

# Governor's Barnegat Bay Priority Initiative

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# Governor's 10 Point Plan for Barnegat Bay

1. Close Oyster  
Creek

2. Fund Stormwater  
Mitigation Projects

3. Reduce Nutrient  
Pollution from Fertilizers

4. Require Post-Construction  
Soil Restoration

5. Acquire Land in the  
Watershed

6. Est. Special Area  
Management Plan

## **7. Adopt More Rigorous Water Quality Standards**

### **❖ Monitoring & Modeling**

8. Educate the Public

9. Fill in Research Gaps

**❖ 10 research projects**

10. Reduce Water Craft  
Impacts



# Features

- BB is one of the 5 DEP goals
- BB is one of the Governor's Legacy items
- Emphasis is on action now, without waiting for water quality data
- Barnegat Bay Blitz was an additional opportunity to demonstrate commitment
- BB considered a model – expansion to other watersheds in the future



# 5 DEP goals

- Goals establish the “North Star”
- Provide context to discuss desired results
- Work together to gain greater environmental benefits
- Challenge our existing assumptions
- Move beyond tactics to apply new strategies
- Encourage passion



# Next Generation of Environmental Management – 5 goals

- 1. Comprehensive Regional Environmental Management - “the umbrella”
- 2. Barnegat Bay!!!! - “the model”
- 3. Enhanced Protection of Overburdened Communities – “environmental health”
- 4. Sustainable Funding for Parks – “accessible recreation”
- 5. Green Energy Initiatives – “sustainability”



# Goal 2 – Barnegat Bay

- Clear example of a unique “Region”
- Enact the 10-point plan
- Develop additional strategies to restore the bay
- Multimedia, cross-program
- Model for protection of all surface water bodies
- Involve the communities/ stakeholders

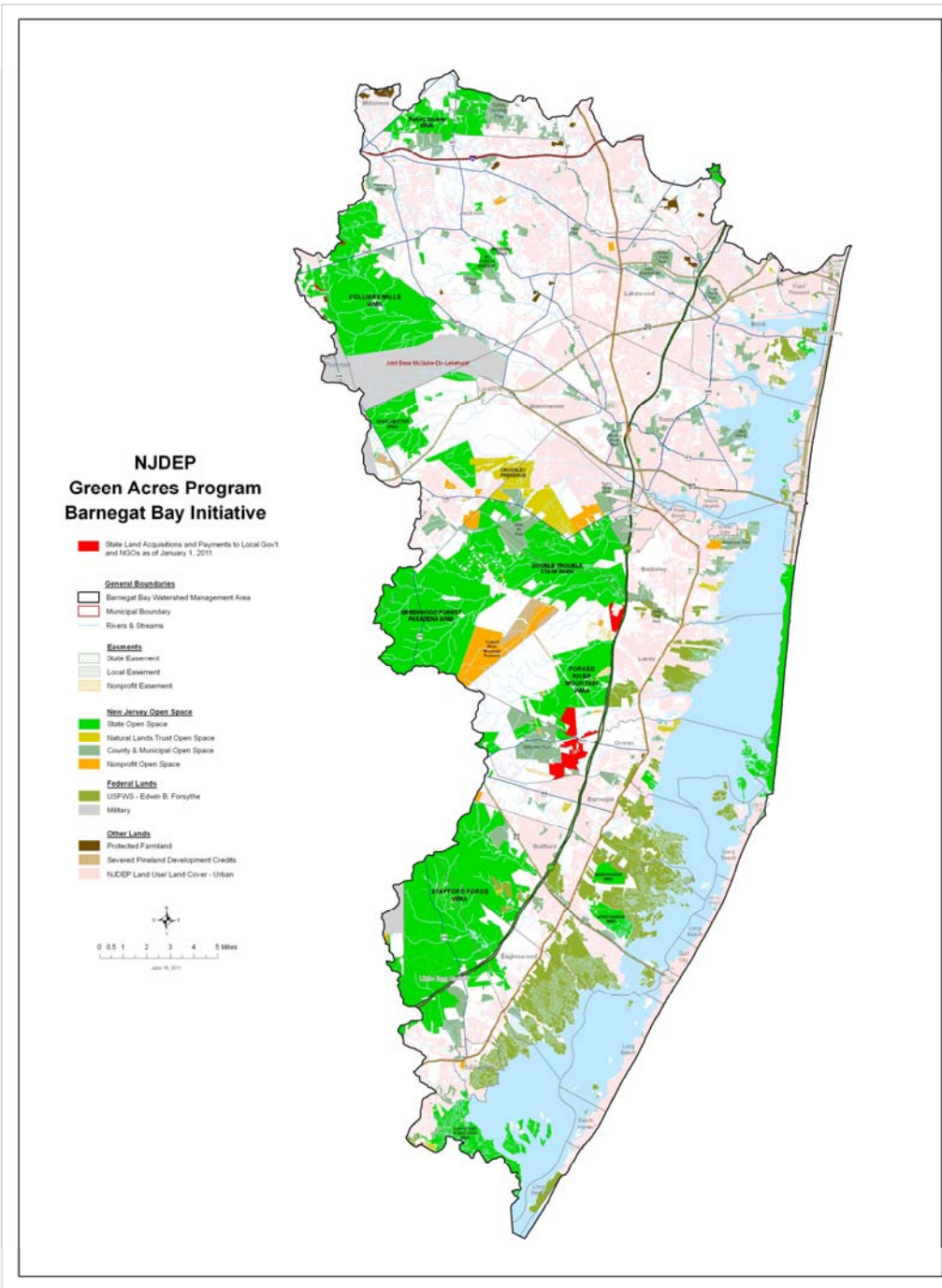


# Selected Highlights



# Action Item 5 – *Acquire Land in the Watershed*

## Open Space Acquired to Date





## Action Item 3 – *Reduce Nutrient Pollution from Fertilizer*

- **Jan 5, 2011** – Gov signs Fertilizer Act, establishing most restrictive nitrogen content nationally & application rates
- 3 phased implementation:
  - **Phase 1: No application** Nov 15-Mar 1 (residential), Dec 1-Mar 1 (commercial)
  - **Phase 2:** Jan 5, 2012 – training & certification for professional applicators
  - **Phase 3:** Jan 5, 2013 – all turf fertilizer: 20% slow-release nitrogen & zero phosphorus



# Action Item 7 – *Comprehensive Ambient Water Monitoring Project*

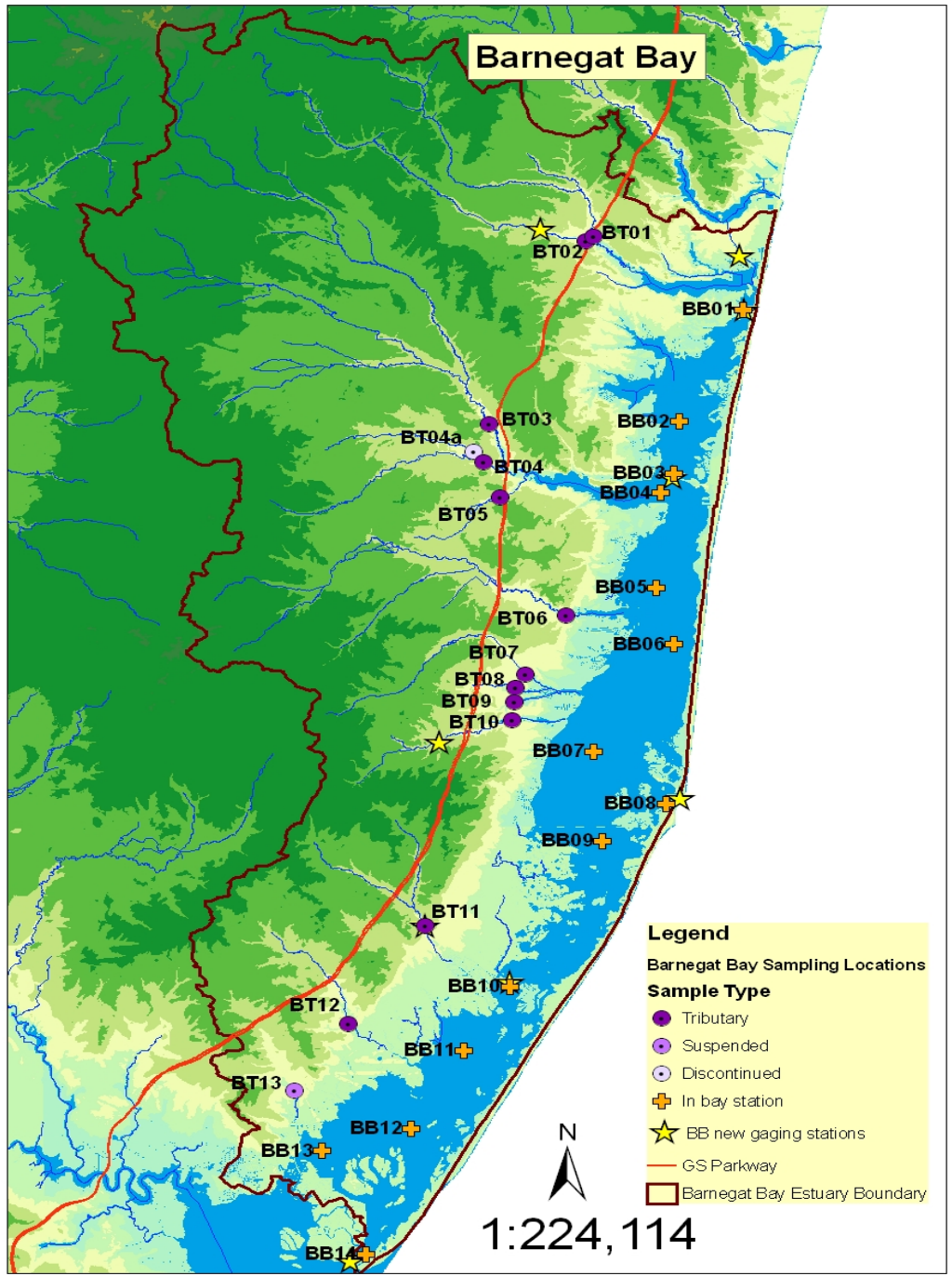
## Phase 1 Monitoring Plan Components

- Grab water quality sampling
  - 13(12) water quality grab sample locations at major tributaries
  - 14 in bay water quality grab sample locations
  - Continuous WQ monitoring at Toms River gaging station

[http://waterdata.usgs.gov/nj/nwis/uv/?site\\_no=01408500&PARAMeter\\_cd=00010,00095,00300,00301,00400,63680](http://waterdata.usgs.gov/nj/nwis/uv/?site_no=01408500&PARAMeter_cd=00010,00095,00300,00301,00400,63680)

- Flow Monitoring
  - Flow monitoring Fresh Water Tributaries
  - 3 new tributary flow stations in addition to 3 existing ones





# But we couldn't do it alone...

- Approached members of the NJ Water Monitoring Council
- Divided the work among many hands
- Common Quality Assurance Project Plan
- Common training and performance testing
- New DHSS lab was not up & running
- Significant logistical challenges



# Partners

Barnegat Bay Partnership



Brick Township MUA



DEP Forest Resource Education Center



EPA Region 2



Monmouth University/Urban Coast Institute



Ocean County Health Department



Ocean County Utilities Authority



Ocean County Vocational Technical School - MATES



Pinelands Commission



US Geological Survey



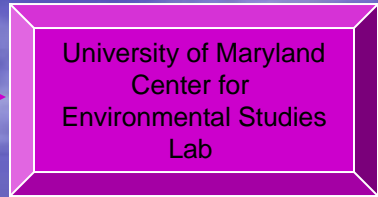
# Involvement of Office of Quality Assurance

- Training
- Performance Testing Samples
- Audit of partners in the field
- Certification of methods
- Troubleshooting



# Barneгат Bay Monitoring Program Sample Routing

NJDEP Trenton



- Partners:**
- NJDEP Bureau of Marine Water Monitoring
  - USEPA Region 2
  - Monmouth University



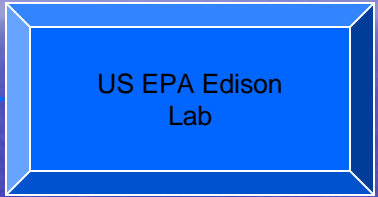
Bay Monitoring



NJDEP-BFBM Staff



US EPA Staff



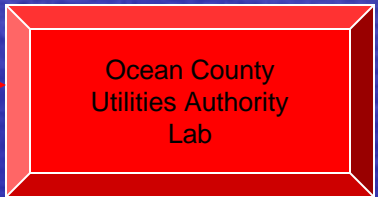
US EPA Edison Lab



NJ Forest Research & Education Center



NJDEP-BMWM Staff



Ocean County Utilities Authority Lab

- Partners:**
- NJDEP Bureau of Freshwater & Biological Monitoring
  - NJ Pinelands Commission
  - OCVTS MATES
  - Ocean County Health Department
  - Brick Twp MUA
  - Barneгат Bay Partnership



Tributary Monitoring



NJDEP Bureau of Marine Water Monitoring Lab

- █ Saltwater Carbon
- █ Freshwater Carbon, Silica, Alkalinity
- █ BOD, CBOD
- █ Nutrients, TSS, Chlorophyll a
- █ Turbidity



# Problems?

- Filtration – FREC and DEP mobile lab
- Water main break outside Ocean CC - Rutgers Extension Service room
- Carbon measurement in salt water
- Chain of custody changes
- Weather!
  - Hurricane Irene/ Tropical Storm Lee





# Accomplishments for Phase 1

- Grab water quality sampling
  - 11 sampling events completed to date
  - 1 more event scheduled to complete phase 1
  - Next event scheduled for 12/8/2011
- Macroinvertebrate monitoring has been added to tributaries
  - 11 of 13 monitoring locations



# Accomplishments (con't)

- Flow monitoring
  - All 3 new tributary gauge stations built and running
    - Toms River
      - Continuous water quality installed
      - nitrate probe in progress
    - Inlet gauges installed
      - Barnegat Inlet
      - Point Pleasant Canal



# Accomplishments to Date

- 11 Sampling Events
- 297 Samples taken
- 1272 bottles dropped off at FREC or Leeds
- 2857 Field measurements taken
- 3351 bottles filtered and unfiltered sent to 4 laboratories
- *Data/Results/Access – BB Technical Session, 2pm*



# Outreach Efforts

- **Press Event – July 20**
- NJ WILD Outdoor Expo – Sept 17/18
- Fall Forestry Festival – October 1
- **Barnegat Bay Blitz - October 19**
- Bathymetry Event – November 2



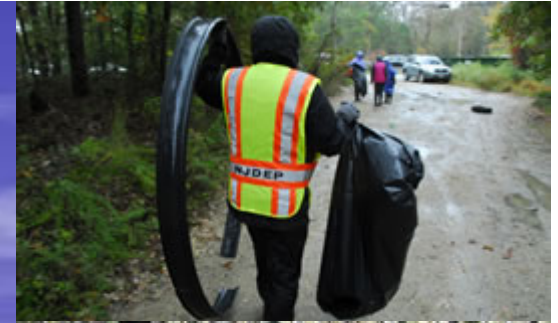
# Press Event – July 20

- Lighthouse Camp, Waretown
- Showcased monitoring project & partners
- Commissioner Martin participated
- Reporters from local papers & radio stations



# Barnegat Bay Blitz – October 19

- Watershed-wide cleanup (37 municipalities)
- 2400 volunteers
- 739 bags of trash & 578 bags of recyclables collected (inc. hub caps, hot tub, computer components, bikes, TVs & small dinghy)
- 3 30-yard dumpsters & 3 dump trucks filled



# Going Forward

- Gage installation target completion: spring 2012
- Bathymetry: boat work 10/11-6/12; flyover winter 2012
- Phase 2 Sampling: 1/12-12/12 and beyond?
- Modeling:
  - 10/11-9/12: Hydrodynamic model, preliminary water quality model and linkage code
  - 10/12-9/13: Calibration of model; operational model
  - 10/13-1/14: Sensitivity testing, model refinement
  - 2/14-8/14: Scenario development and results
- Supplemental studies under development



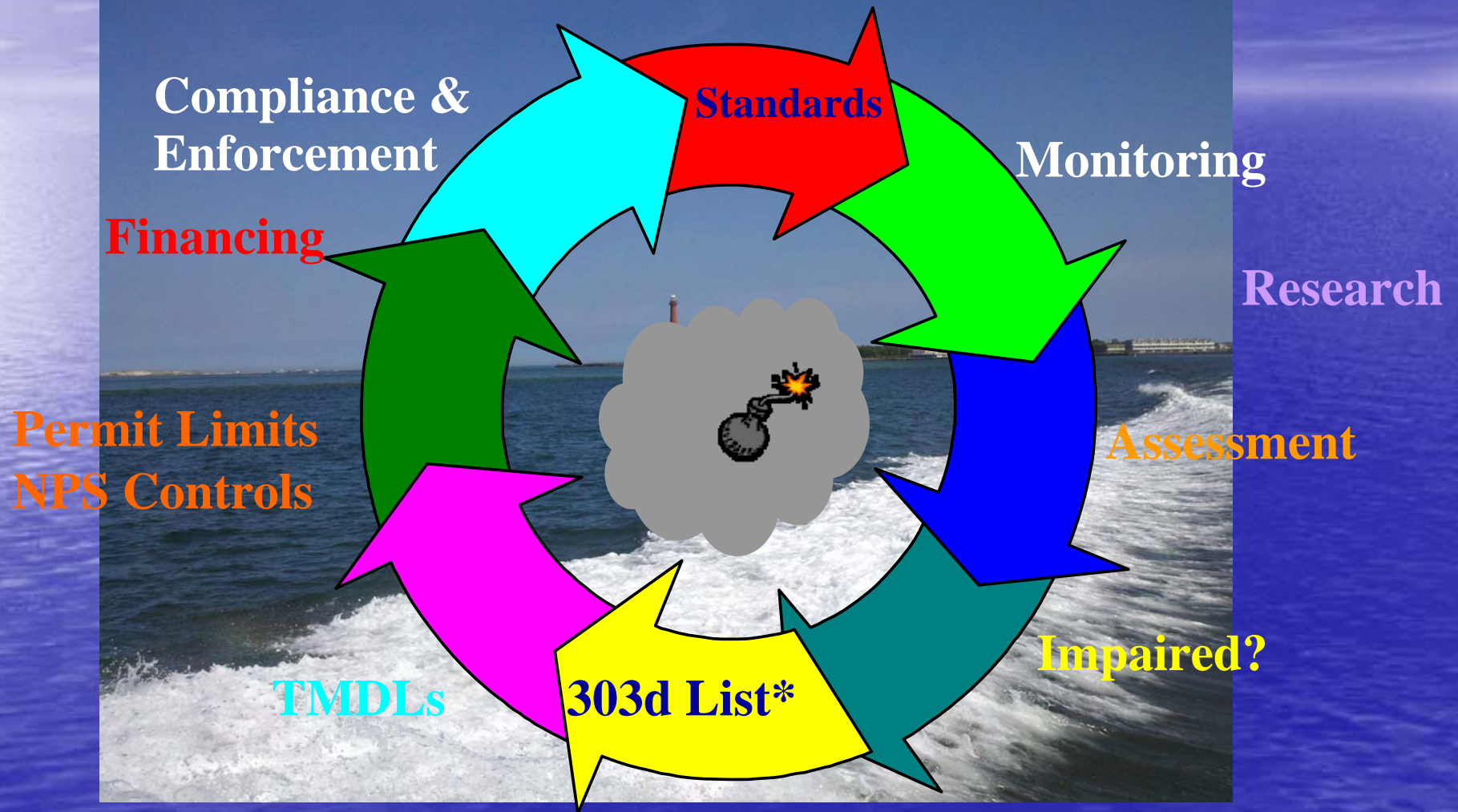
# Sampling Schedule: Phase 2

- Continuous monitoring: deploy as soon as weather permits
- Synoptic Grab Samples
  - 1/12 through 3/12      2/month (with snow dates)
  - 4/12 through 9/12      4/month
  - 10/12 through 12/12    2/month
- Intensive Surveys: 2 @ 4 days each, different lunar cycles
  - July 2012: planned week and back up week
  - August 2012 planned week and back up week





# Water Resource Management



\* Integrated Water Quality Monitoring & Assessment Report - Sublist 5



# Comprehensive regional environmental management

- Partnerships
- Monitoring with the modeling in mind
- Quality Assurance built in from the outset
- Education and outreach as an integral component – not an afterthought
- Out with sequential – in with synoptic
- Blitz – clean-up, enforcement, monitoring



# Thank You !!!



# Other Accomplishments

- Marine Academy of Technology & Environmental Sciences (MATES) Student-led project:
  - Human Signatures in Stormwater Runoff along the Toms River using Optical Brightners
  - *Technical Presentation & Poster – Dec 2*
- 10 Research Projects funded to address key information gaps
  - *BB Technical Session, 2pm*



# Barnegat Bay Website

[www.state.nj.us/dep/barnegatbay/plan-wqstandards.htm](http://www.state.nj.us/dep/barnegatbay/plan-wqstandards.htm)

## Afternoon Technical Session Features:

- Results to Date
- How to Access the Data
- Research Overview (Action Item #9)

