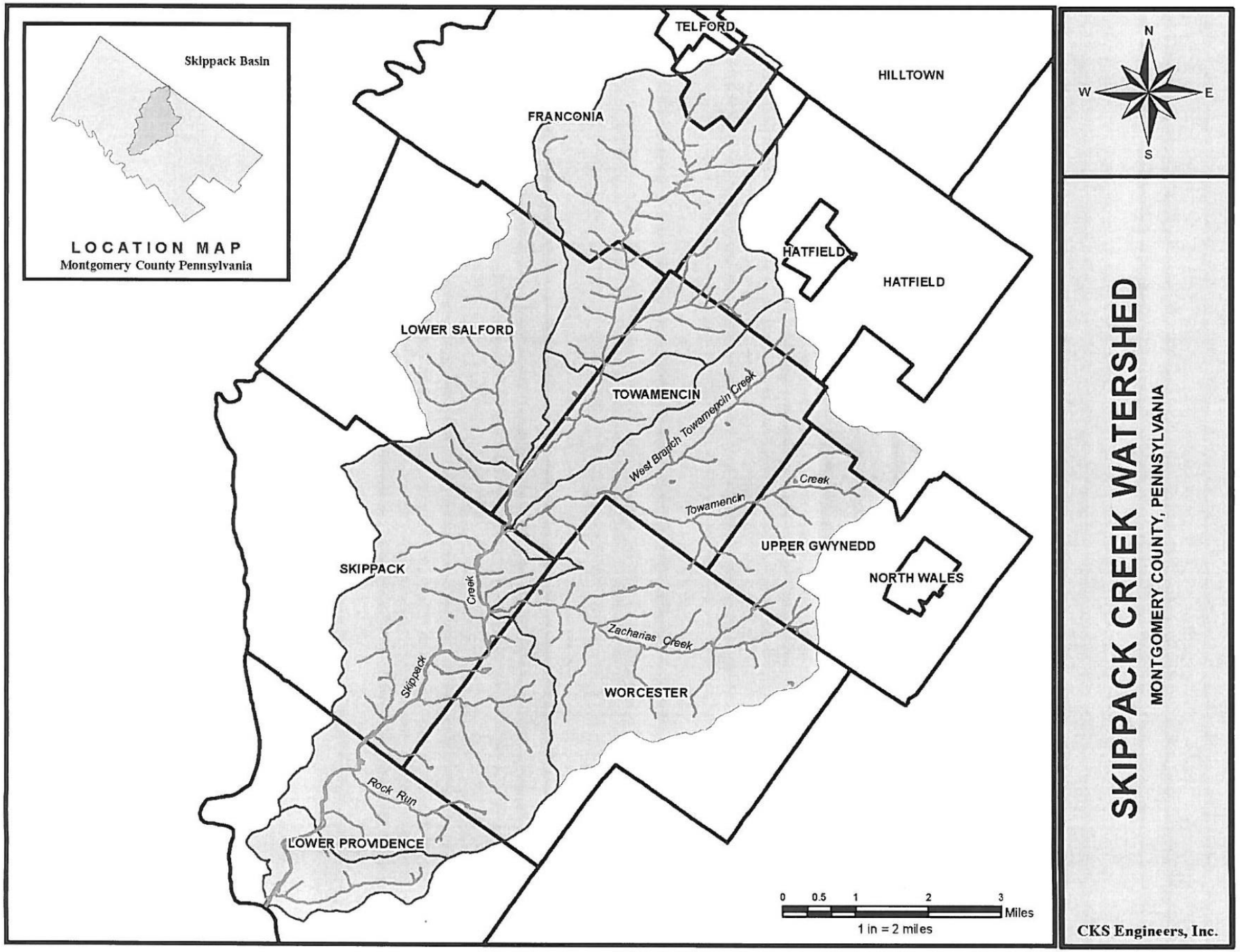
Worcester Township

Skippack Creek Modeling

Skippack Creek TMDL

- The Total Maximum Daily Load (TMDL) for Skippack Creek was established in a report by EPA Region III on April 8, 2005
- This TMDL report requires an 18% reduction in sediment load for each of the municipalities within the Skippack Creek Watershed
- There are 12 municipalities within the Skippack Creek Watershed


Skippack Basin
LOCATION MAP
Montgomery County Pennsylvania
TELFORD
HILLTOWN
FRANCONIA
HATFIELD
HATFIELD
LOWER SALFORD
TOWAMENCIN
West Branch Towamencin Creek
Towamencin Creek
UPPER GWYNEDD
NORTH WALES
SKIPPACK
Skippack Creek
Zacharias Creek
WORCESTER
Rock Run
LOWER PROVIDENCE
0 0.5 1 2 3 Miles
1 in = 2 miles
N
W
E
S
SKIPPACK CREEK WATERSHED
MONTGOMERY COUNTY, PENNSYLVANIA
CKS Engineers, Inc.

Required Sediment Load Reduction for Worcester Township

Cover Condition	Current Load (lbs/year)	Waste Load Allocation (lbs/year)	18% Reduction (lbs/year)
Hay/Pasture		20,533	
Cropland		2,020,108	
Coniferous Forest		698	
Mixed Forest		997	
Deciduous Forest		2,827	
Transitional Land		1,325	
Low Intensity Development		412,557	
High Intensity Development		6,701	
Stream Bank Erosion		1,898	
Groundwater		1,272,366	
Point Source			
Septic Systems			
Total	4,563,192	3,740,010	823,182

Tables 21 and 22, pgs 41 and 43 in Skippack TMDL report

Sewersheds & Parsing

- CKS Engineers is currently mapping the sewersheds (or drainage areas) for each outfall in the MS4 Area within Worcester Township.
- Once completed, portions of the Skippack Creek Watershed within Worcester Township can be parsed out or removed from the area of responsibility if the area does not flow to a regulated storm sewer system.
- Parsing will reduce the existing sediment load and the quantity of reduction required to achieve the required 18% reduction.

Proposed Skippack Creek Modeling

- Several of the municipalities within the Skippack Creek Watershed have been considering a proposal to update the modeling of the Skippack Creek Watershed using an updated version of the model used to establish the TMDL requirements. This would reduce the allocated sediment load within the Watershed.
- Municipalities Considering the Modeling include:
  - Skippack Township – Approved Participation
  - Lower Providence Township – Approved Participation
  - Lower Salford Township – Approved Participation
  - Towamencin Township – Considering Participation
  - Hatfield Township – Considering Participation
  - Worcester Township – Considering Participation

Scope of Work for Skippack Creek Modeling

PHASE 1

- Watershed modeling of Skippack Creek using updated model
- Obtain concurrence with PADEP for model
- Coordination with municipalities, county and state agencies and other stakeholders to determine potential projects
- Evaluate up to 5 potential large scale projects to address sediment reduction requirements for the overall watershed

PHASE 2

- Prioritize projects based on cost-benefit analysis as well as other factors
- Identify grant funding options
- Prepare final report with TMDL Strategy Plan
- Public Presentation of TMDL Strategy

Sediment Loads for Worcester

Skippack Creek Watershed	Waste Load Allocation (lbs/year)	18% Reduction
From TMDL Report	4,563,192	823,182
With Updated Model (30% reduction)	3,194,234	574,962

NOTE: These values are without parsing which will further reduce the quantity of required sediment load reduction.

Advantages to Participating in the Modeling Effort

- 30% Reduction of required sediment load reduction for Worcester Township
- Evaluation of potential BMPs to meet the TMDL requirements
- Cost and benefit sharing between the participating municipalities for the modeling and for the implementation of future BMPs
- Greater ability to obtain grant funding due to multi-municipal cooperation

Modeling Costs

- The cost for participation in Phase 1 of the Scope of Work is $13,053 with 5 participating municipalities.
- Currently 3 municipalities have approved the Scope of Work and 3 additional municipalities are considering participation. If all 6 municipalities agree, the cost will be reduced.

Recommendation

- Participation in the updated modeling of the Skippack Creek sediment loads will benefit Worcester Township by potentially providing a 30% reduction in the allocated sediment load, and provide for opportunities to collaborate with other municipalities to achieve the TMDL requirements.
- CKS Engineers, Inc. recommends that Worcester Township participate in Phase 1 of the proposed Skippack Creek modeling.