LANSDALE BOROUGH STORMWATER PROGRAM

OVERVIEW OF MS4 TMDL STRATEGY REPORT

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PRESENTATION OUTLINE

- Background
- Borough MS4/TMDL Requirements
- Strategy Report Development
- Implementation Timeline & Cost
- Questions/Comments

ACRONYMS

MS4 = Municipal Seperate Storm Sewer System

TMDL = Total Maximum Daily Load

WLA = Wasteload Allocation

BMP = Best Management Practice

PA DEP = Pennsylvania Department of Environmental Protection

NPDES = National Pollutant Discharge Elemination System

CWA = Clean Water Act

What is MS4?

Municipal

System owned or operated by a public agency, such as a city, town, county, flood control district, state, or federal agency

Separate

Does *not* connect to the sanitary sewer system and does *not* lead to a wastewater treatment plant

Storm Sewer System

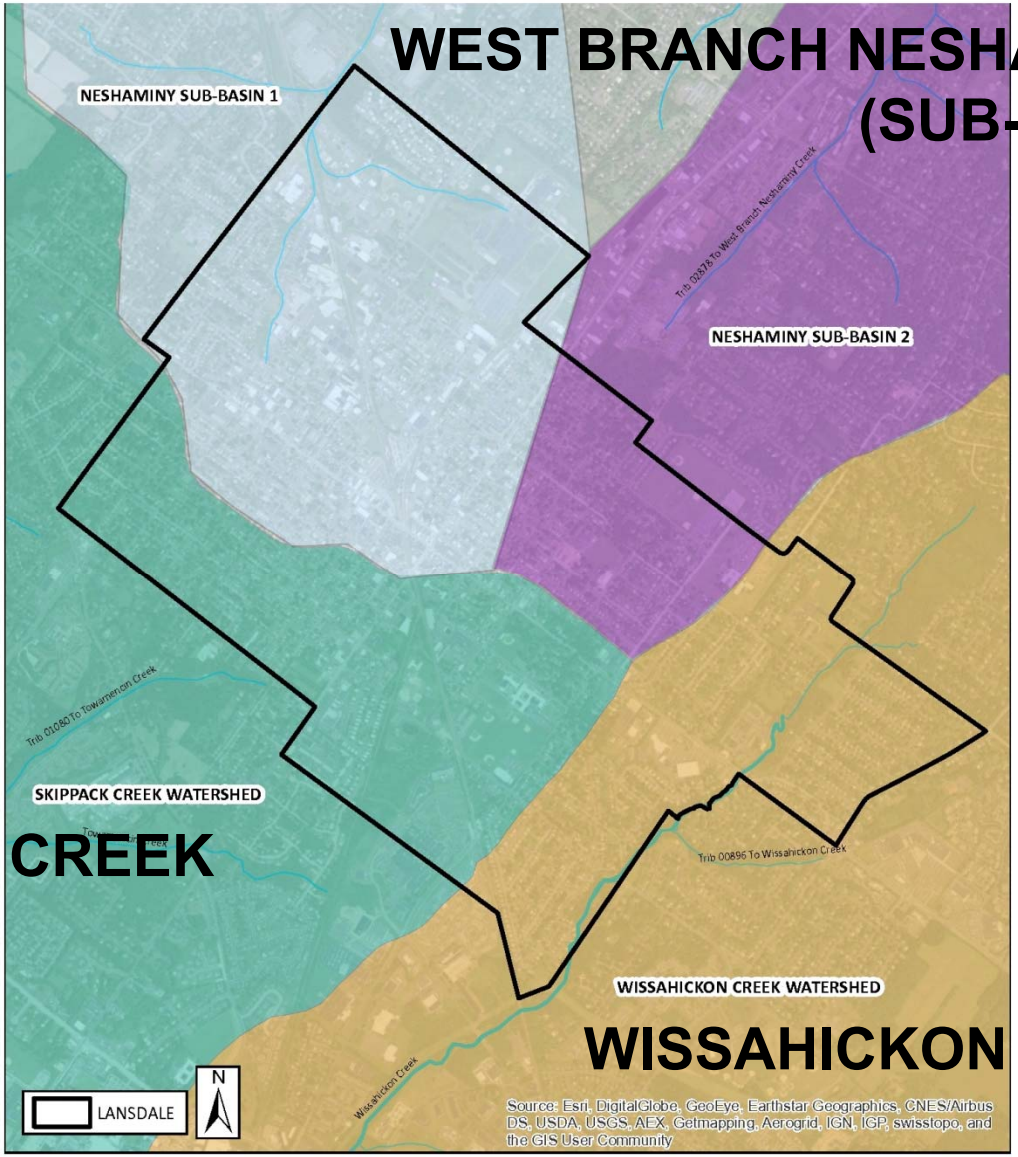
Drains, ditches, curbs, and gutters that move stormwater from one place to another

Slide Credit: Pennsylvania Environmental Council

TOTAL MAXIMUM DAILY LOAD

- Maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards.
- Muncipalities with impaired streams are required to reduce pollution to meet a TMDL standard.
- Wasteload allocation (WLA) is the amount of a pollutant assigned to a municipality.
- Control measures to reduce pollution include stormwater BMPs, streambank restoration, riparian buffer restoration, street sweeping, etc.

LANSDALE IMPAIRED STREAMS

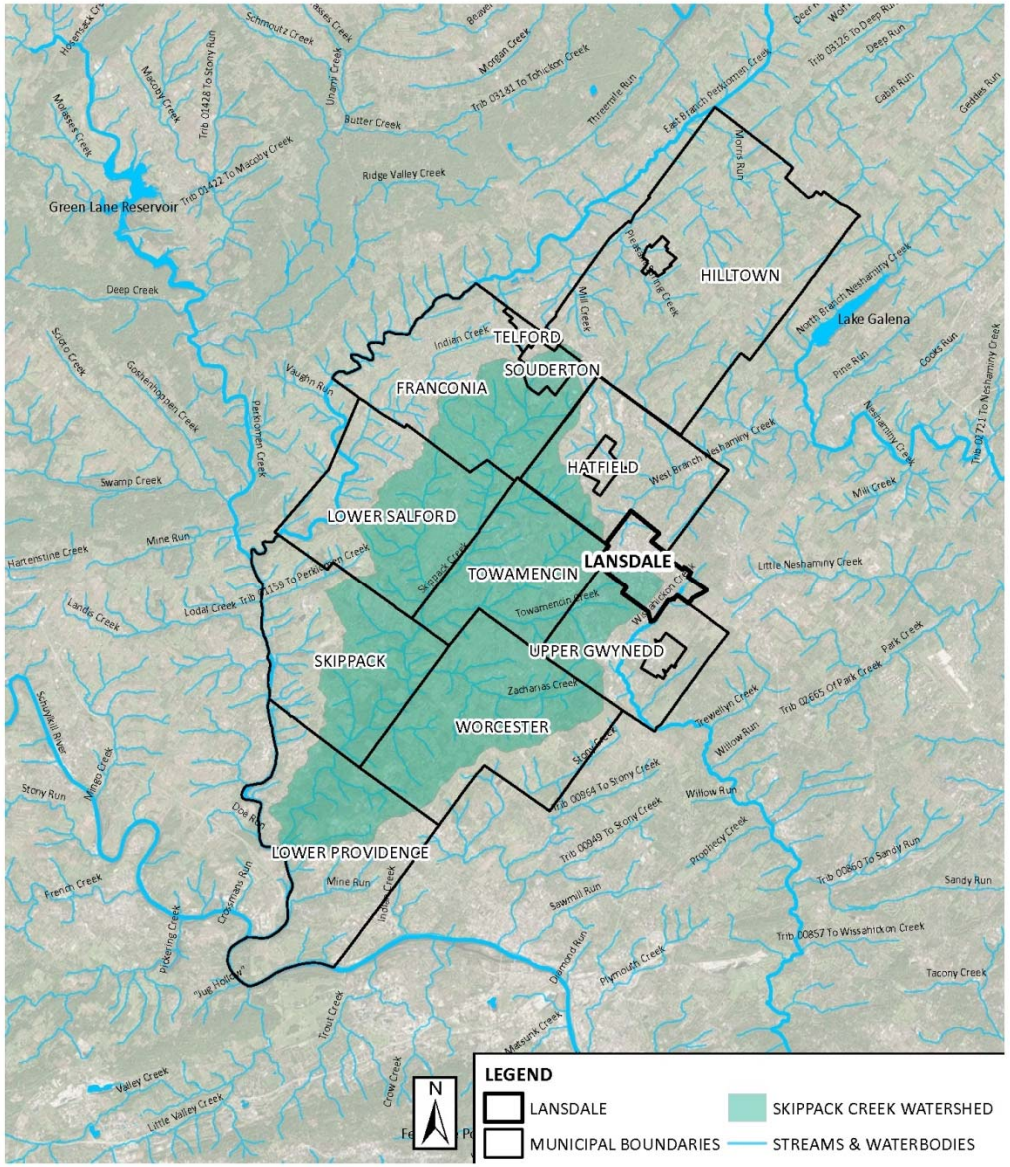


WEST BRANCH NESHAMINY CREEK (SUB-BASINS 1 & 2)

SKIPPACK CREEK

WISSAHICKON CREEK

SEDIMENT WLA & REQUIRED REDUCTION



SKIPPACK TMDL MUNIS:

- Franconia Township
- Hatfield Township
- Hilltown Township
- **Lansdale Borough**
- Lower Providence Township
- Lower Salford Township
- Skippack Township
- Souderton Borough
- Telford Borough
- Towamencin Township
- Upper Gwynedd Township
- Worchester Township

SEDIMENT WLA & REQUIRED REDUCTION

Watershed	Wissahickon Creek	Skippack Creek	Neshaminy Creek Sub-basin 1	Neshaminy Creek Sub-basin 2
Updated Baseline Sediment Load (lbs/year)	343,139	712,971	239,835	64,074
Required Reduction	26%	18%	16%	56%
Updated Required Sediment Load Reduction (lbs/year)	89,216	128,335	38,374	35,881

TOTAL REQUIRED SEDIMENT REDUCTION = 291,806 LBS/YEAR

BOROUGH MS4/TMDL REQUIREMENTS

- TMDL load reduction requirements are regulated and enforced by PA DEP through the MS4 Permit Program.

- Per the Borough's MS4 Permit, Lansdale is required to develop a TMDL Plan to identify how it will reduce sediment pollution and meet TMDL requirements in each watershed.

- Critial TMDL Plan requirements include:
  - List of Control Measure to Meet the TMDL
  - Analysis of Pollutant Load Reductions & Implementation Timeline

TMDL STRATEGY REPORT DEVELOPMENT

GOALS:

- Reduce sediment loads attributed to the Borough's MS4 to meet all TMDL required reductions and improve the health of the Wissahickon, Skippack, and Neshaminy Creeks.
- Select control measures that are both cost effective and provide the greatest suite of benefits to the community.
- Provide a practicable, actionable, and achievable implementation timeline that can be achieved within the Borough's physical and fiscal constraints.

TMDL STRATEGY REPORT DEVELOPMENT

PROCESS:

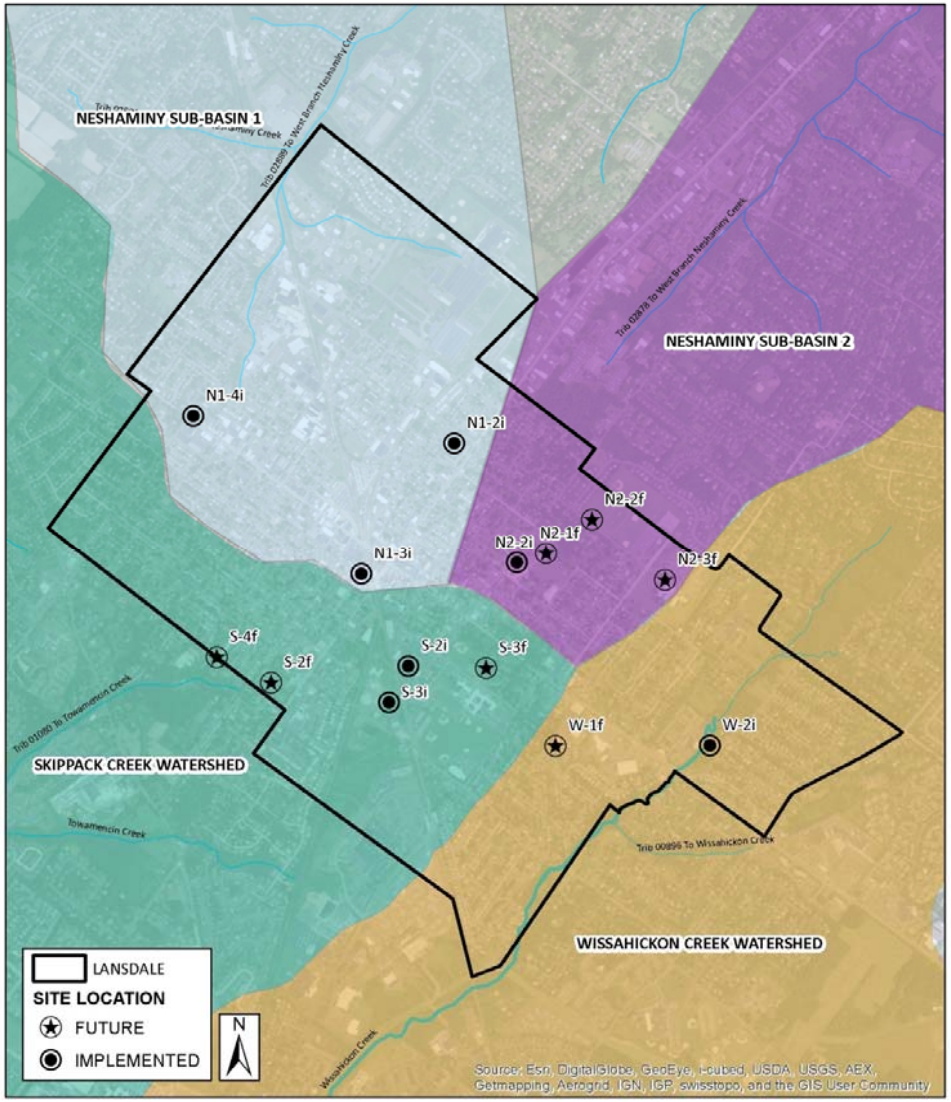
1. Inventory & evaluate existing (post-TMDL) control measures to determine current progress.

2. Identify & assess locations for potential future control measures.

3. Develop conceptual designs for future control measures & prioritize based on cost effective sediment reduction and community benefits.

4. Outline actionable implementation timeline and milestones.

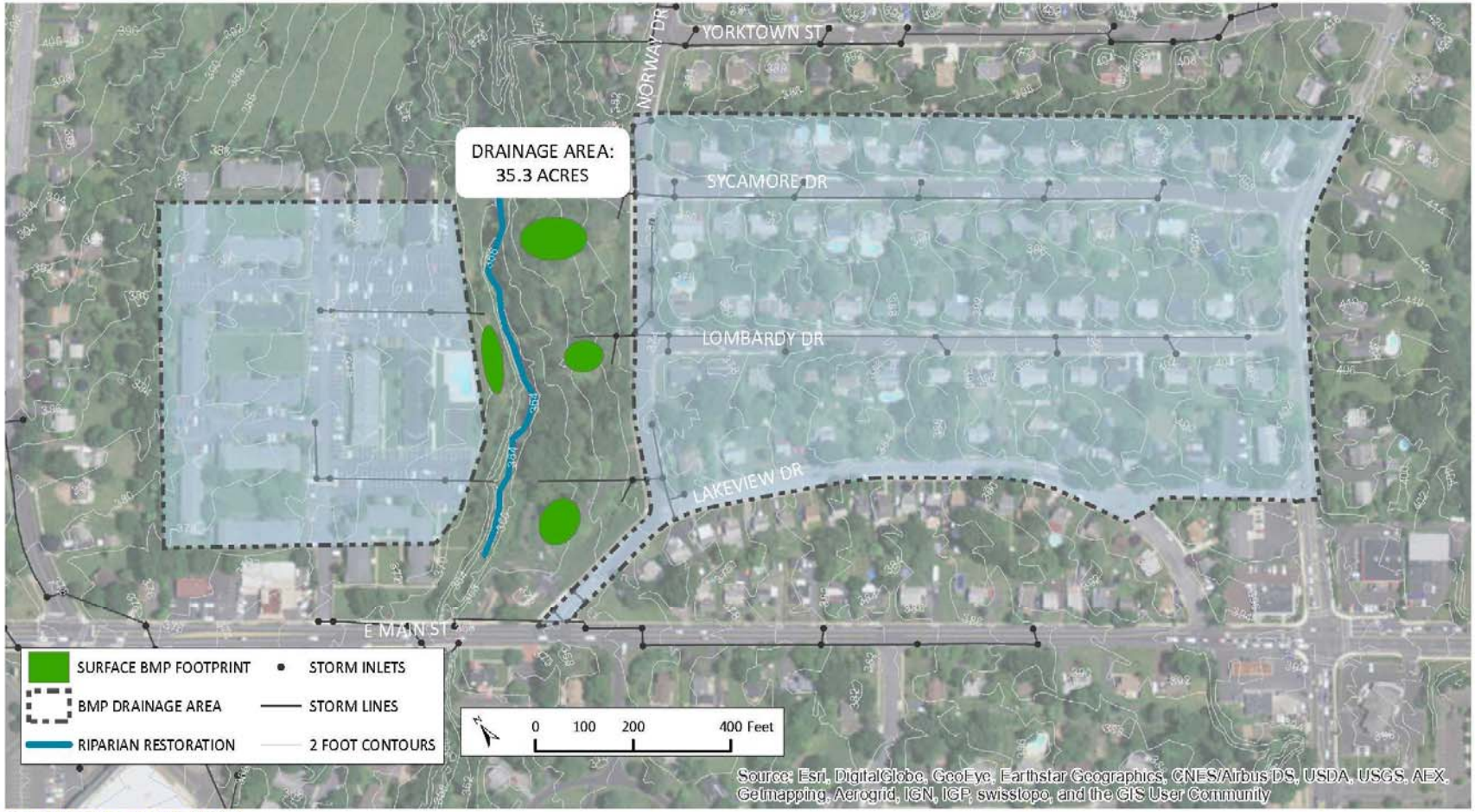
SEDIMENT CONTROL MEASURES



IMPLEMENTED CONTROL MEASURES

- Street Sweeping Program
- Voluntary Stormwater Retrofit Projects
- Redevelopment Projects

EXAMPLE - IMPLEMENTED CONTROL MEASURES



DRAINAGE AREA MAP

WATERSHED: WISSAHICKON CREEK

CONTROL MEASURE TYPE: INFILTRATION BASINS & RIPARIAN RESTORATION

ANNUAL SEDIMENT REDUCTION: 60,600 LBS/YEAR

PROJECT STATUS: IMPLEMENTED

WISSAHICKON PARK INFILTRATION BASINS & RIPARIAN CORRIDOR

EXAMPLE - IMPLEMENTED CONTROL MEASURES

WISSAHICKON PARK INFILTRATION BASINS & RIPARIAN CORRIDOR

IMPLEMENTED CONTROL MEASURES

CURRENT PROGRESS TOWARD REQUIRED SEDIMENT LOAD REDUCTION:

- Wissahickon Creek: 96%
- Skippack Creek: 30%
- Neshaminy Creek Sub-basin 1: **117%**
- Neshaminy Creek Sub-basin 2: 41%

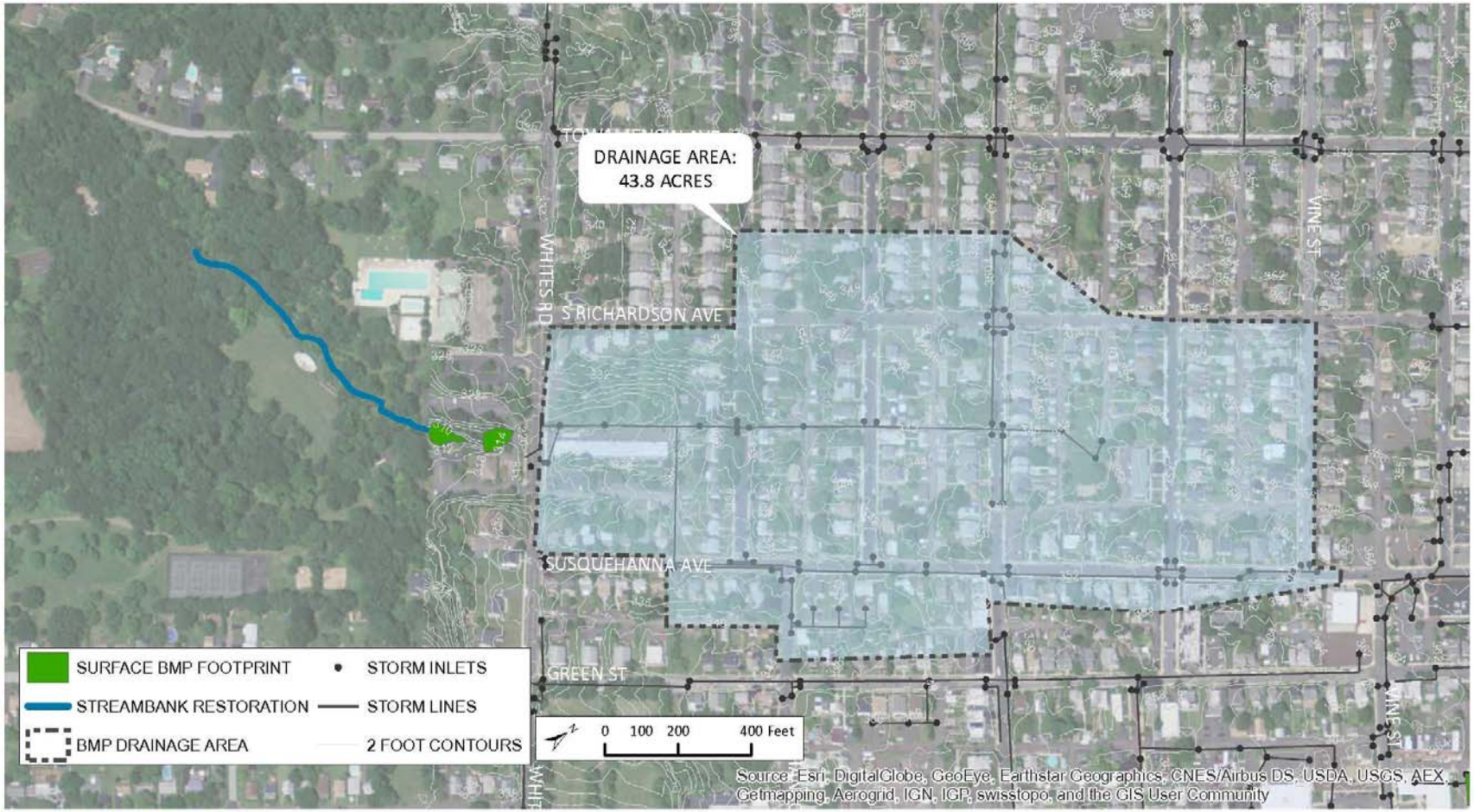
FUTURE CONTROL MEASURES

- Portfolio of potential future control measures to meet remaining sediment load reduction requirements.

- Types of control measures include:
  - Stormwater BMPs
  - Streambank restoration projects

- Prioritization of control measures – identified as "Priority" vs. "Contigency" in the Report – and flexability to replace projects as needed.

EXAMPLE - FUTURE CONTROL MEASURES



DRAINAGE AREA MAP

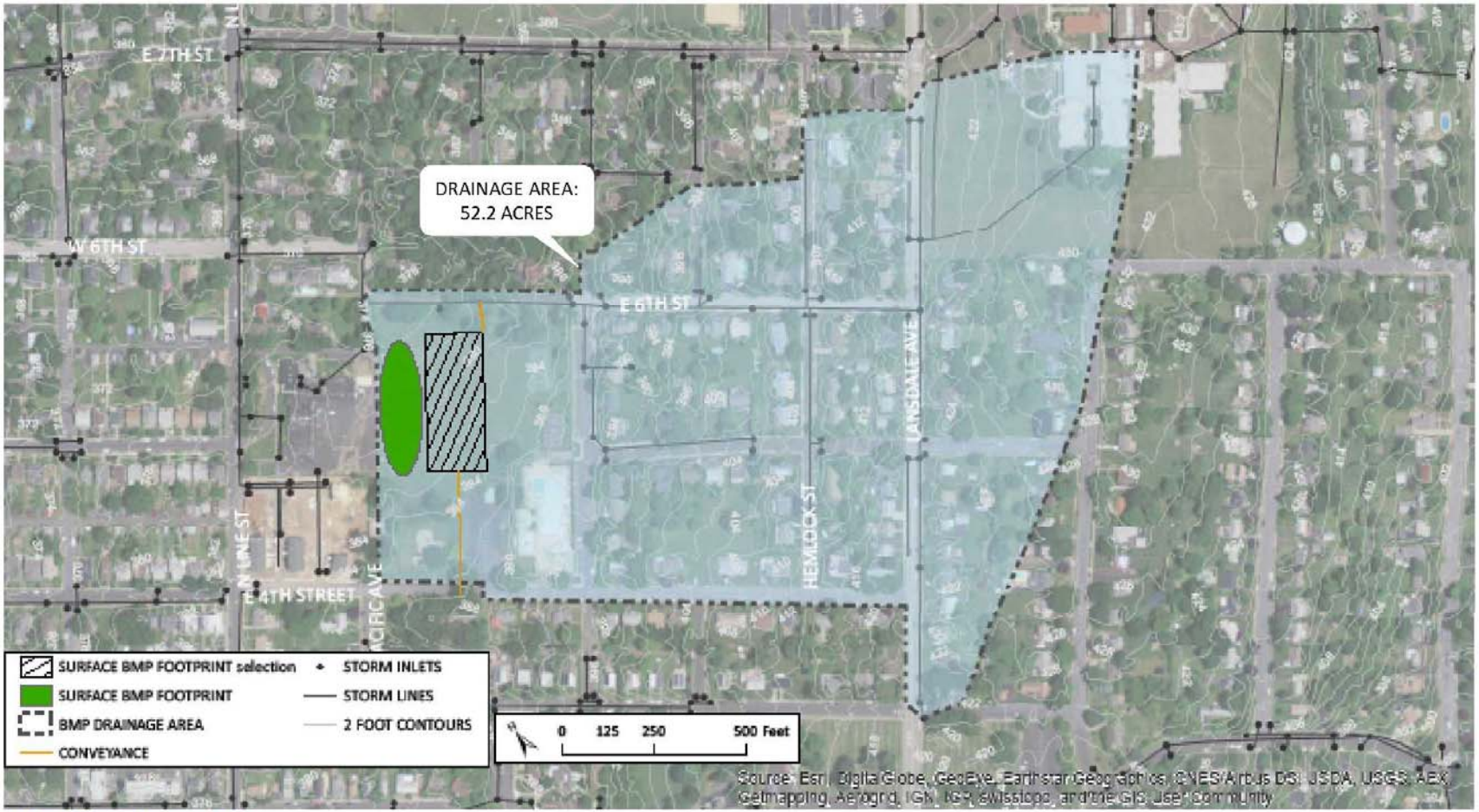
WATERSHED: SKIPPACK CREEK
CONTROL MEASURE TYPE: INFILTRATION/STREAMBANK RESTORATION
ANNUAL SEDIMENT REDUCTION: 55,800 LBS/YEAR
PROJECT STATUS: FUTURE
COST ESTIMATE: $785,400
O&M COSTS: $10,900/YEAR

WHITES RD PARK INFILTRATION BMPs & STREAMBANK RESTORATION

EXAMPLE - FUTURE CONTROL MEASURES

WHITES RD PARK INFILTRATION BMPs & STREAMBANK RESTORATION

EXAMPLE - FUTURE CONTROL MEASURES



DRAINAGE AREA MAP

WATERSHED: NESHAMINY SUB-BASIN 2

CONTROL MEASURE TYPE: SURFACE AND SUBSURFACE INFILTRATION

ANNUAL SEDIMENT REDUCTION: 12,600 LBS/YEAR

PROJECT STATUS: FUTURE

COST ESTIMATE: $1,380,600

O&M COSTS: $19,700/YEAR

FOURTH ST PARK INFILTRATION BMPs

EXAMPLE - FUTURE CONTROL MEASURES

FOURTH ST PARK INFILTRATION BMPs

IMPLEMENTATION TIMELINE & COST

Milestone	Progress Toward Required Sediment Load Reduction			
	Wissahickon Creek	Skippack Creek	Neshaminy Creek Sub-basin 1	Neshaminy Creek Sub-basin 2
Present	96%	30%	**117%**	41%
End of Current Permit Cycle	**100%**	30%	**117%**	41%
End of Permit Cycle 1	**100%**	73%	**117%**	76%
End of Permit Cycle 2	**100%**	90%	**117%**	**100%**
End of Permit Cycle 3	**100%**	**100%**	**117%**	**100%**

IMPLEMENTATION TIMELINE & COST

Milestone	Future Control Measures (Project ID)		Borough Expenditure (2016 USD)	
	Permitting / Design	Construction	Implementation	Annual O&M
Present	-	-	-	-
End of Current Permit Cycle	S-1f	W-1f	$150,000	$0
End of Permit Cycle 1	N2-1f	S-1f N2-1f	$2,000,000	$31,000
End of Permit Cycle 2	S-2f N2-2f or N2-3f	S-2f N2-2f or N2-3f	$1,900,000	$45,000
End of Permit Cycle 3	S-3f	S-3f	$1,500,000	$55,000
	Estimated Total Capital Expenditure:		$5,550,000	

IMPLEMENTATION TIMELINE & COST

DURING IMPLEMENTATION:

- Ability to update portfolio if more cost effective control measures present themselves.
- Pursuit of supplemental funding through grant programs and partnerships.
- Assessment of additional sediment load reductions associated with redevelopment and development projects.

QUESTIONS/COMMENTS

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