



Improving Stormwater Quality  
and Protecting our Groundwater  
in NJ

Ed Frankel  
Acting Chief Bureau of Nonpoint  
Pollution Control

Presented at: NJ Water Monitoring Summit

December 2, 2011

# Why Are We Concerned About Stormwater Pollution?

- 44% of NJ assessed river miles do not support primary contact recreation
- 40 - 70% of existing water quality problems attributed to NPS
- NURP study showed that MS4s carried 10x the TSS than STP's

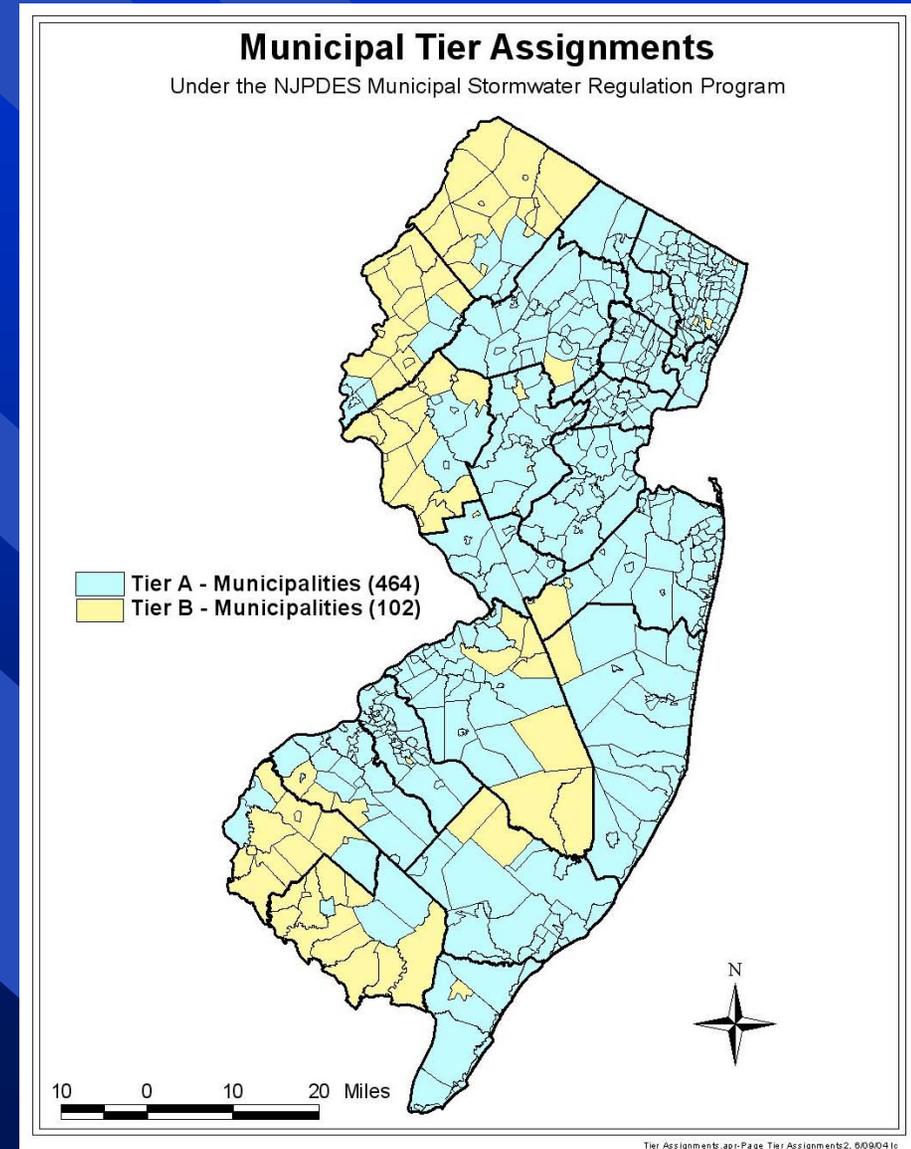


# Bureau of Nonpoint Pollution Control

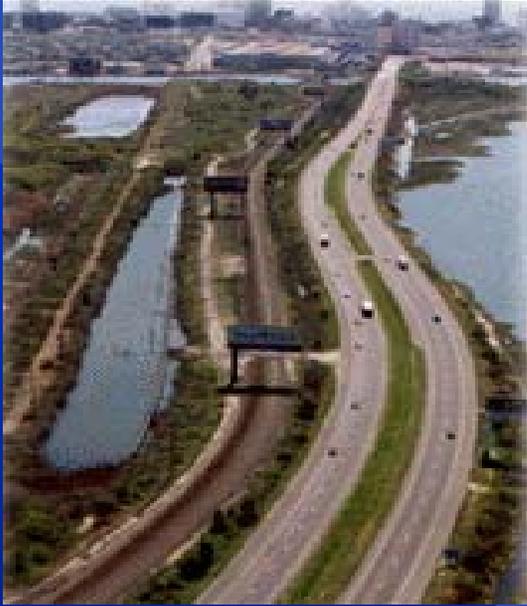
- Stormwater Management (new development and redevelopment)
- Stormwater Permitting
  - » Municipal
  - » Industrial
  - » Construction
- Ground Water Protection
  - » Onsite Systems
  - » Permits

# How are Municipalities Regulated?

- All municipalities that own or operate MS4s in the state
- Tier A Permit
  - 457 municipalities identified as:
    - » Fully or partly urbanized areas;
    - » Minimum population of 10,000 and density of 1,000/square mile; or
    - » SIIA coastal municipalities (Monmouth to Cape May)
- Tier B Permit
  - 99 municipalities



# Who Else is Regulated?



- **Highways** (33 agencies) - Most State, interstate and county roads, maintenance facilities and public service/rest areas throughout the State

- **Public Complexes** (75 Federal, State and County) - Universities, hospitals, military bases, other institutions primarily in Tier A:
  - 2 or more buildings
  - 1,000 employees, students (18 or over), military or residents



# Tier A & Tier B Common Permit Requirements

- New Development - Develop and adopt Stormwater Management Plan and Ordinance pursuant to Stormwater Management Rules



# Post-Construction Stormwater Management in New Development and Redevelopment

- Ensure compliance with RSIS for stormwater management.
- Ensure adequate long-term operation and maintenance of BMPs.



# Tier A Municipal Stormwater Permit Statewide Basic Requirements



Develop a Stormwater Pollution Prevention Plan that addresses EPA Minimum Control Measures recast as Statewide Basic Requirements:

- New Development
- Existing Development
- Local public education
- Improper disposal of wastes
- Floatable & solids controls
- Municipal maintenance yard operations

# Local Public Education



- Incorporate all SBRs with an educational message into one cohesive package
  - Stormwater/NPS
  - Fertilizer/Pesticide
  - Waste Disposal
- Conduct annual mailings of information sheets
- Annually conduct an environmental “event”
- Establish a storm drain labeling program to label all storm drains operated by the municipality

# Improper Disposal of Wastes

- Pet Waste Ordinance
- Litter Ordinance
- Improper Disposal of Waste Ordinance
- Wildlife Feeding Ordinance
- Yard Waste Ordinance/  
Collection Program
- Illicit Connection and MS4  
Mapping, Ordinance and  
Elimination Program



- Refuse Container/Dumpster
- Private Storm drain Inlet  
Retrofitting

# Solid and Floatable Control

- Street Sweeping
- Storm Drain Inlet Retrofitting
- Stormwater Facility Maintenance



# New Storm Drain Inlet



# New Storm Drain Inlet



# Municipal Maintenance Yard Operations

- De-icing Material Storage
- Develop and implement SOPs for
  - Fueling Operations
  - Vehicle Maintenance
  - Good Housekeeping Practices
- Compile inventory list of possible sources of pollutants



# Employee Training

- Develop and conduct an annual employee training program that covers the appropriate topics for employees



# Additional Measures

May require one or more of the above BMPs, or other appropriate BMPs, based upon Water Quality Management Plan requirements such as TMDLs or Regional Stormwater Management Plans

# NJDEP Sponsored Statewide Activities

The Best Place for Fertilizer  
**Is the Lawn**

Using products wisely keeps them out of waterways

- Statewide Public Education

# Stormwater Management Rule Elements

- Statewide requirements
  - Nonstructural SWM strategies
  - Groundwater Recharge
  - Quantity Control
  - Quality Control
- Special Protection Measures for C1
- Municipal Stormwater Management Plan and Ordinance
- Regional Stormwater Management Plan



# Nonstructural Stormwater Management Techniques

Protect Areas Beneficial for Water Quality

Minimize and Disconnect Paved Surfaces

Minimize Disturbance Including Clearing and Grading

Provide Low-Maintenance Vegetation

Minimize Soil Compaction

Provide Vegetated Open Channel Conveyance

Provide Preventative Source Controls

# Groundwater Recharge

- Maintain existing ground water recharge OR
- Infiltrate the Increase in 2-Year storm volume
- Groundwater shall not be recharged in areas with high pollutant loading
- Does not apply in Urban Redevelopment Areas



# Water Quality

- Reduce post-construction TSS load by 80%
  - Differing TSS removal based on BMP
- Reduce nutrients to the maximum feasible
  - Minimize nutrient input
  - Select BMP for optimum nutrient removal
  - Design BMP so nutrients are not imported (geese control)



# Water Quantity

- Post-development hydrograph less than pre-development hydrograph for the 2, 10, & 100-year storms **OR**
- Maintain peaks for the 2, 10, and 100-year storm, and demonstrate no d/s impact with full development of stream drainage area **OR**
- Reduce 2, 10, and 100-year peaks to 50%, 75, and 80%



# Special Area Protection Measures

- Mandatory 300 foot water resource protection area
- Special Area Protection Measure not applicable to single family homes, less than 1/4 area of impervious cover, or 1 acre of disturbance



# Industrial Permitting

- Individual Permits
- General Permits
  - Basic General (Remove and Cover)
- Industry Specific
  - Asphalt, Concrete, Mining and Quarry, CAFO, Scrap and Auto Dismantling, Wood Recyclers, Newark Airport
- Construction General Permit

# Protecting Our Groundwater

- Onsite system less than 2000 Gal/day
  - Conventional systems (septic) administered by local authority (Chapter 199)
  - System that do not meet Chapter 199 requirements need a TWA
- Large groundwater systems (NJPDES)
  - Requires permit conditions

# Contact Information

## Municipal Permit

Bureau of Nonpoint Pollution Control

609-633-7021

[www.njstormwater.org](http://www.njstormwater.org)

**Vicki Margulies - Supervisor:** Hunterdon, Mercer, Sussex,  
Morris, Somerset, Warren

**Louisa Lubiak:** Essex, Burlington, Passaic, Salem,  
Cumberland, Union, Gloucester

**Anthony Washington:** Monmouth, Ocean, Bergen,  
Middlesex, Hudson

**Matt Klewin:** Public Complexes and Highway Agencies

# Contact Information

## Stormwater Management

Bureau of Nonpoint Pollution Control

609-633-7021

[www.njstormwater.org](http://www.njstormwater.org)

Sandy Blick - Supervisor

Elizabeth Dragon

Titus Magnanao

Lisa Schaefer

Adriana Caldarelli

# Groundwater Unit

609-633-7021

- Ron Bannister – Supervisor
- Greg Chin
- Brian Sage
- June Gazek-Harris
- Keith Howell
- Dave Pepe
- Mike Pigliacelli

# Stormwater Unit

## Individual and Basic General

609-633-7021

- Brian McLendon – Supervisor
- Shashi Nayak
- John Ashton
- Kevin Ball
- Dan Kutti
- Kerri Standowski