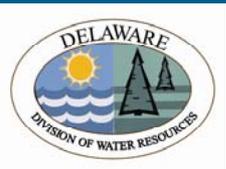


# Inland Bays Pollution Control Strategy

Jennifer Volk, DE DNREC  
7th Annual Non-Point Source  
Advisory Committee Meeting  
March 18, 2009



# Federal Clean Water Act

- States must prepare and submit to the EPA every other year:
  - Watershed Assessment Report (305(b) Report)
  - List waters not meeting standards (303(d) List)



## ➤ Monitoring revealed impairments

- Excessive nutrient concentrations and low dissolved oxygen levels

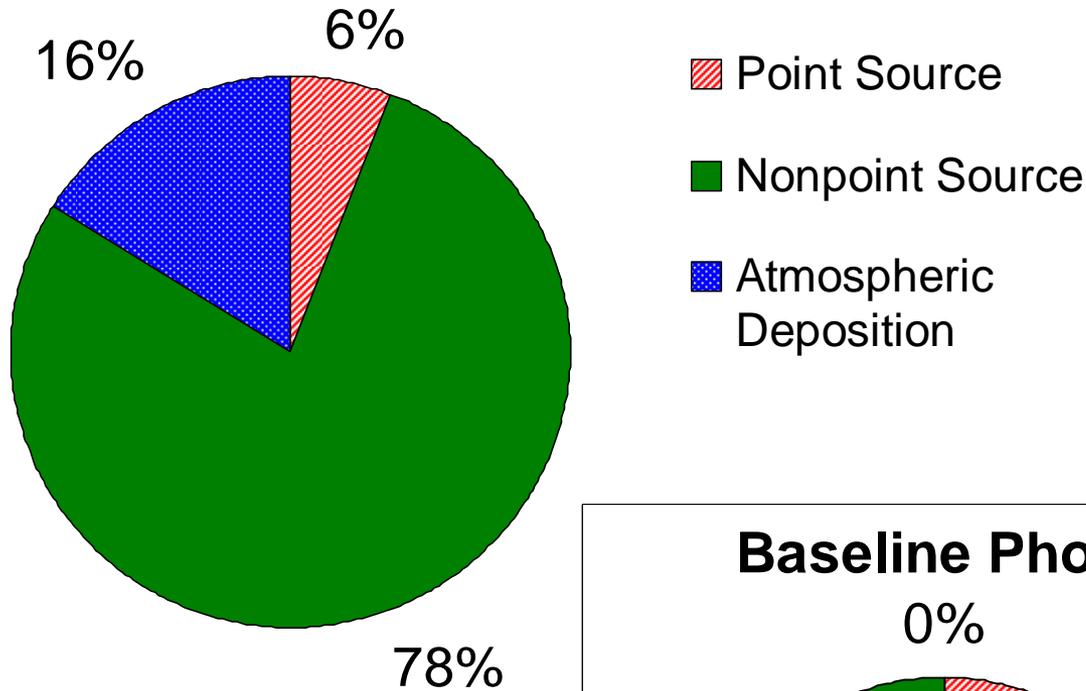
- Loss of habitat
- Alteration of food web
- Fish and shellfish kills
- Human health effects



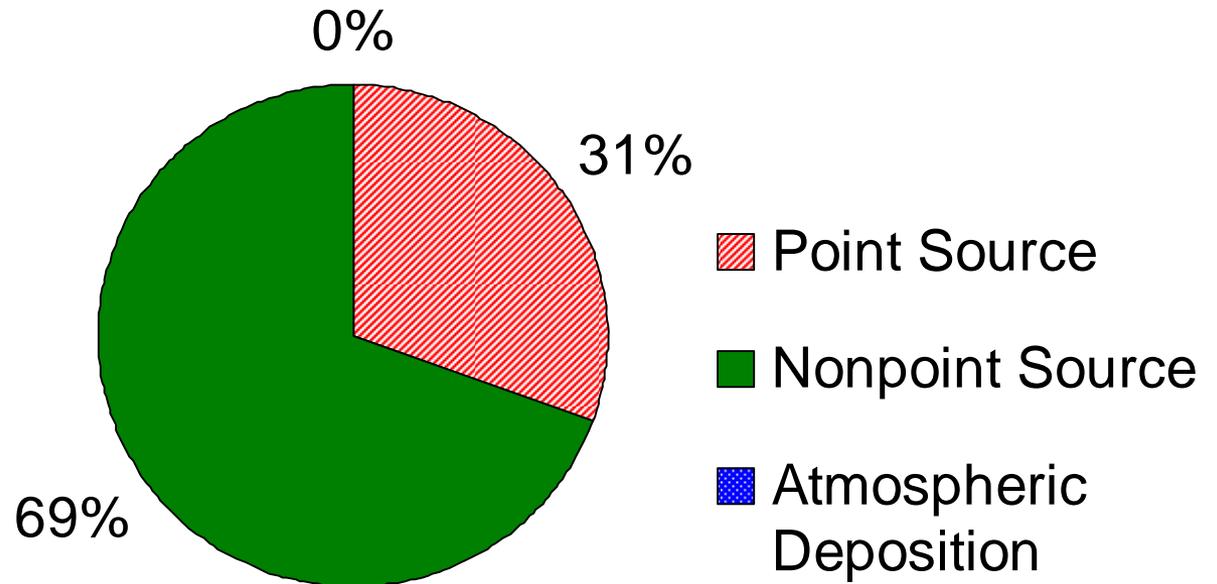
Dead-end canal of Rehoboth Bay, August 28, 2000

# The Problem

## Baseline Nitrogen Load (kg/d)



## Baseline Phosphorus Load (kg/d)



# Total Maximum Daily Loads

- The maximum amount of a pollutant that can enter surface waters and still meet water quality standards

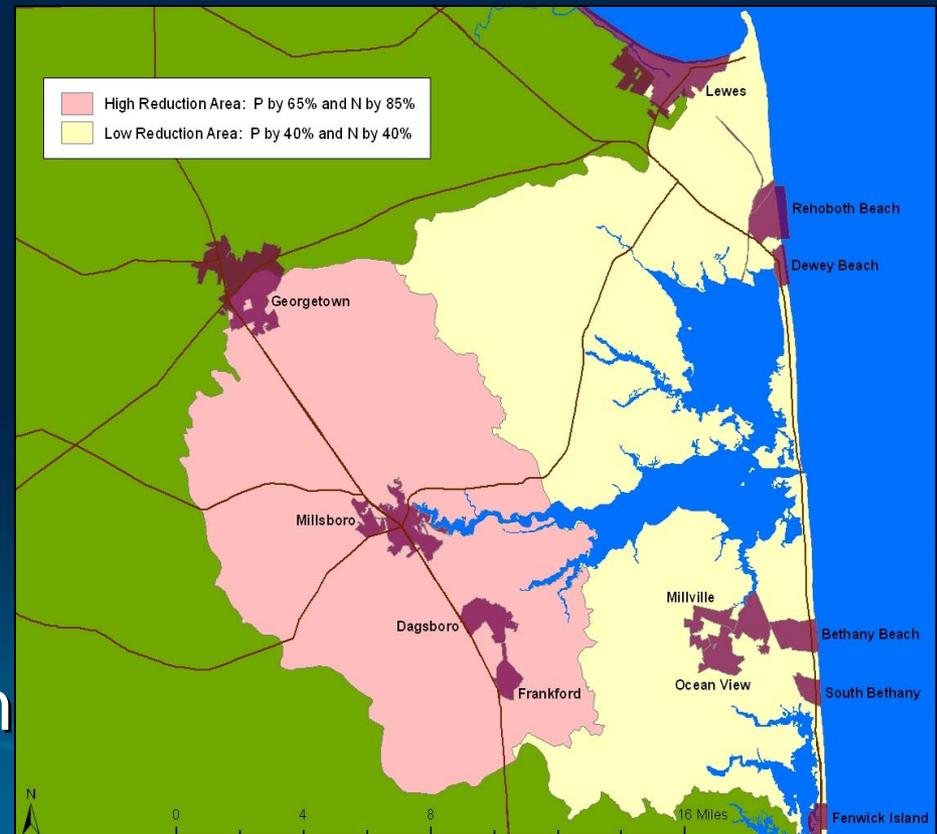
$$\text{TMDL} = \text{WLA} + \text{LA} + \text{MOS}$$

- WLA = waste load allocation (point sources)
- LA = load allocation (nonpoint sources)
- MOS = margin of safety

# Inland Bays

## Total Maximum Daily Loads

- Systematic elimination of all point sources of nutrient loading
- Remove 40-85% nonpoint N
- Remove 40-65% nonpoint P
- 20% reduction in atmospheric deposition of N via Clean Air Act
- Implementation through a Pollution Control Strategy



# What is a Pollution Control Strategy (PCS)?

- Combination of voluntary and regulatory actions to reduce nutrient loadings
- Designed to achieve the TMDL
- Recommended by Tributary Action Team (process began in 1998)

# The PCS “Technical Document”

- Introduction & Background
  - Sources of Pollutants
  - PCS Development Process
- Progress to date
  - Point Source
  - Nonpoint Source
- Recommendations for future actions
- How the PCS should achieve the TMDL
- Costs
- Implementing Organizations
- Appendices

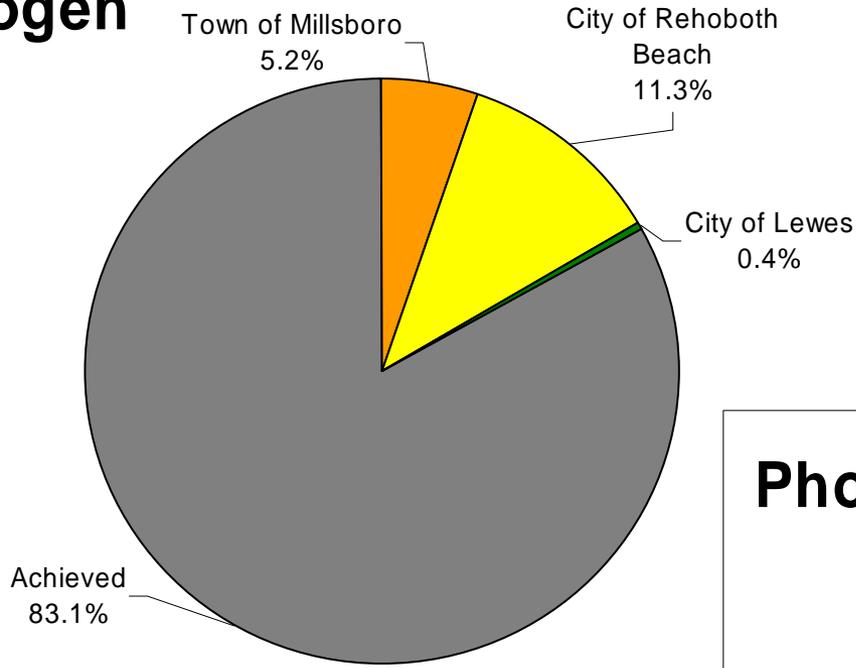
# Progress to Date

- Substantial achievements have been made since the 1988-1990 TMDL baseline period
  - Point sources: 8 eliminated, 1 trade, 3 left

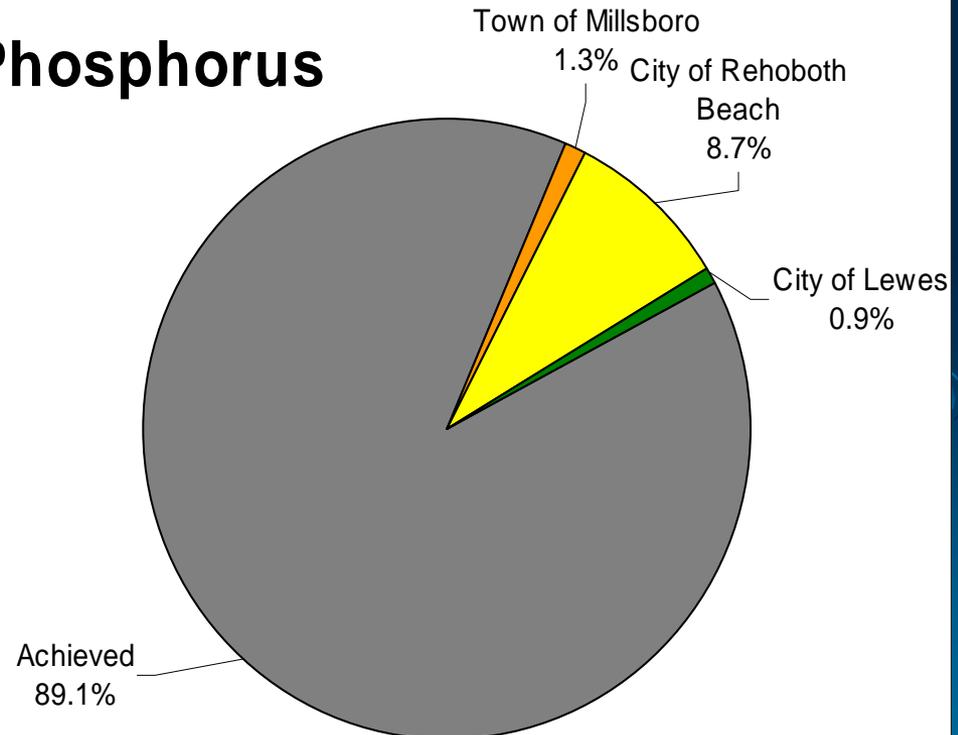


# Point Source Progress to Date

## Nitrogen



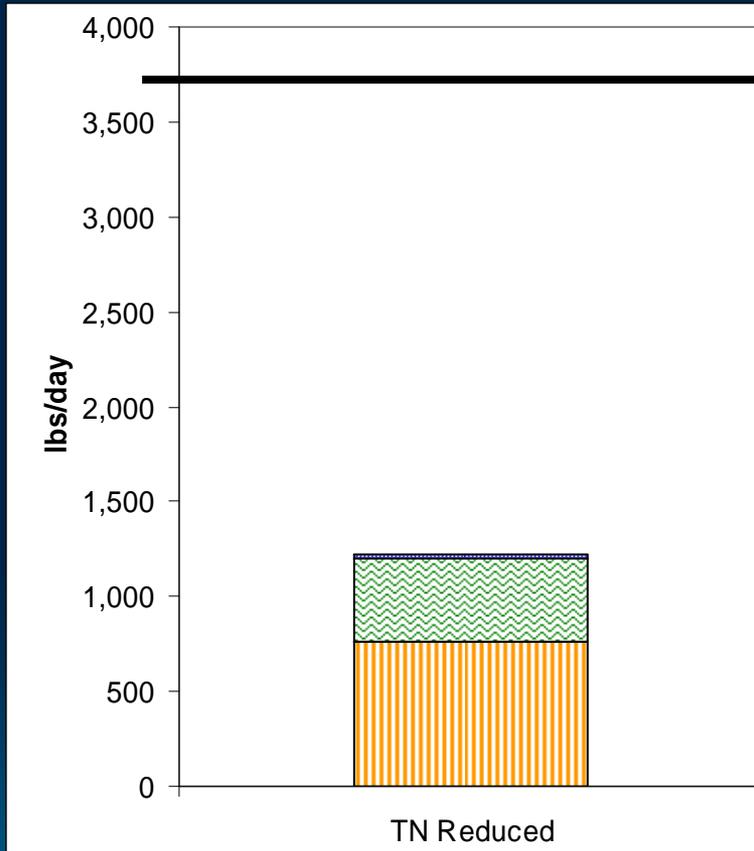
## Phosphorus



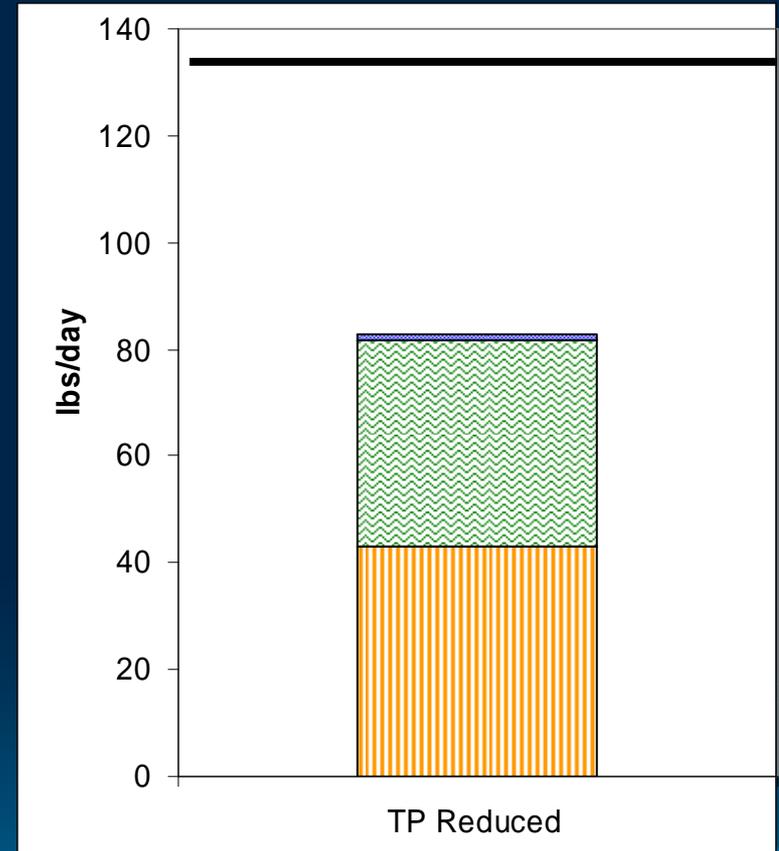
# Progress to Date

- Substantial achievements have been made since the 1988-1990 TMDL baseline period
  - Point sources: 8 eliminated, 1 trade, 3 left
  - Nonpoint sources:
    - Agriculture-nutrient management plans, manure relocation, phytase, cover crops, other BMPs
    - Wastewater-septic elimination, holding tank inspection program
    - Stormwater-implementation of Sediment and Stormwater Law

# Nonpoint Source Progress to Date



31 % of Goal Achieved



62 % of Goal Achieved

# Regulations Governing the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Back Bay Water

- Section 1: Authority & Scope
- Section 2: Definitions
- Section 3: Point Source Discharges
- Section 4: Discharge Limits
- Section 5: Non-Point Source Discharges
- Section 6: Wastewater Treatment and Disposal Systems -
- Section 7: Wastewater Treatment and Disposal Systems Maintenance and Inspection Program
- Section 8: Wastewater Treatment and Disposal Systems Performance Standards
- Section 9: Enforcement, Challenges, and Waivers
- Section 10: Severability
- Section 11: Other (Reserved)

**Adopted by Secretary Hughes  
October 15, 2008**

**Published November 1, 2008**

# Establishment of a Buffer Zone

*(Section 4)*

- For all new major subdivisions and new activities require a site or major subdivision plan
- Water features to be buffered mapped

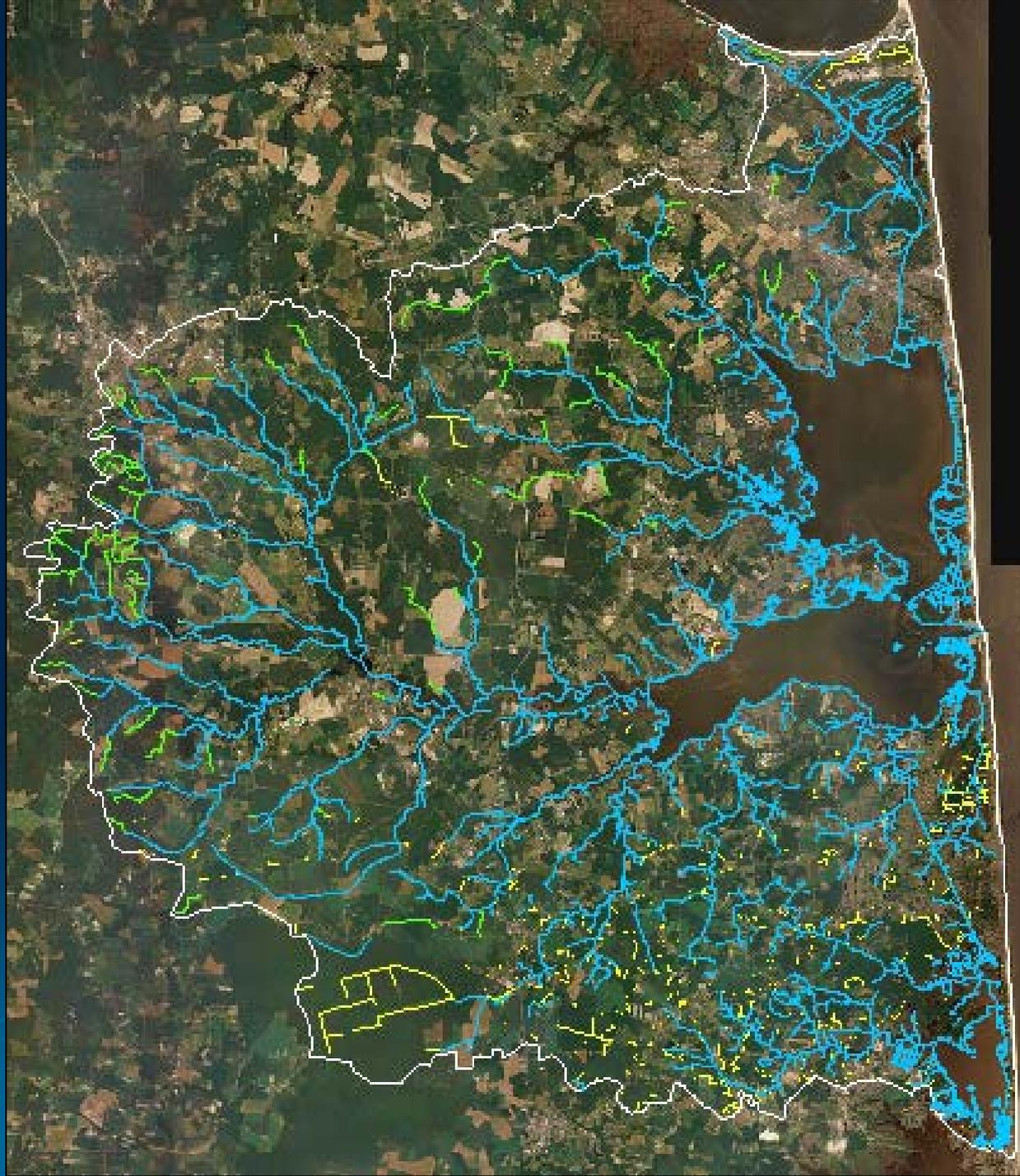


# Map of Water Features to be Buffered in the Inland Bays Watershed

Perennial - Primary  
(Blue)

Intermittent - Secondary  
(Green)

Forested Ditch - Secondary  
(Yellow)





Map of Water Features to Buffered in the Inland Bays Watershed



Tasks

- [Find Tax Parcel](#)
- [Find Address](#)

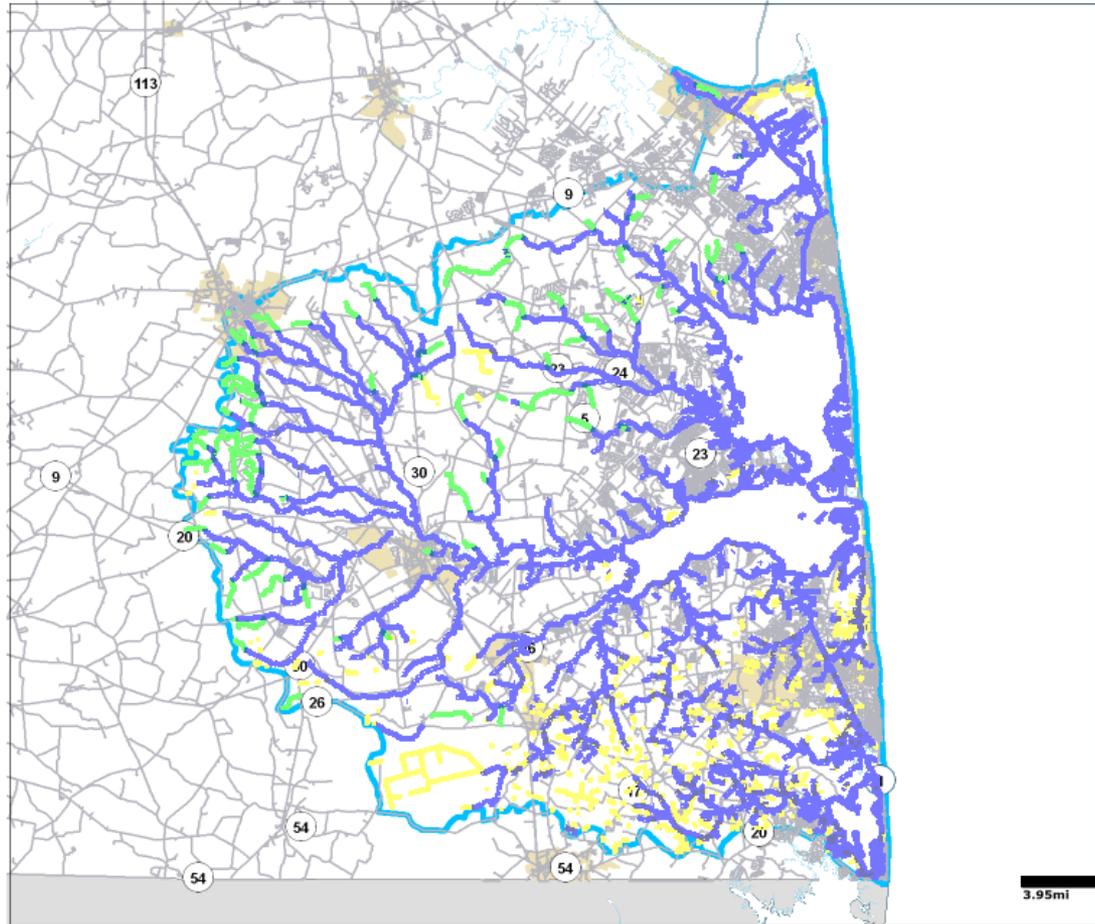
Results

Map Contents

- PCSLines
  - Stream - Primary Buffer
  - Stream - Secondary Buff
  - Forested Ditches - Seco

Navigation

Overview



3.95mi

http://maps.dnrec.delaware.gov/inlandbayspcs/



State of Delaware The Official Website for the First State



Visit the Governor | General Assembly | Courts | Other Elected Officials | Federal, State & Local Sites

State Directory | Help | Search Delaware: [input] go

Citizen Services | Business Services | Visitor Info

Map of Water Features to Buffered in the Inland Bays Watershed



DNREC Portal | State Portal | Help

Tasks

- [Find Tax Parcel](#)
- [Find Address](#)

Results

Map Contents

- PCSLines
  - Stream - Primary Buffer
  - Stream - Secondary Buffer
  - Forested Ditches - Secondary
- InlandBaysPCS
  - Roads
  - Parcels
  - Inland Bays Watershed Boundary
  - Rivers, Lakes and Bays
  - Streams
  - 2007 Photography

Navigation

Overview



# Establishment of a Buffer Zone

*(Section 4)*

- For all new major subdivisions and new activities require a site or major subdivision plan
- Water features to be buffered mapped
- 100-ft on primary & 60-ft on secondary waters
- Can be reduced to 50-ft on primary and 30-ft on secondary waters when combined with
  - Advanced stormwater management options and
  - Development-wide nutrient management plan
- Buffers will exist in community open space and will be managed by homeowners' associations

# Increased Treatment of Stormwater

*(Section 5)*

- If water features are present
  - Establish standard-width buffers
  - Establish reduced-width buffers in combination with other pollution reduction actions
- If water features are not present, utilize one or more pollution reduction action that reduces nutrients and sediment in stormwater runoff
  - Vegetated stormwater collection areas
  - Stormwater collection areas that allow water to soak back into the ground
  - Preserve and create forested areas

# Effective Date - Sections 4 and 5

- In the County: November 11, 2008
- In the towns: November 1, 2009
- TRIGGER: Submission of major subdivision plans, site plans, concept plans, initial stage calculation sheets, requests for service level evaluation, or requests for scoping meetings to DELDOT for the purpose of securing a letter of no objection, support facilities report, entrance location, or entrance approval (or submission of application to the County or a municipality when DELDOT submissions are not required)
- If after 5 years from the effective date, an application for the project has not been submitted to the appropriate county or local government and substantial expenditures have not been made for the project to proceed, all stormwater and buffer provisions of these Regulations will be applicable to the project.

# Improved Maintenance and Performance of Onsite Wastewater Treatment and Disposal Systems

- General (Section 6)
- Operation, maintenance, and inspection program (Section 7)
- Performance standards (Section 8)

# OWTDS-General

(Section 6)

- Eliminate cesspools and seepage pits
- Permits temporary holding tanks only if central sewer will be available within 5 years
- No new drainfields on new parcels within 100 feet of primary waters
- All innovative and alternative ***technologies*** having flows less than or equal to 2,500 gallons per day to achieve PSN3
- Effective: December 1, 2008



# OWTDS-Operation, Maintenance & Inspection Program *(Section 7)*

- Septic systems must be pumped out and inspected prior to property sale or transfer
  - Standard inspection form, or
  - Other documents to prove system is in good working order can be submitted to DNREC to satisfy requirement
    - For new systems, the certificate of completion
    - Documentation of pump out and inspection within the previous 36 months
    - Proof of a licensed operator or an annual service contract with a certified service provider
- Effective: April 30, 2009

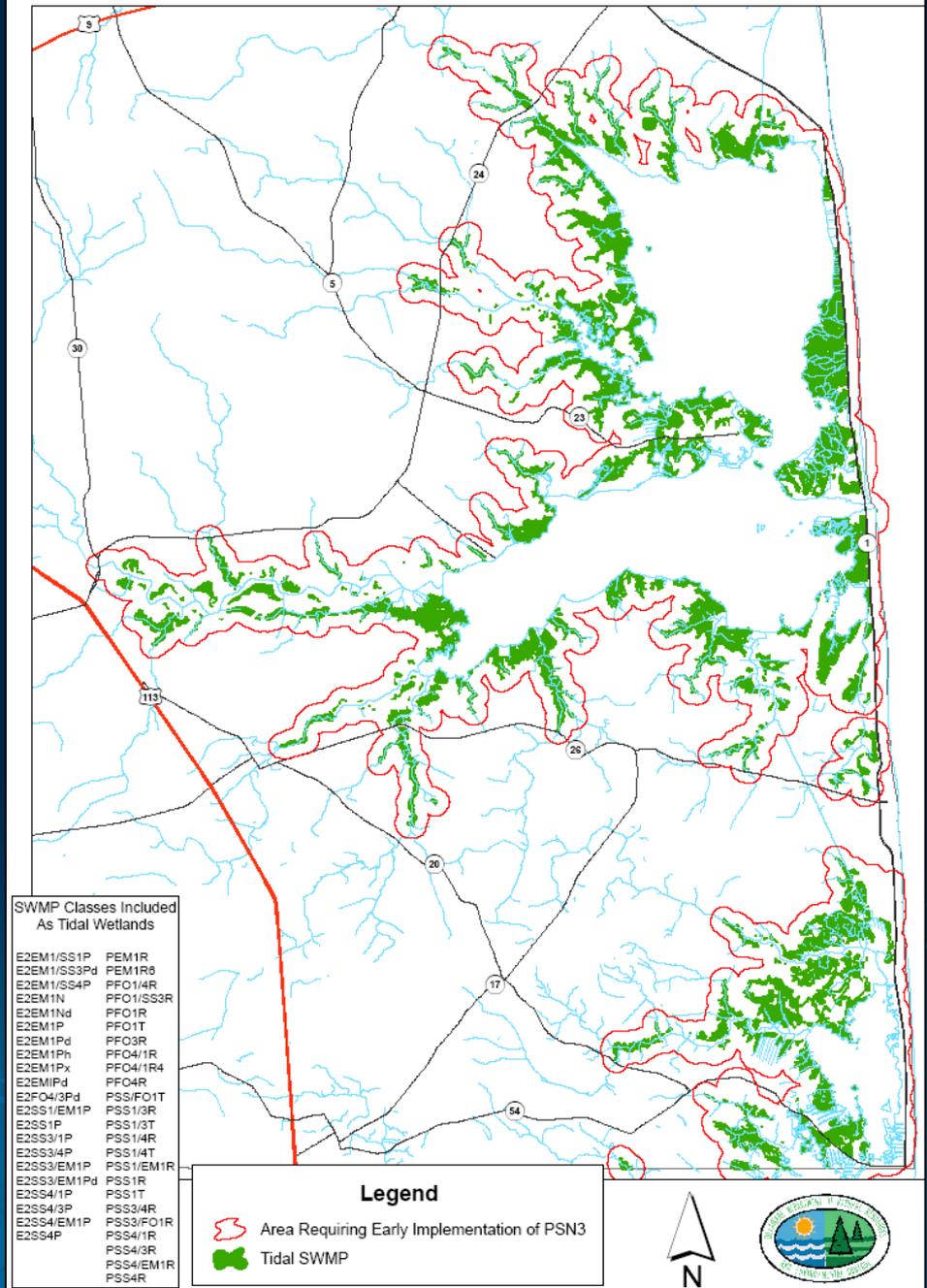


# OWTDS-Performance Standards

*(Section 8)*

- Septic systems must achieve a specified level of performance which depends on system size, location, and age
  - Large systems >2,501 gallons per day and small systems located on properties within 1,000 feet of tidal waters and associated tidal wetlands
    - Effective: December 31, 2008
  - Systems less than 2,500 gpd (individual septics) on properties more than 1,000 feet from tidal waters and associated tidal wetlands
    - Effective: January 1, 2015
- 

- New and replacement small systems on properties entirely within the "red zone" must achieve Performance Standard Nitrogen 3 beginning
  - December 31, 2008
- New and replacement small systems on properties outside of the "red zone" must achieve PSN3 beginning
  - January 1, 2015





Areas Requiring Early Implementation of PSN3



Tasks

- [Find Tax Parcel](#)
- [Find Address](#)

Results

Map Contents

- PCSBuffers
  - Tidal SWMP
  - Area Requiring Early Imp
- InlandBaysPCS
  - Inland Bays Watershed Bour
  - Major Roads
  - All Roads

Navigation

Overview



# Enforcement, Challenges & Waivers

*(Section 9)*

- Enforcement as outlined in Title 7, Chapter 60, Section 6005 of the Delaware Code.
- Procedures for challenging regulatory maps
- Procedures for requesting waivers and hardship waivers

# For more information...

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302-739-9939

Jennifer.Volk@state.de.us

➤ [http://www.dnrec.state.de.us/water2000/Sections/Watershed/ws/ib\\_pcs.htm](http://www.dnrec.state.de.us/water2000/Sections/Watershed/ws/ib_pcs.htm)