GETTYSBURG BOROUGH STORMWATER AUTHORITY (GBSWA)

3 PART SERIES ON PUBLIC EDUCATION AND OUTREACH

PART 2:
HOW DOES MS4 WORK?

PRESENTED BY:

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C.S.Davidson, Inc.

Excellence in Civil Engineering

Recap of Part One How did We get Here?

- **Federal EPA expanded the CWA in 1972**
  - **EPA's National Pollutant Discharge Elimination System (NPDES) permit controls discharges**
  - **Phase I – Medium and Large MS4s Established in 1990 for populations of 100,000 or greater (NOT Gettysburg)**
  - **Phase II - Small MS4s In 2000 - Included Gettysburg with 2010 Census Data**
    - An urbanized area (UA) is a densely settled core of census tracts and/or census blocks that have population of at least 50,000, along with adjacent territory containing non-residential urban land uses as well as territory with low population density included to link outlying densely settled territory with the densely settled core
- **PA DEP - Pennsylvania Clean Streams Law**
  - **PAG-13 - Authorization to discharge under the NPDES General Permit for Stormwater Discharges from Small MS4**
  - **2018–2023 MS4 General Permit**

Recap of Part 1 Continued

- Consequences:
  - Clean Water
  - Increased Flooding
  - Jeopardize Funding
  - Fines
- Ageing Conveyance
  - No easements
  - Under/Through Homes and Buildings
  - Causing Sink Holes
  - Borough has funded repairs through loans

Recap of Part 1 Continued

- Borough Code doesn't allow for Boroughs to conduct the necessary Stormwater Management Related Services
  - House Bill 914 could change that but has yet to be enacted and has other limitations
- Gettysburg Council opted to create an Authority under the Municipal Authorities Act 53
  - Gives the GBSWA such purposes and powers as set forth in the Authorities Act including, but not limited to, the administration and assessment of related fees in connection with the construction, operation, maintenance and repairs necessary for the implementation and operation of the Borough's municipal separate storm sewer system and any other lawful purpose

2018-2023 General Permit Requirements

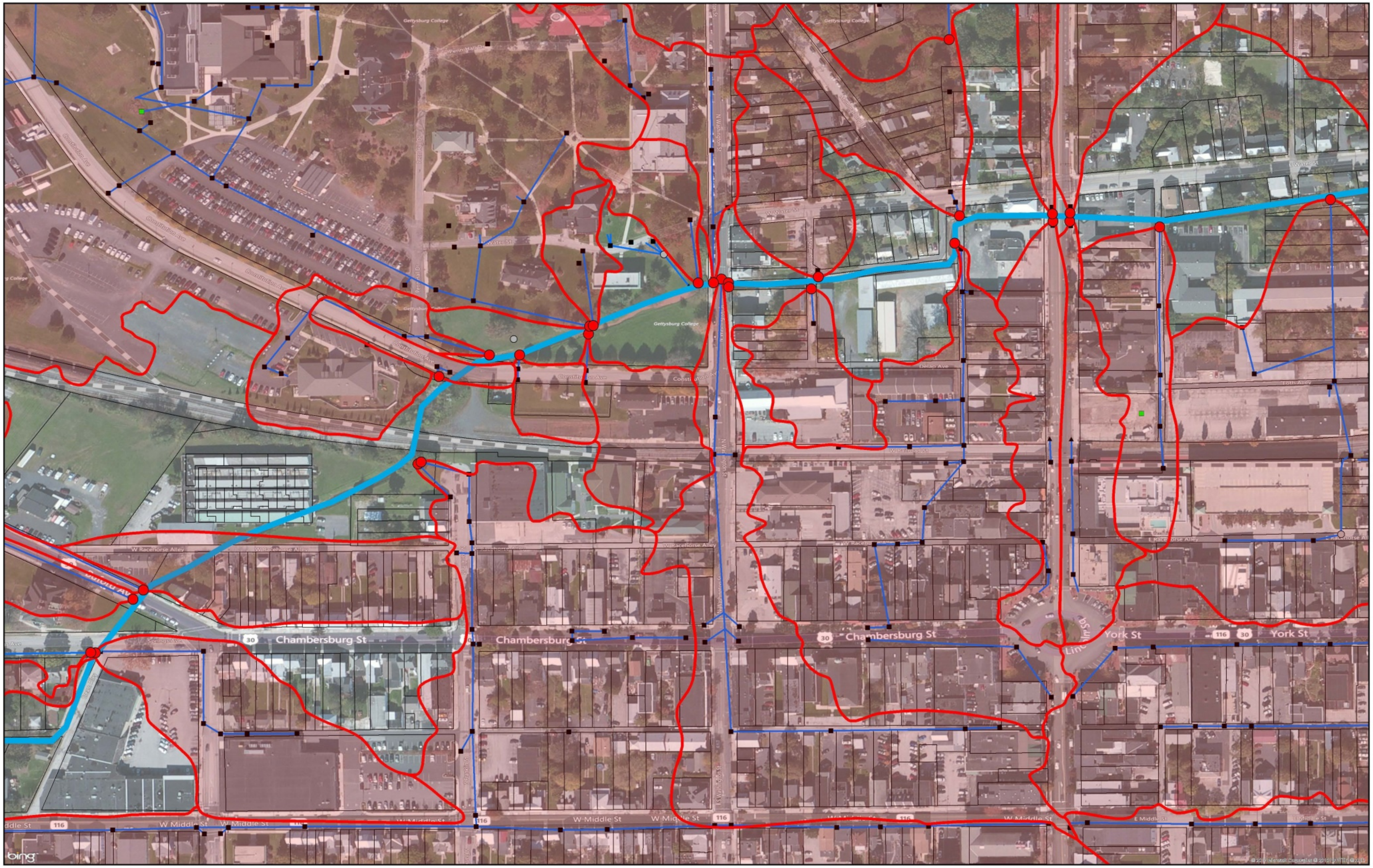
- Notice of Intent (NOI)
- Annual Reporting
- Minimum Control Measures (MCMs)
  - MCM #1 - Public Education and Outreach on Stormwater Impacts
  - MCM #2 - Public Involvement/Participation
  - MCM #3 - Illicit Discharge Detection and Elimination (IDD&E)
  - MCM #4 - Construction Site Stormwater Runoff Control
  - MCM #5 - Post-Construction Stormwater Management (PCSM) in New and Redevelopment Activities
  - MCM #6 - Pollution Prevention/Good Housekeeping for Municipal Operations
- PA Obligated to Meet It's Target Pollutant Load Reductions
  - 10% Reduction in TSS (Sediment)
  - 5% Reduction in TP (Phosphorus)
  - 3% Reduction in TN (Nitrogen)

MCM #1: Public Education & Outreach on Stormwater Impacts

MCM #2: Public Involvement/ Participation

MCM #3: Illicit Discharge Detection & Elimination (IDD&E)

MAPPING



Chambersburg St
Chambersburg St
Chambersburg St
York St
York St
W Middle St
W Middle St
W Middle St

MCM #4: Construction Site Stormwater Runoff Control

MEMORANDUM OF UNDERSTANDING (MOU)
Between the
YORK COUNTY CONSERVATION DISTRICT
and
THE BOROUGH OF WRIGHTSVILLE

This Memorandum has been prepared jointly and agreed upon by each party for the following purposes:

- To serve as a joint commitment by the signatory parties to control accelerated erosion and to prevent sediment pollution to the waters of the Commonwealth which may result from earth disturbance activities conducted in THE BOROUGH OF WRIGHTSVILLE.

- To serve as a joint commitment by the signatory parties to ensure Best Management Practices (BMPs) are implemented on the ground to protect, maintain, reclaim, and restore water quality and the existing and designated uses of waters of this Commonwealth located in THE BOROUGH OF WRIGHTSVILLE for the benefit of the Borough's citizens and downstream water users.

- To serve as a basis for stating the role of each party in administering the Commonwealth of Pennsylvania's Title 25, Chapter 102 regulations and General -(PAG-02) National Pollutant Discharge Elimination System (NPDES) permit for Stormwater Discharges from Construction Activities.

- To assist THE BOROUGH OF WRIGHTSVILLE in meeting its~~it's~~ minimum control measures as required by federal PAG-13 permit for Stormwater Discharges from Small Separate Storm Sewer Systems (MS-4s). This MOU will serve to satisfy Minimum Control Measure #4 – Construction Site Runoff Control- and will assist in satisfying Minimum Control Measure #5 – Post-Construction Stormwater Management in New Development and Redevelopment.

- To serve as a basis for stating the role of each party in administering the provisions of THE BOROUGH OF WRIGHTSVILLE Post-Construction Stormwater Management Ordinance # 2012-2 and Subdivision and Land Development Ordinance # 1991-6.

I. In carrying out the intent of this memorandum, the York County Conservation District (District) will:

A. E&S Plan Reviews / NPDES Permit Processing

1) Invite the Borough engineer to all scheduled NPDES pre-application meetings. Attendance will be at the Borough engineer's discretion.

2) Complete a technical review of all E&S plans proposing 1 acre or more of earth disturbance and determine if an NPDES permit is required. Initial technical reviews will be completed within 50 calendar days of receiving a complete plan submission. Additional technical reviews will be completed within 30 calendar days of receiving a complete revised plan submission.

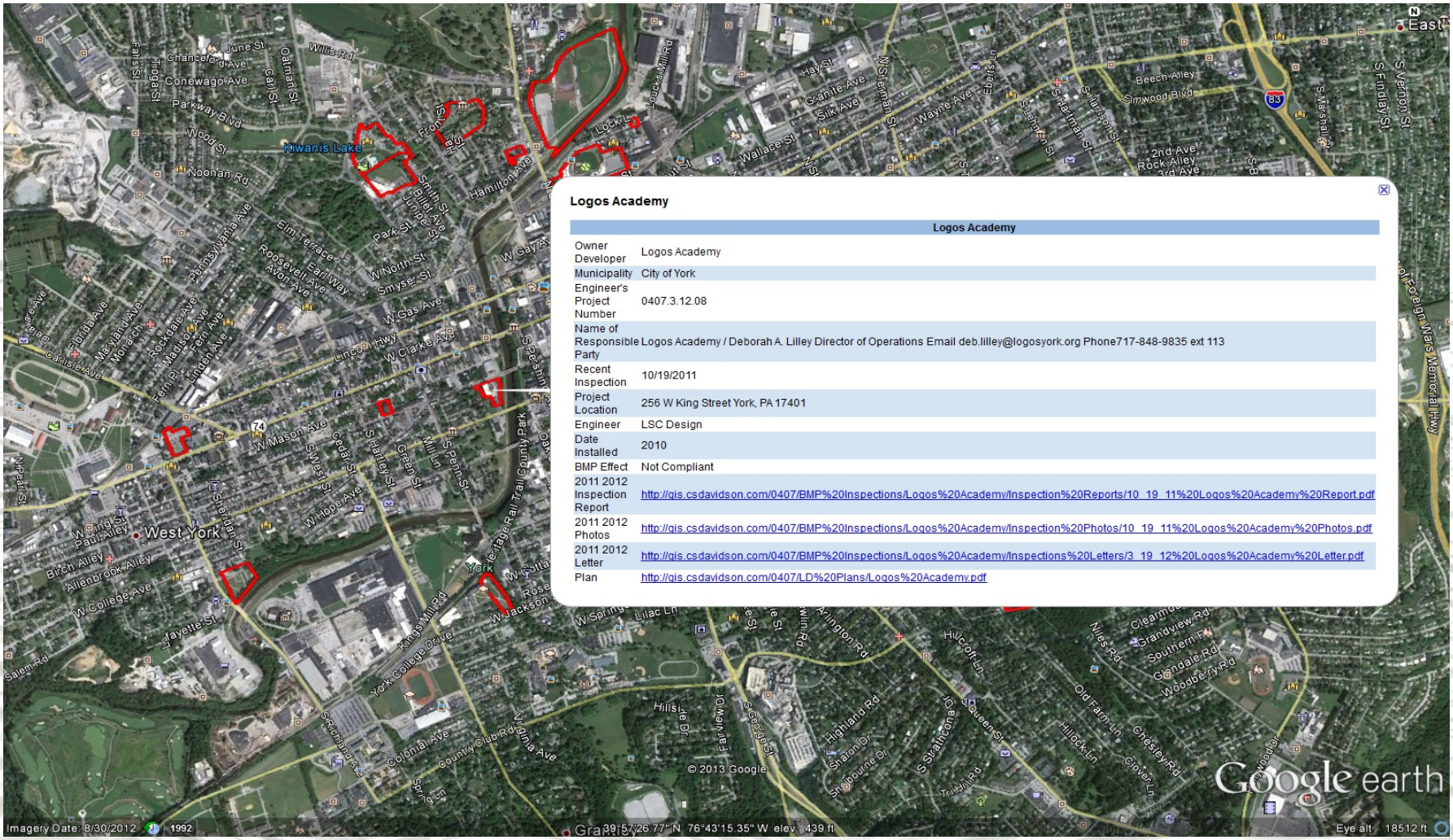
3) Complete a technical review of all E&S plans proposing 5,000 square feet to 0.99 acres of earth disturbance when required by Borough ordinance. The technical review will be completed within 50 calendar days of receiving a complete plan submission.

MCM #5: Post-Construction Stormwater Management (PCSM)

Stormwater Ordinance Requirements

- County-wide Act 167 Plans
- Exemption Criteria
- Levels of Plan Review/Approval
- O&M agreements
  - Must be recorded as part of the plan approval process
  - Provides a legal, enforceable mechanism to ensure long term maintenance
  - Transferable with the land
  - Required Inspections

BMP Mapping/Inventory



MCM #6: Pollution Prevention/Good Housekeeping for Municipal Operations

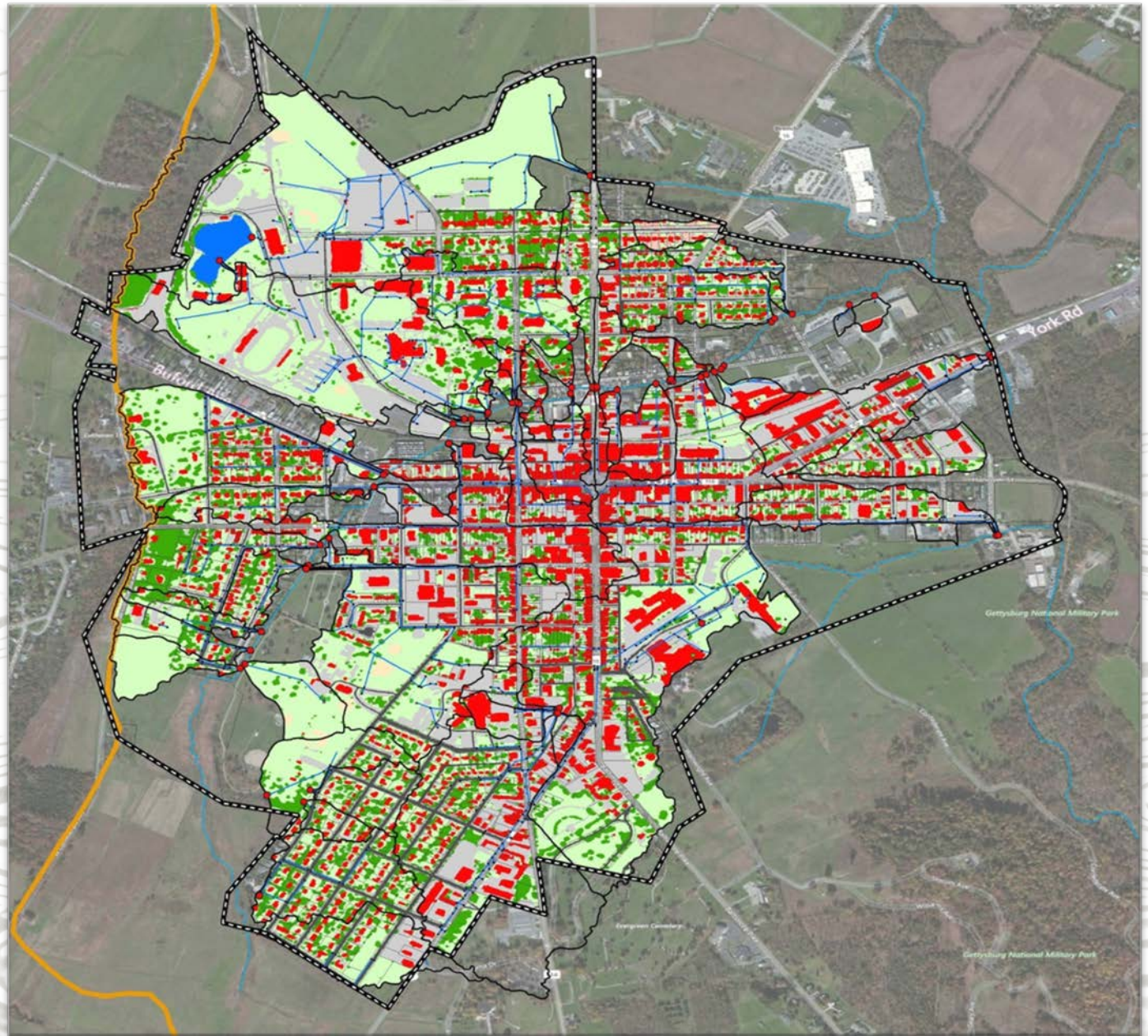
2017 PRP Components

- **Submitting a combined Pollutant Reduction Plan**
  - Addresses local impaired water requirements and Chesapeake Bay Watershed impairments collectively
- **Report must include the following sections:**
  - Public participation
  - Maps
  - Pollutants of concern
  - Existing Loading for Pollutants of Concern
  - BMPs required to Achieve the Minimum Required Reduction
  - Funding Mechanisms
  - BMP Operation and Maintenance

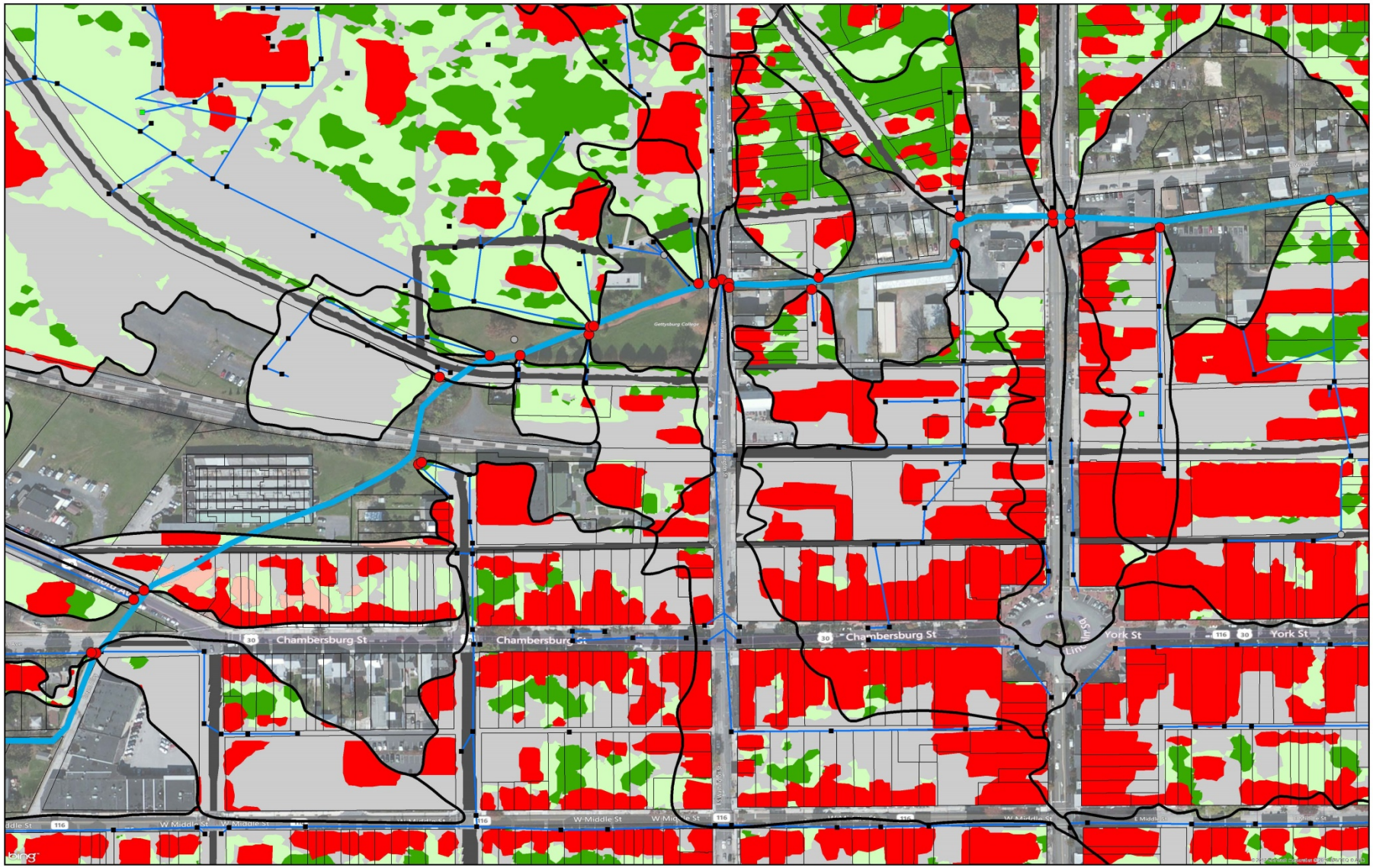
Public Participation

- Publish a public notice in the newspaper.
- Accept public comments for a minimum of 30-days.
- Hold a public meeting to accept any public comments regarding the plan.
- Include documentation of consideration of public comments in the plan.

Mapping


York Rd
Gettysburg National Military Park
Gettysburg National Military Park

MAPPING


Chambersburg St
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York St
York St
W Middle St
W Middle St
W Middle St

Pollutants of Concern

- **Three (3) Pollutants of Concern:**
  - Total Nitrogen (TN)
  - Total Phosphorus (TP)
  - Total Suspended Solids (TSS) – Sediment
- **Three (3) Impaired Streams in the Borough:**
  - Rock Creek
  - Steven's Run
  - Unnamed Tributary to Rock Creek

Baseline Loading Using DEP Simplified Method

Land Cover	Area (ac)	TN lbs/yr	TP lbs/yr	TSS lbs/yr
Impervious Area	458	15,319	962	640,979
Non-Impervious Area	444	10,219	356	92,306
Total	903	25,538	1,318	733,285

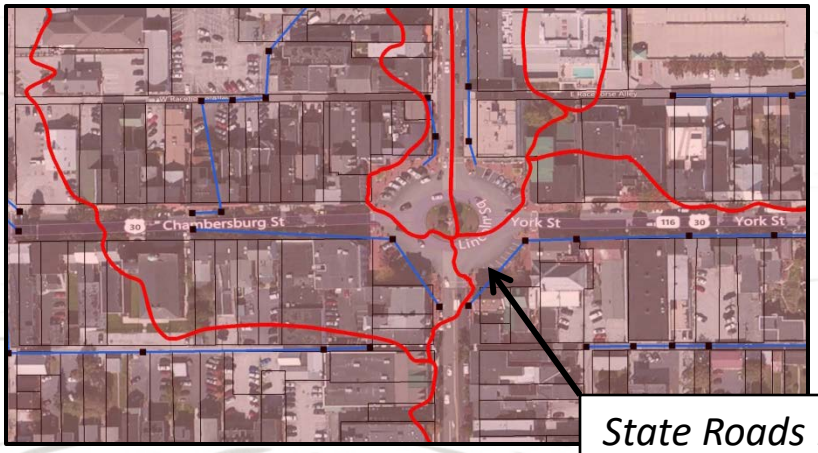
Areas to be Parsed Out	Area (ac)
Impervious Area	60
Non-Impervious Area	54

Land Cover (After Parsing)	Area (ac)	TN lbs/yr	TP lbs/yr	TSS lbs/yr
Impervious Area	399	13,324	837	557,513
Non-Impervious Area	390	8,968	312	81,012
Total	789	22,293	1,149	638,525

Existing BMP Reduction Credits	416	17	43,345
Adjusted Totals	21,877	1,132	595,180

Required Reductions	TN lbs (3%)	TP lbs (5%)	TSS lbs (10%)
	656	**57**	**59,518**

BASELINE REDUCTIONS



State Roads Removed from Land Cover Calculations

Existing Structural BMP Credits	TN lbs/yr	TP lbs/yr	TSS lbs/yr
Best Western Hotel	7	0	316
Future Stakes Land Development	32	2	1,325
Gettysburg College - Brua Drive	44	4	3,625
339 Carlisle Street	22	1	600
Lutheran Seminary Historical Trail	2	0	64
Gettysburg College- Dining Hall	4	0	168
Bus Transfer Center	5	0	203
Bus Transfer Center	4	0	356
Central Energy Plant	58	3	1,806
Central Energy Plant Parking Lot	122	8	4,993
Orchard Development	18	1	723
Orchard Development	48	3	1,958
Gettysburg Hospital	245	15	10,165

BMPs to Achieve Required Reductions

Project No.	Project Name	BMP Type	Reduction Achieved (lbs. of sediment per year)
1	Gettysburg Inner Loop Segment A	Stream Restoration	7,630
2	Gettysburg Area Recreational Authority Parking Lot Improvements	Dry Extended Detention Basins	295
3	Gettysburg Area Recreational Authority Parking Lot D Improvements	Bioretention-Rain Garden (A/B Soils w/ Underdrain)	543
4	Mayor Alley Stream Restoration UNT to Rock Creek	Stream Restoration	1,122
5	Stream Bank Restoration UNT to Rock Creek (Culp's Farm)	Stream Restoration	44,880
6	Gettysburg Rec. Park Stream Bank Restoration & Rain Gardens	Bioretention-Rain Garden (A/B Soils w/ Underdrain) and Stream Restoration	N/A ~~22,607~~
7	E. Broadway Street Improvements	Bioretention-Rain Garden (A/B Soils w/ Underdrain)	3,125
8	Race Horse Alley Green Street Project	Permeable Pavement and Bioretention-Rain Garden (A/B Soils w/ Underdrain)	2,007
9	Borough Garage Rain Garden	Bioretention-Rain Garden (A/B Soils w/ Underdrain)	1,346
		Total Reductions:	**60,948**

Project No. 1 – Gettysburg Inner Loop

Project No. 5 – Stream Bank Restoration (Culp's Farm)

Storm Sewer Improvements

- **Recently Completed:**
  - Grant Funded:
    - GIL Phase A
    - Steinwehr
    - W. Middle
  - Loan
    - E. Middle
    - Carlisle
    - Stratton
- **Future Priority:**
  - Long Lane
  - Chambersburg Street

PART 3 OF 3

- Public Education and Outreach Series Part 3 of 3
  - **How much does MS4 Cost? Fees?**
    - **April 22 at 5:30**

QUESTIONS?

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