

# Interstate Environmental Commission

*A Tri-State Water and Air Pollution Control Agency*

## IEC's MICROBIOLOGICAL MONITORING ACTIVITIES



NJ Water Monitoring Council Meeting

January 31, 2007

Presented by: Boris Rukovets, Asst. Executive Director

# DISCUSSION ITEMS

- Role of IEC



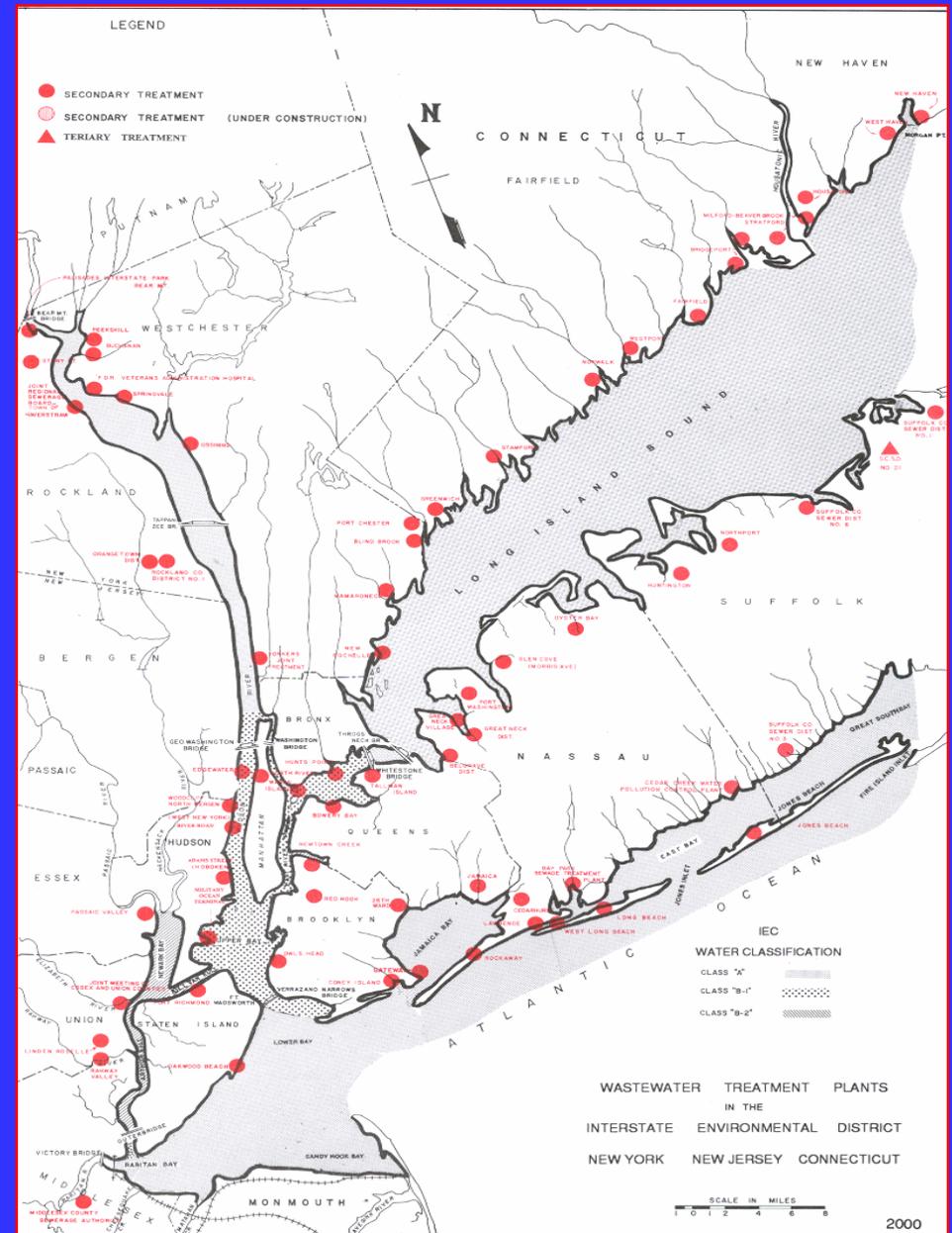
- IEC Water Quality Monitoring Program

- Recent Microbiological Monitoring Projects



# IEC's DISTRICT

- ❑ 3 States – NY, NJ, CT
- ❑ Created in 1936
  - First Interstate Env'l Agency
- ❑ >13 million people; ~ 800 mi<sup>2</sup>
- ❑ 80 WPCPs; 2.5 BGD
- ❑ ~650 CSOs
- ❑ EPA Regions 1 and 2
- ❑ 2 NEPs – LISS and NY/NJ HEP



# IEC's KEY FUNCTIONAL AREAS

- Use enforcement and regulatory powers on both interstate and intrastate basis
- Provide technical assistance and support to IEC's Member States, US EPA and others
- Enhance public and legislative awareness, and disseminate information
- Coordinate interstate and region-wide programs
- Ambient and point source monitoring
- Emergency response



# IEC's WATER QUALITY MONITORING PROGRAM

- Effluent Monitoring - NPDES Compliance:
  - Public and private sewage treatment plants
  - Industries
  - CSOs and MS4s
- Ambient Monitoring:
  - Water Quality surveys in support of NEP Programs
  - Sampling of Shellfish Waters for ISSP Compliance
  - Emergency Response Surveys
    - Impact of POTW bypasses on shellfish beds (NYC Blackout)
- Special Projects:
  - Investigation of point and non-point sources of pollution in bi-state waterways
  - Bacterial contamination crackdown (Great Kills)



# IEC's EFFLUENT MONITORING NETWORK

- *80 secondary WPCPs*
- *Check Compliance w. NPDES and IEC Water Quality Regulations*
- *Parameters:*
  - BOD
  - TSS
  - Fecal
  - Coliform
  - pH



# Sampling of Shellfish Harvesting Waters of Western Raritan Bay

- *1995-2007 winter/spring seasons*
- *Sanitary conditions of shellfish beds – US FDA NSSP*
- *PPA NJ DEP/US EPA*
- *22 stations, wet weather only*
- *Parameters: Temp., Fecal & Total Coliform*



# PATHOGENS MONITORING FOR NY-NJ HEP

## □ BACKGROUND:

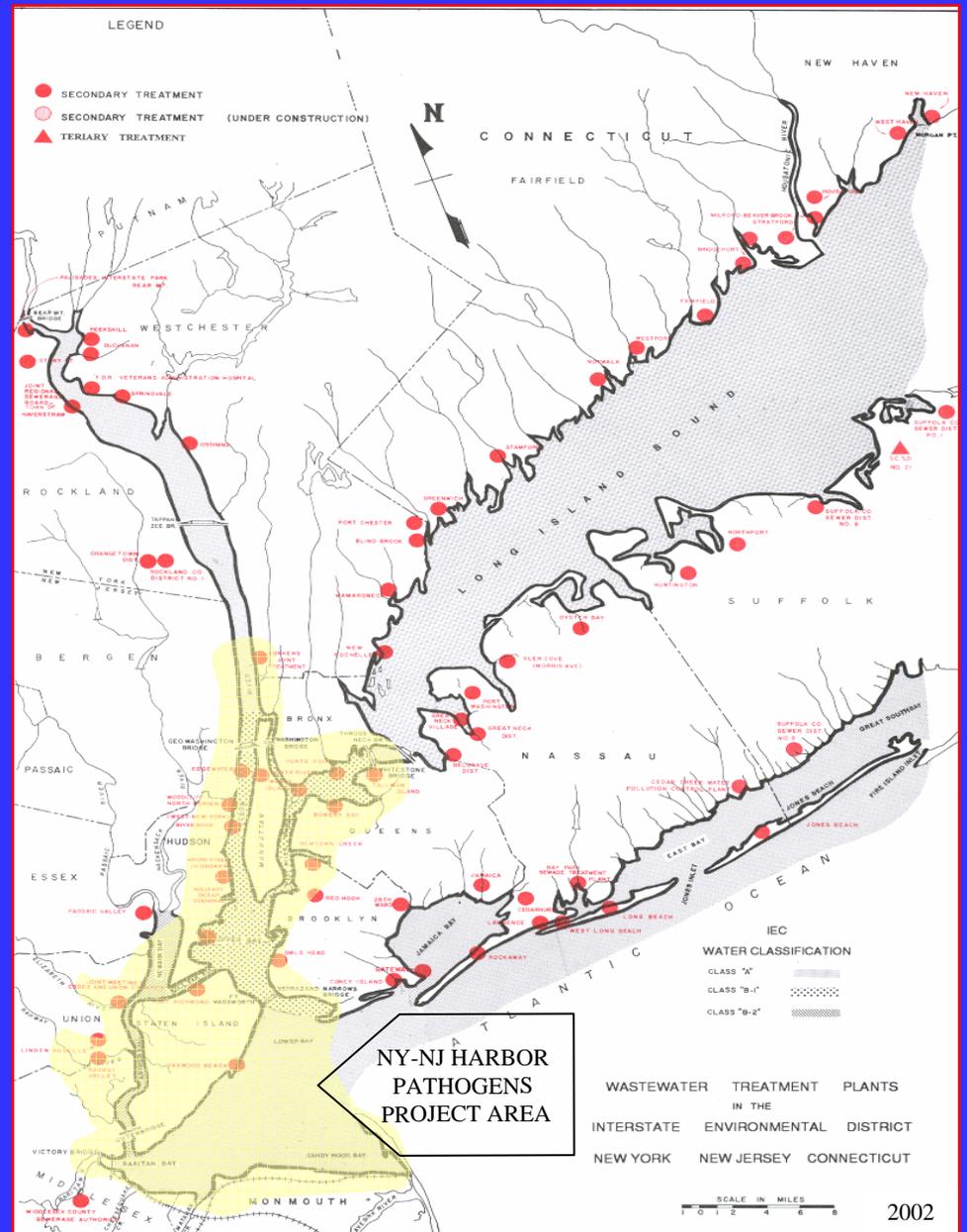
- EPA 1986 Bacteria Criteria
- Passage of BEACH Act in 2000
- Support of TMDL development for fecal coliform and enterococcus for NY-NJ Harbor
- Regional Water Quality Model

## □ SCOPE:

- 60 ambient monitoring stations
- WPCP effluents

## □ KEY PARAMETERS:

- Enterococcus
- Fecal and Total Coliform



# PATHOGENS MONITORING FOR NY-NJ HEP (Cont.)

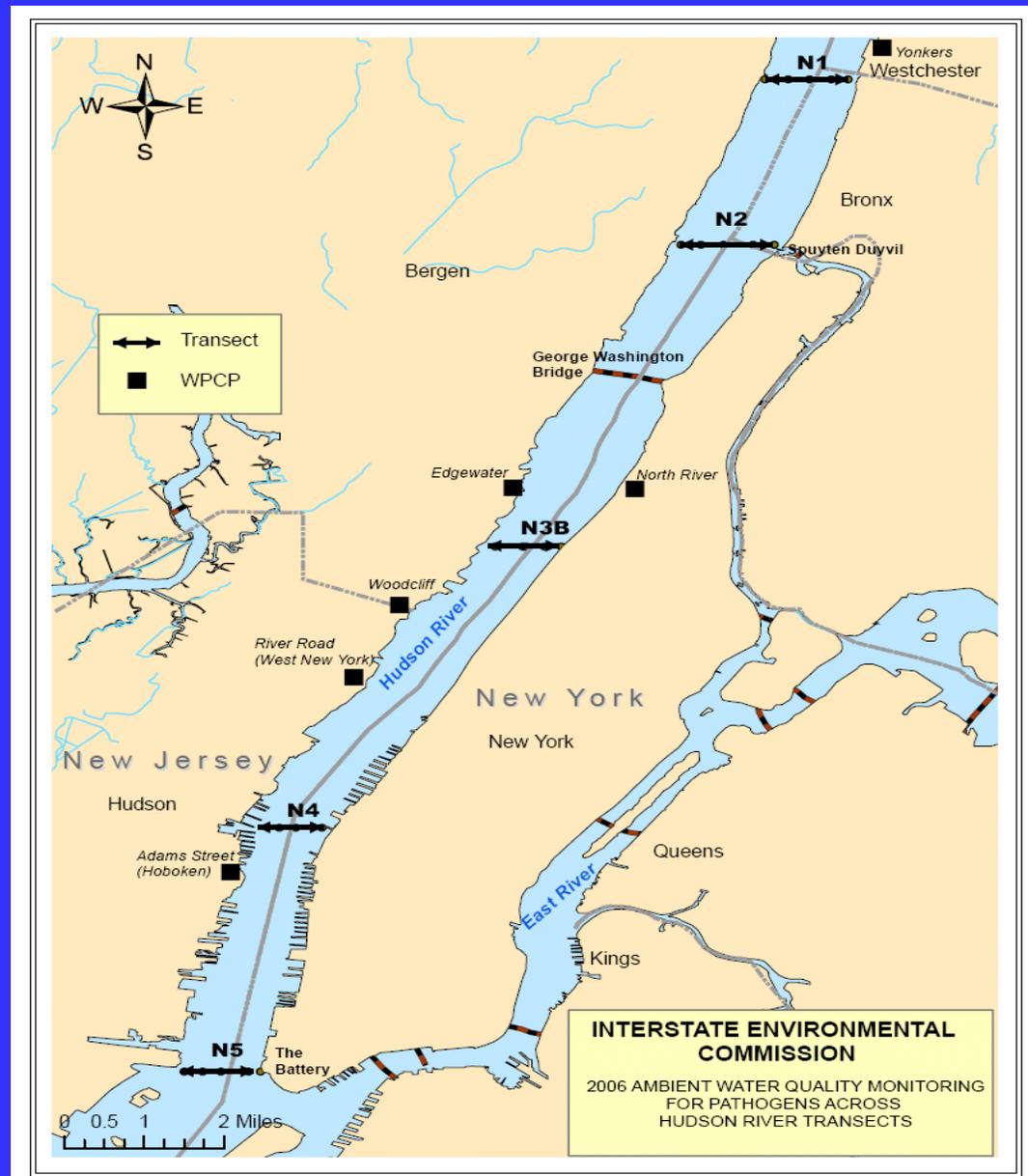
## ☐ IEC's WORK (2001-2004):

- Year 1 and 2:
  - 20 sampling runs (21% wet weather; year round)
  - 42 stations in NY/NJ Harbor (Hudson River, East River, Raritan Bay and the Kills)
- Year 3:
  - 14 additional wet weather runs at 46 stations in NY/NJ Harbor, year-round
  - 6 additional wet weather runs at 15 stations in Newark Bay Complex
- Year 4:
  - Sampling of POTW and MS4 inputs to the NY-NJ Harbor (jointly w. NYC DEP and NJ Harbor Dischargers Group)



# HUDSON RIVER TRANSECTS MONITORING (2005-06)

- ❑ Objective: Compare pathogens east and west of mid-river to those at mid-river
- ❑ 25 Stations
  - 5 transects x 5 stations
- ❑ 4 Wet weather events
  - 2 consecutive days each
- ❑ Collaboratively w. NJDEP
- ❑ Parameters:
  - Fecal Coliform
  - Total Coliform
  - Enterococcus



# HUDSON RIVER TRANSECTS MONITORING (Cont.)

- **ANALYSES**

- Geometric Means Comparison
- Individual Results Comparison
- Analysis of Means (t-test) and Variances (F-test)

- **CONCLUSION**

- Geometric means (but not individual values) of mid-river points provide an appropriate representation of water quality in the Hudson River



# BYRAM RIVER PATHOGENS TRACKDOWN

❑ Multi-agency effort (2003-06)

❑ Workplan:

- Identification of dry weather overflows/shoreline survey
- Analyses of sources
- Trackdown

❑ Parameters:

- Fecal Coliform
- Total Coliform
- Enterococcus

❑ Identified and eliminated multiple illegal connections



## FUTURE PROJECTS

- Mid-Hudson River Pathogens Monitoring (2007-2008)
- Impact of Summer Temperatures on Elevated Level of Enterococci at Silver Sands Park Beach in LIS Area (2007)



# Questions?

