

NPDES NH Small MS4 Permit Town of Exeter

Overview of New Hampshire Small Municipal
Separate Storm Sewer System (MS4)
Permit Requirements



Agenda

- NPDES Introduction
- NPDES NH Small MS4 Permit
 - § What is MS4? (stormwater collection & conveyance systems)
 - § Regulated Areas
 - § Comparison of Permit Requirements (2003 to 2017)
 - § Threatened or Impaired Water Bodies
- NPDES Wastewater Permit and AOC
- Implementation Timeline

NPDES

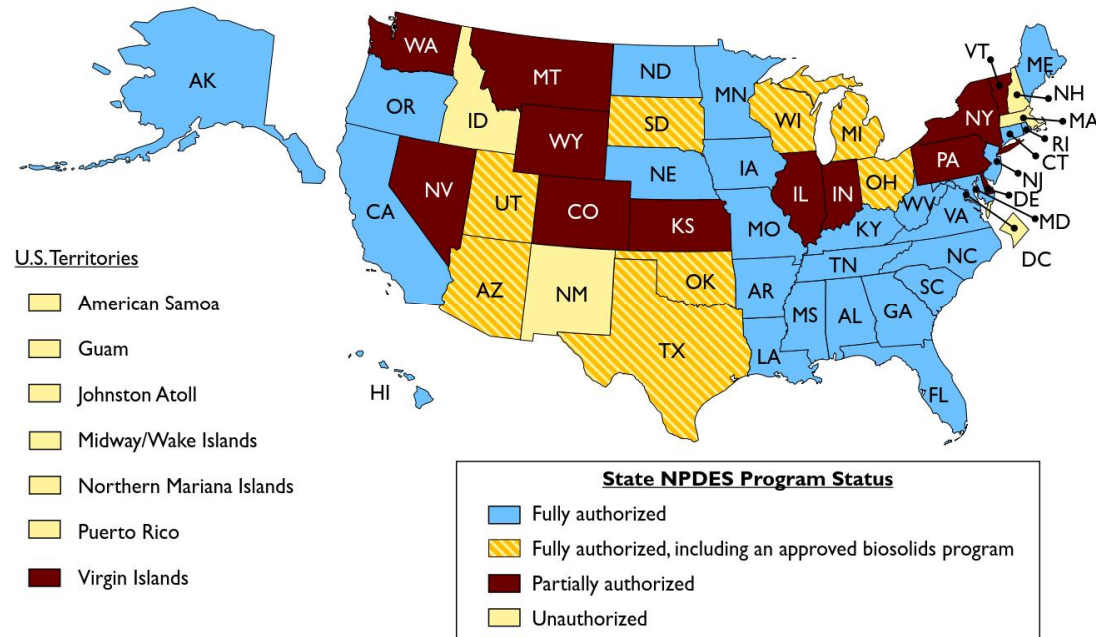
“As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) Permit Program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.”

NPDES Program Authorizations

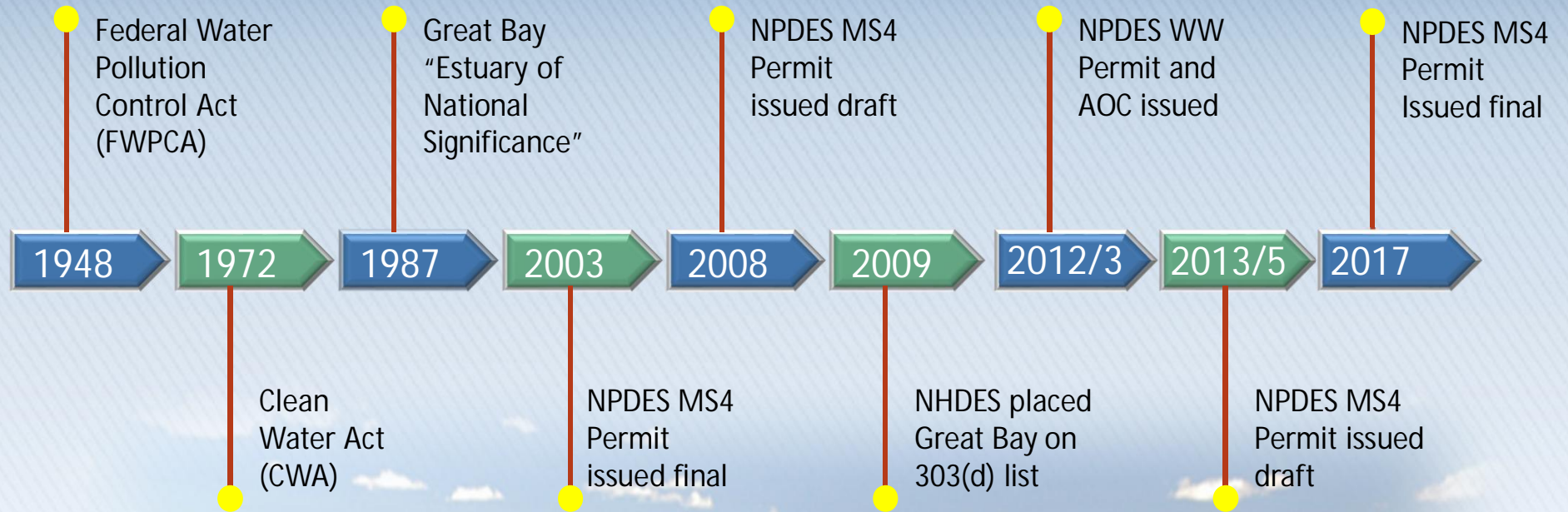
- Issued by the EPA
 - § New Hampshire is 1 of 4 unauthorized states

NPDES Program Authorizations

(as of July 2015)



History



Common Water Pollutants

- Soil, Sand and Sediment
- Trash and Debris
- Chemicals
- Salt
- Nutrients (e.g. Nitrogen)
- Human or Animal Waste
- Temperature



What is MS4?

“Municipal Separate Storm Sewer System”

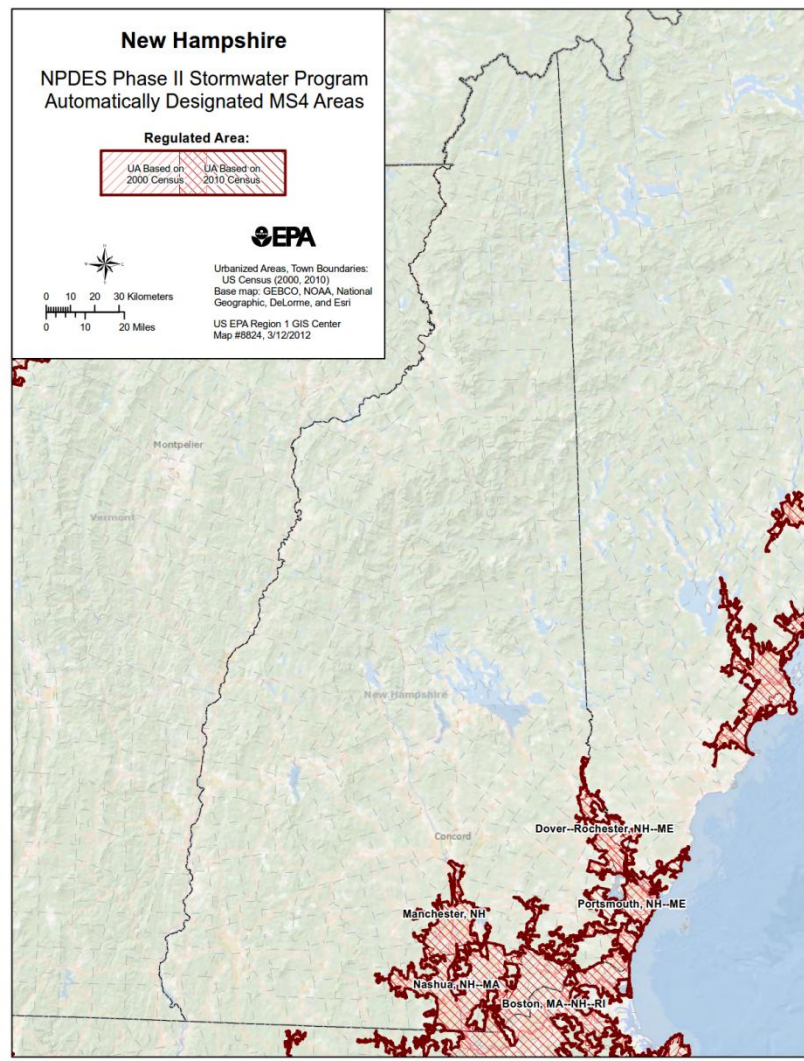
The regulatory definition of an MS4 (40 CFR 122.26(b)(8)) is "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States; (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

What is MS4?

- Includes
 - § Pipes
 - § Catch basins
 - § Manholes
 - § Swales / Ditches
 - § Man-Made Channels
 - § Streets
 - § Curb / Gutters
 - § Outfalls

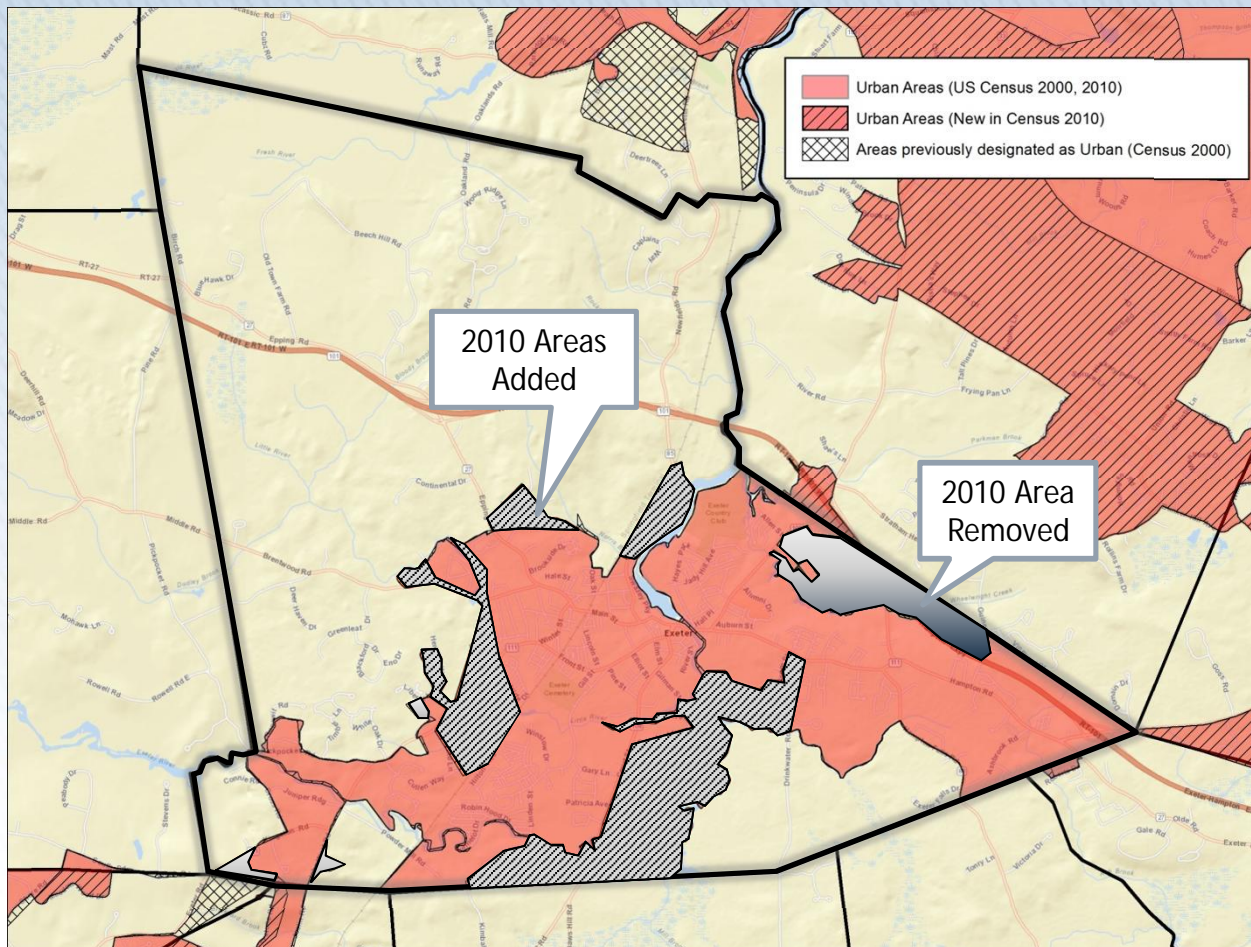


NH Small MS4 Communities



Urbanized Area (UA)

- UAs constitute the largest and most dense areas of settlement



2000 UA = 3,800 Acres
2010 UA = 4,500 Acres

16% INCREASE IN AREA

2003 Permit to 2017 Permit Comparison

NH Small MS4 Permit

2003

- Effective May 1, 2003
- 5 year permit term
- Administratively extended
- Covers 2000 UAs
- 56 pages

2017

- Effective July 1, 2018
- 5 year permit term
- Will expire June 30, 2022
- Covers 2010 UAs
- Approx. 215 pages

NH Small MS4 Permit Requirements


- 2017 Final Permit maintains focus on 6 Minimum Control Measures (MCMs)
 1. Public Education and Outreach
 2. Public Involvement and Participation
 3. Illicit Discharge Detection and Elimination (IDDE)
 4. Construction Site Stormwater Runoff Control
 5. Post Construction Stormwater Management in New Development and Redevelopment
 6. Pollution Prevention and Municipal Good Housekeeping
- 2017 Final Permit includes **enhanced requirements** focused on
 - § **Record Keeping**
 - § **Planning / Local Stormwater Regulation**
 - § **Meeting Water Quality Standards**
 - § **IDDE Program**
 - w **Outfall Inspection / Sampling**
- Change in commencement
 - § 2003 Permit effective immediately
 - § **2017 Permit effective July 1, 2018**

NH Small MS4 Permit Requirements (2003 and 2017)

- Notice of Intent
 - § Identify Responsible Parties
 - § Identify Receiving Waters
 - § Identify BMPs
 - § Provide a Schedule
 - § File Electronically
 - § Endangered Species Act (ESA)
 - § National Historic Preservation Act (NHPA)

NH04007

NOTICE OF INTENT
For Coverage Under the NPDES General Permit
for Storm Water Discharges from
Small Municipal Separate Storm Sewer Systems (MS4s)



A. Instructions

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

Submission of this Notice of Intent constitutes notice that the entity named at item B1. of this form intends to be authorized by the NPDES General Permit issued by EPA for storm water discharges from the small municipal separate storm sewer system (MS4), in the location identified at item B2. of this form. Submission of the Notice of Intent also constitutes notice that the party identified at item B1. has read, understands and meets the eligibility conditions of Part I.B. of the NPDES Small MS4 General Permit, agrees to comply with all applicable terms and conditions of the NPDES Small MS4 General Permit, and understands that continued authorization to discharge is contingent on maintaining eligibility for coverage. In order to be granted coverage, all of the information required on this Notice of Intent form and the separate Storm Water Management Program (SWMP) Implementation Schedule form (Excel Spreadsheet), must be completed. Please read the permit and make sure you comply with all requirements, including the requirement to develop and implement a storm water management program.

B. Applicant Information

1. Small MS4 Operator/Owner Information: JUL 31 2007

Town of Exeter, NH
Name MUNICIPAL ASSISTANCE UNIT
10 Front Street
Mailing Address
Exeter NH 03833
City/Town State and Zip Code
603 778-0591 pduffvexeter@yahoo.com Phyllis Duffy DPW
Telephone Number Email (if available)

2. Municipality Name
Town of Exeter, NH
City/Town

3. Legal Status:
 Federal City/Town State County Private
 Other public entity: Specify Public Entity

4. Other regulated MS4(s) within municipal boundaries:
NH DOT

5. Based on the instructions provided in Part I of the NPDES Small MS4 General Permit, have the eligibility criteria for "listed species" and critical habitat been met?
 yes pending no

B. Applicant Information (cont.)

Rev 1/27/03

NH Small MS4 Permit Requirements (2003 and 2017)

- Develop/Update Stormwater Management Program (SWMP)
 - § Identify Responsible Parties
 - § NOI (expanded requirements)
 - § MS4 Maps (expanded requirements)
 - § Identify BMPs to meet MCMs (expanded requirements)
 - § Annual Program Evaluation and Update (expanded requirements)
 - § ESA and NHPA compliance documentation
 - § Formal Written Document
 - § Bound and Available to the public
 - § Completed by June 30, 2019

MCM1 Public Education and Outreach (2003 and 2017)

- Distribution of Educational Materials to the community
 - § Think Blue Exeter
 - § SepticSmart
 - § Stenciling Storm Drains
- **Mandatory Communication Schedule**
 - § **Target four different audiences**
 - w Residents
 - w Businesses, Institutions and Commercial Facilities
 - w Developers
 - w Industrial Facilities
 - § **Minimum of 2 messages to each audience over 5 year permit period**
 - § **Messages spaced one year apart**



MCM2 Public Involvement and Participation (2003 and 2017)

- Provide opportunities for Public Involvement
 - § Exeter River Study Committee
 - § Exeter-Squamscott River Local Advisory Committee
 - § Climate Adaptation Plan for Exeter (CAPE)
 - § Rain Barrels available for purchase
 - § Annual Fish Ladder Tour (removed 2016)
 - § National Trails Day
- **Mandatory Reporting**

MCM3 IDDE Program (2003)

- Identify and eliminate sources of pollution
 - § Survey Outfalls
 - § Sample Suspect Outfalls
 - § I/I Investigations
 - § Hotline for Reporting
- IDDE Program
 - § System Mapping
 - § Prohibit non-stormwater discharges
 - § Prohibit SSO discharges and require removal
 - § Develop procedures to detect and address non-stormwater discharges



MCM3 IDDE Program (2003 and 2017)

- Mapping Phase 1 (by June 30, 2020)
 - § Outfalls and Receiving Waters
 - § Open Channel Conveyances
 - § Interconnections with other MS4s
 - § Municipally-Owned SW Treatment Structures
 - § Water Bodies
 - § Initial Catchment Delineations
 - § Sanitary Sewer Overflows (SSOs)
- Mapping Phase 2 (by June 30, 2028)
 - § Outfall spatial location
 - § Pipes, Manholes, Catch Basins
 - § Sanitary or Combined Sewer Systems



MCM3 IDDE Program (2003 and 2017 cont.)

- Outfall Inventory
- Outfall Identification
- Catchment Delineation and Ranking
- Outfall Inspections
- Screening and Sampling (Dry & Wet Weather)
- Systematic investigation of each catchment
 - § Begin investigation of problem catchments by June 30, 2020
 - § Complete investigation of all problem catchments by June 30, 2025
 - § Complete investigation of all high and low priority catchments by June 30, 2028
- Removal and Confirmation (confirmatory screening)
- Prevention Procedures
- Annual Training
- Develop Written IDDE Program Document by June 30, 2019



MCM4 Construction Site Runoff Control (2003 and 2017)

- Develop program to reduce pollutants from construction sites
 - § Stormwater Ordinances
 - § Site Plan Reviews
 - § Subdivision Regulations
 - § Develop Procedures for
 - w Construction Inspection
 - w Enforcement
- **Formalize written procedures and documentation**
 - § **Inspection and Enforcement**
 - § **Plan Reviews**



MCM5 Post Construction Runoff Control (2003 and 2017)

- Develop program to address runoff from new development and redevelopment
 - § Stormwater Ordinances / Regulations
- **Submittal of As-built Drawings**
- **Compliance with New Hampshire Stormwater Manual**
 - § Capture 1"
 - § 80% removal of TSS
- **Update Regulations**
 - § Encourage LID Practices
- **Inventory and Ranking of Properties**



MCM6 Good House Keeping and Pollution Prevention (2003 and 2017)

- Develop program to prevent and/or reduce pollutant runoff from municipal operations
 - § Inventory Town-owned facilities
 - § Develop O&M procedures
 - w Written documents
 - § Infrastructure cleaning program
 - w Catch Basins
 - w Street Sweeping
 - § SW Treatment Inspection Schedule & Procedures
 - § Train town employees



MCM6 Good House Keeping and Pollution Prevention (2003 and 2017 cont.)

- Stormwater Pollution Prevention Plan (SWPPP)
 - § Pollution Prevention Team
 - § Description of Facilities
 - § Potential Pollutant Sources
 - § Stormwater Controls
 - § Housekeeping
 - § Spill Prevention and Response
 - § Erosion and Sedimentation Controls
 - § Management of Runoff
 - § Salt Storage
 - § Training and Inspection

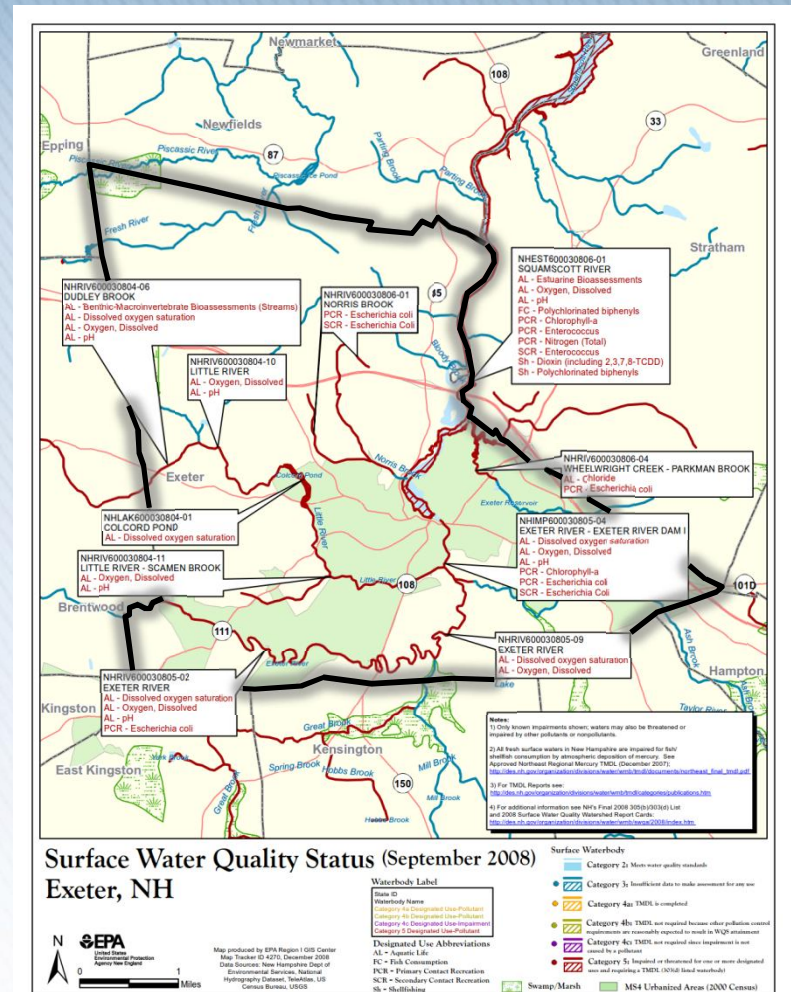
Other Requirements (2003 and 2017)

- Cooperation between interconnected MS4s
- Promote groundwater recharge and infiltration when possible
- Protect public drinking water supplies
- Discharges to Water Quality Impaired Waters
(expanded requirements)
- Program Evaluation
- Record Keeping (expanded requirements)
- Annual Reporting (expanded requirements)

MS4 Regulated Discharges to Water Quality Impaired Water Bodies

- Squamscott River*
 - § Nitrogen
 - § Solids, Metals, Hydrocarbons
- Exeter River*
 - § Bacteria/Pathogens
- Norris Brook*
 - § Bacteria/Pathogens
- Little River
- Colcord Pond
- Dudley Brook

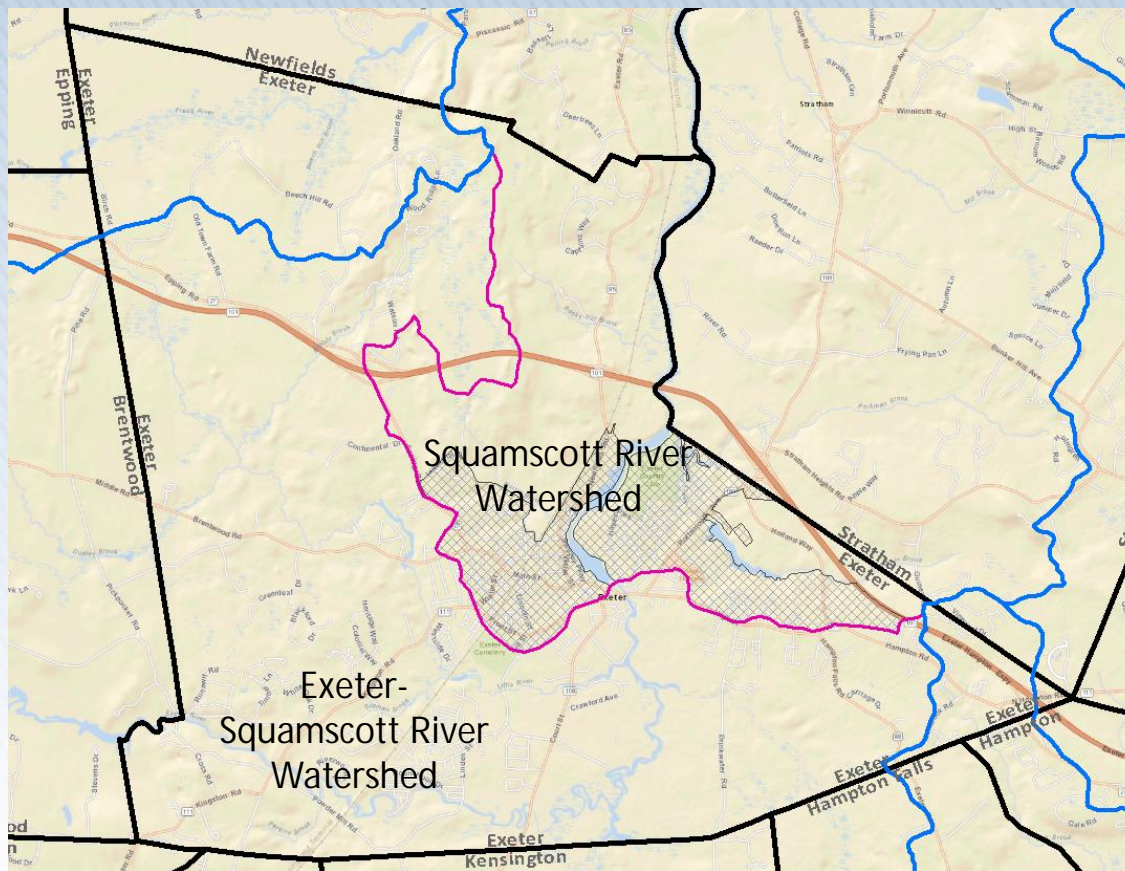
*Enhanced BMP requirements




MS4 Urbanized Area (regulated)


Enhanced BMPs for Nitrogen Impaired Water Bodies (Appendix H)

Squamscott River Subwatershed



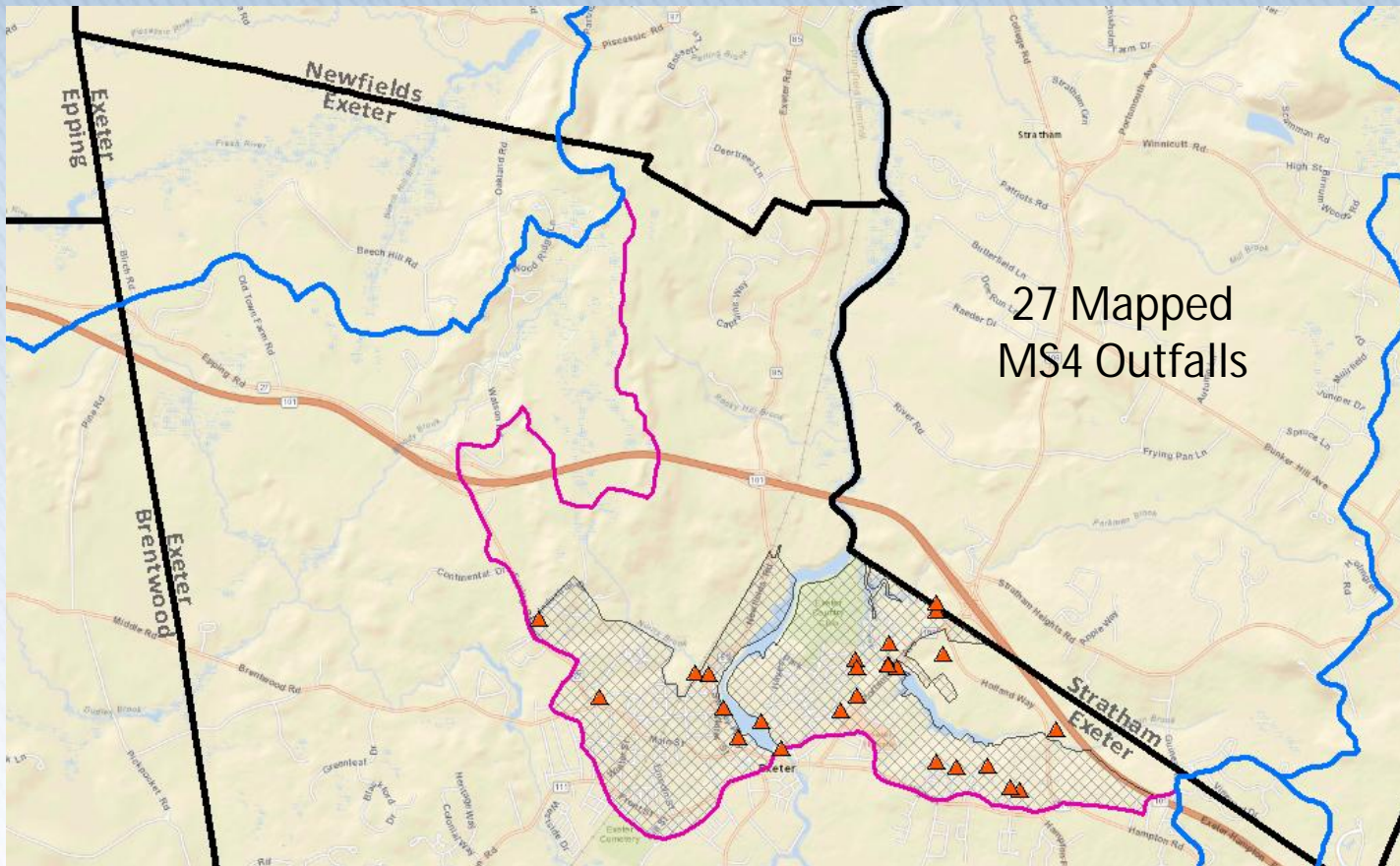
- Applies ONLY to Regulated Area
- 1,184 Acres
- 9% of Town Area
- 26% of Total Regulated Area

 MS4 Regulated Area


 Subwatershed Boundary


 Watershed Boundary


Enhanced BMPs for Nitrogen Impaired Water Bodies (Appendix H) Squamscott River Subwatershed



27 Mapped
MS4 Outfalls

 MS4 Regulated Area

 MS4 Outfall

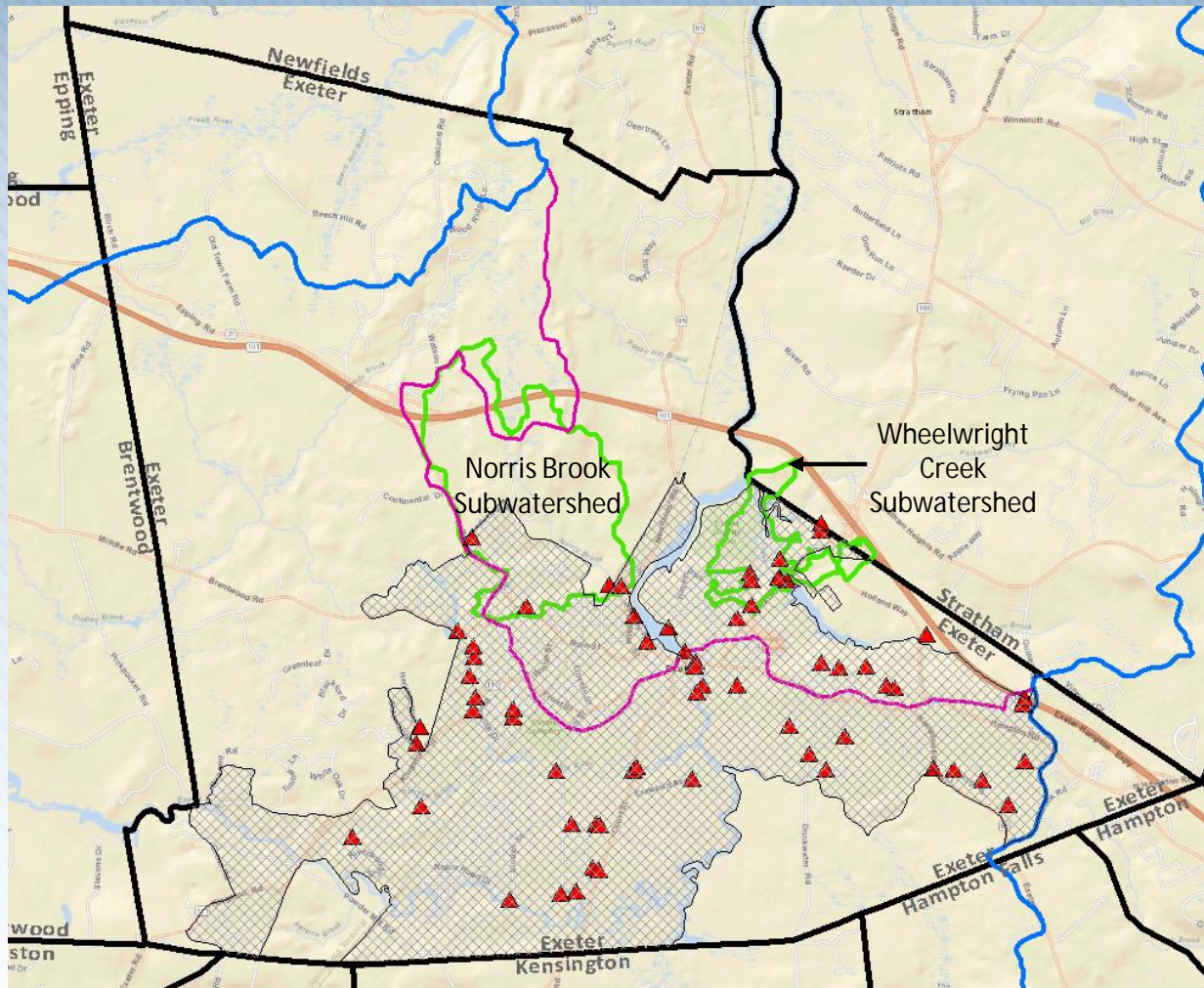
 Squamscott Subwatershed Boundary

 Exeter-Squamscott River Watershed Boundary

Enhanced BMPs for Nitrogen Impaired Water Bodies (Appendix H)

- Public Education
 - § Annual targeted message for disposal of grass and leaf litter
- Stormwater Management in New and Redevelopment
 - § BMPs optimized for nitrogen removal in ordinance and in retrofit inventory
- Good House Keeping and Pollution Prevention
 - § Use of slow release fertilizer
 - § Program to properly manage grass cuttings and leaf litter
 - § Street sweeping twice per year
- Nitrogen Source Identification Report (NSIR) (Year 4)
- Potential Structural BMPs (Year 5)
 - § List of planned structural BMPs on Town owned properties
 - § Implementation schedule
- Install one demonstration BMP (Year 6)
- BMP Tracking and Accounting

Enhanced BMPs for **Bacteria** Impaired Water Bodies (Appendix F)



- Applies ONLY to Regulated Area
- 3,930 Acres
- 68 Mapped Outfalls
- 31% of Town Area
- 93% of Total Regulated Area

MS4 Regulated Area

Squamscott Subwatershed Boundary

MS4 Outfall

Exeter-Squamscott River Watershed Boundary

Enhanced BMPs for Bacteria Impaired Water Bodies (Appendix F)

- Public Education
 - § Pet waste: message dog owners at issuance of dog license
 - § Septic system maintenance
- IDDE Program
 - § Any outfall catchment draining to impaired water body shall be designated Problem Catchments (investigate within 3 years)
 - § Problem Catchment Investigation Procedure
 - w Identify high potential areas for illicit connections and/or System Vulnerability Factors (SVFs)
 - w Manhole inspection
 - Ø Visual dry weather investigation
 - » If flow present sample for ammonia, chloride and surfactants
 - Ø Identification of SVFs
 - w Wet weather sampling (if two or more SVFs identified)
 - Ø Determine if wet weather induces high flows in sanitary or groundwater areas served by septic
 - w Isolation and Source Verification
 - w Removal and Confirmation

Program Evaluation, Record Keeping and Reporting (2003 and 2017)

- Annual Reporting
 - § Self-Assessment
 - § Progress on BMPs
 - § Summary of Info Collected
 - § Activities for next cycle
 - § Update SWMP
 - § Reliance on other entities
- Records kept for 5 years
- Records available to public

Municipality/Organization: Town of Exeter, NH

EPA NPDES Permit Number: NHR041007

Annual Report Number & Reporting Period: Year 12
April 1, 2014 – March 31, 2015

**NPDES PII Small MS4 General Permit
Annual Report
(Due: May 1, 2015)**

Part I. General Information


Contact Person: Jennifer Mates, P.E. Title: Assistant Town Engineer

Telephone #: (603) 418-6431 Email: jmates@exeternh.gov

Mailing Address: 13 Newfields Rd, Exeter, NH 03833

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: 

Printed Name: Russell Dean

Title: Town Manager

Date: 4/30/15

<http://www.exeternh.gov/publicworks/ms4-permit-annual-reports>

NPDES Wastewater Permit and AOC

- NPDES Wastewater Permit (2012)
 - § Total Nitrogen Limit of 3 mg/l
- Administrative Order on Consent (2013)
 - § Interim Total Nitrogen Limit of 8mg/l
 - § Initiate Construction of new WWTF April 2017
 - § Complete Construction of new WWTF mid-2019
 - § Begin “Tracking & Accounting” for Total Nitrogen
 - § Implement River Monitoring
 - § Develop & Implement Nitrogen Control Plan (2018)
 - § Evaluate Nitrogen Control Plan (2023)
 - § NCP Annual Reporting to NHDES and EPA

AOC: Nitrogen Control Plan

- Required under the NPDES Wastewater Administrative Order on Consent (AOC)
- Due September 2018
- Applies to Town Boundaries

AOC: Nitrogen Control Plan

Plan Elements:

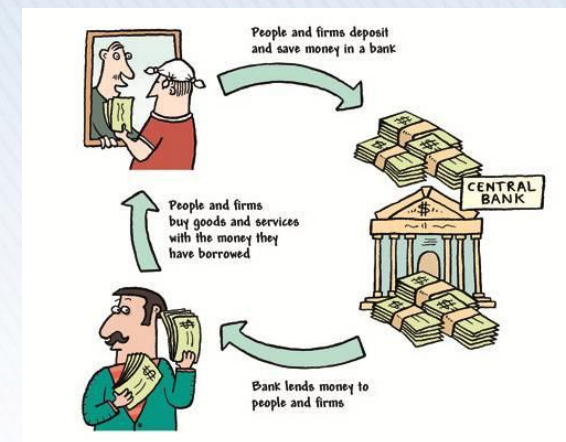
1. Quantify existing & future Nitrogen loads from non-point and point sources
 - w Non-point Sources: stormwater, septic, groundwater
 - w Point Sources: MS4 outfalls, WWTF
2. Load Reduction Targets
 - w Collaborate with NHDES & EPA
3. Identify Nitrogen Control Measures to Achieve Reduction Target
 - w Structural
 - w Non-structural

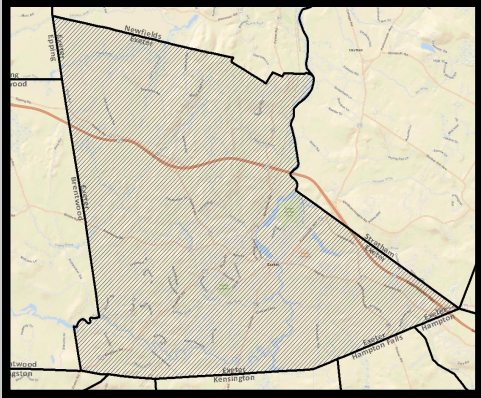
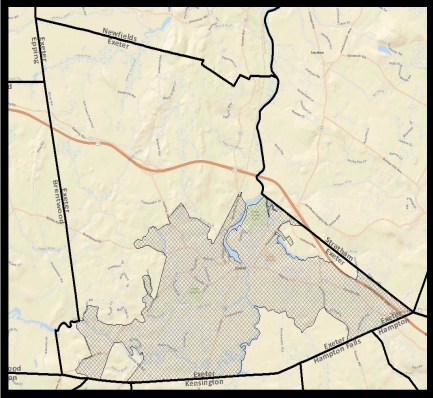


AOC: Nitrogen Control Plan

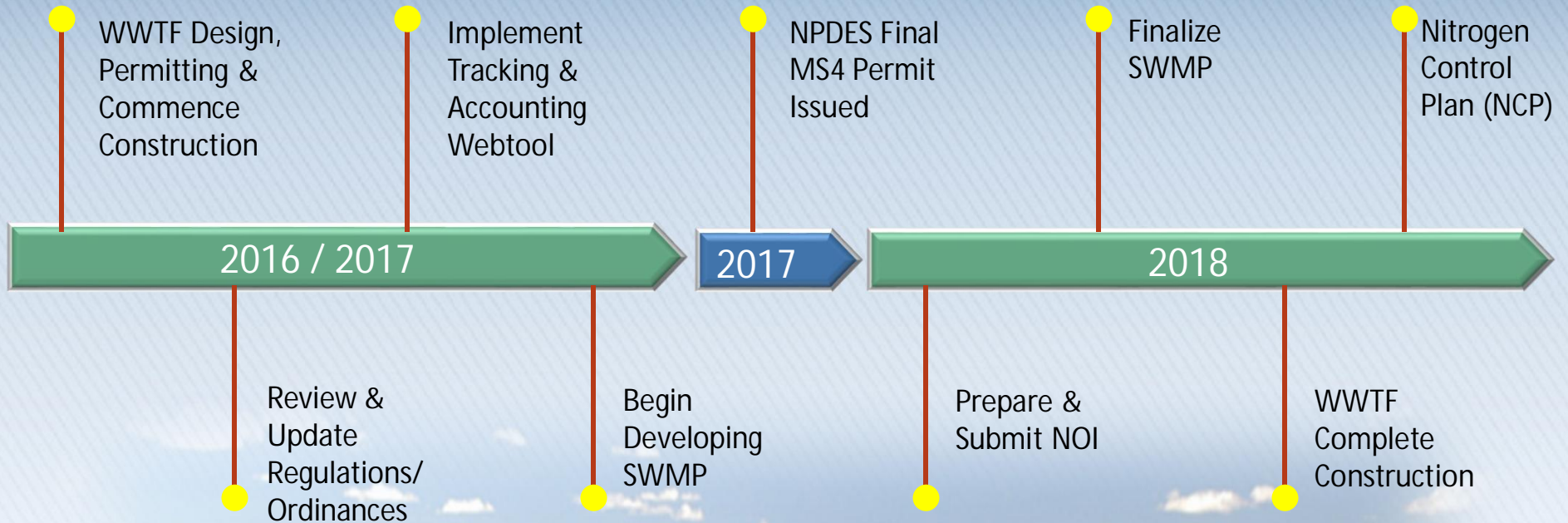
Plan Elements (continued):

4. Develop Implementation Plan
 - w Residential Fertilizer Ordinance (2016)
 - w Phase I WWTF Upgrade (2017-2019)
 - w Revised Stormwater Ordinance (~2018 or sooner)
 - w Non-structural BMPs (TBD in NCP)
 - w Structural BMPs (TBD in NCP)
5. Utilize Adaptive Management
 - w Iterative process of decision making in the face of uncertainty, with the aim at reducing uncertainty over time with monitoring.
6. Assess Financial Capability
 - w How will we pay for it?
7. Demonstrating Compliance
 - w Tracking & Accounting
 - w Monitoring
8. Prepare "AOC Engineering Evaluation" (2023)



Driver	AOC	MS4
Coverage		
Pollutant(s) of Concern	Nitrogen	Nitrogen Bacteria/Pathogens Chloride Total Suspended Solids
Sources	Point (WW, SW) Non-Point (GW, SW, Septic)	Non-Point (SW)
Scope	Management Tracking Accounting PTAPP	Management Tracking Accounting PTAPP
Initial Timeframe	2013-2023+	2017-2022+
Deliverable (Timeframe)	Nitrogen Control Plan (2018)	Nitrogen Source Identification Report (2021)

Near Term Implementation



Contacts

- Jennifer Mates, PE
Assistant Town Engineer
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603.418.6431
- Lyndsay Butler, PE
Project Manager
Lyndsay.Butler@wright-pierce.com
603.430.3728

