

# NY/NJ Harbor Wide Survey – An Area Wide Cooperative Effort

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**Passaic Valley  
Sewerage Commissioners**

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# Who is PVSC?



- PVSC is the fifth largest wastewater treatment plant in the U.S., designed to treat 330 mgd of wastewater
- PVSC treats the wastewater of 1.3 million New Jersey residents and over 300 industries
- PVSC was created in 1902 by the state legislature to abate pollution in the Passaic River

# Who is the New Jersey Harbor Dischargers Group?

- 10 Sewerage Agencies, consisting of 12 Treatment Plants discharging to the New York/New Jersey Harbor Estuary, treating 614 mgd of Wastewater
  - Bergen County Utilities Authority
  - Edgewater Utilities Authority
  - Joint Meeting of Essex and Union Counties
  - Linden Roselle Sewerage Authority
  - Middlesex County Utilities Authority
  - North Bergen Utilities Authority
  - North Hudson Sewerage Authority
  - Passaic Valley Sewerage Authority
  - Rahway Valley Sewerage Authority
  - Secaucus Municipal Utilities Authority

*New Jersey Harbor  
Dischargers Group*



# Regional Expanse



# Primary Goals

- Provide information on current water quality relative to SWQS
- Document seasonal changes
- Compare importance of pollution from upstream vs. POTW discharges and CSOs
- Document improvements resulting from implementation of pollution control programs
- Validate water quality model results

# Why we do it?

- To prevent inaccurate modeling estimates which could ultimately lead to inappropriate regulatory decisions
- To collectively utilize our scarce resources to best meet water quality objectives

# Parameters

- Dissolved Oxygen (DO)
- pH
- Total Suspended Solids (TSS)
- Fecal Coliform Bacteria
- Enterococcus Bacteria
- Secchi Depth
- Salinity
- Temperature
- Dissolved Organic Carbon (DOC)
- Temperature
- Total Kjeldahl Nitrogen (TKN)
- Ammonia (NH<sub>3</sub>)
- Nitrite + Nitrate (NO<sub>2</sub>+NO<sub>3</sub>)
- Total Phosphorus (TP)
- Orthophosphorus (OP)
- CBOD<sub>5</sub>
- Chlorophyll-a

# Sampling Fleet



Mobile Laboratory



Research Vessel

# Sampling Procedure

- Grab samples collected at each location



# Sampling Procedure

- DO, pH, Temp, Salinity, Secchi measured in-situ
- All other samples are cooled to 4°C and transported to lab for analysis



# Frequency (33 sites)

- Summer
  - May – September
  - Weekly
- Winter
  - October – April
  - Twice monthly
  - Weather Permitting

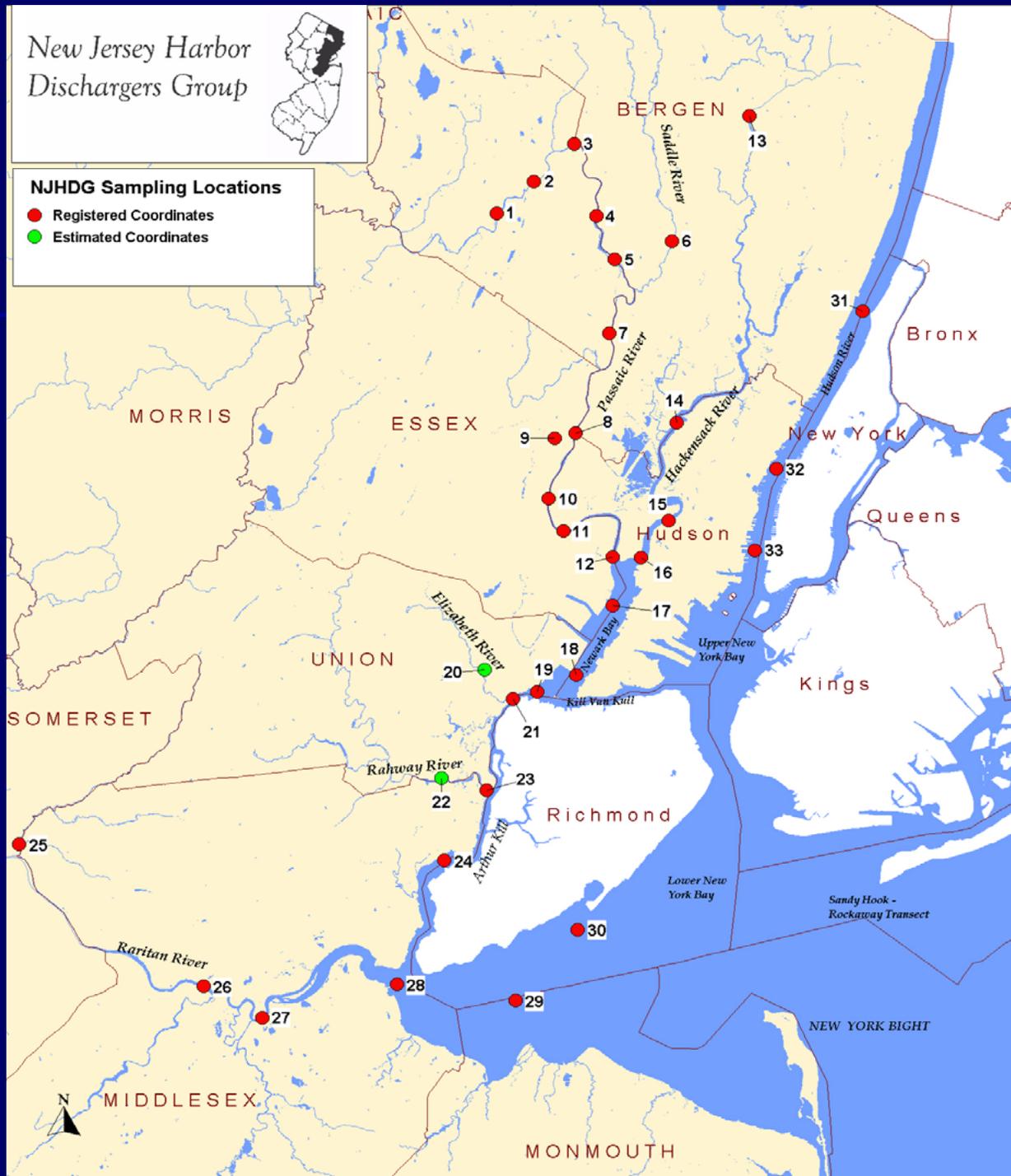


# New Jersey Harbor Dischargers Group



## NJHDG Sampling Locations

- Registered Coordinates
- Estimated Coordinates

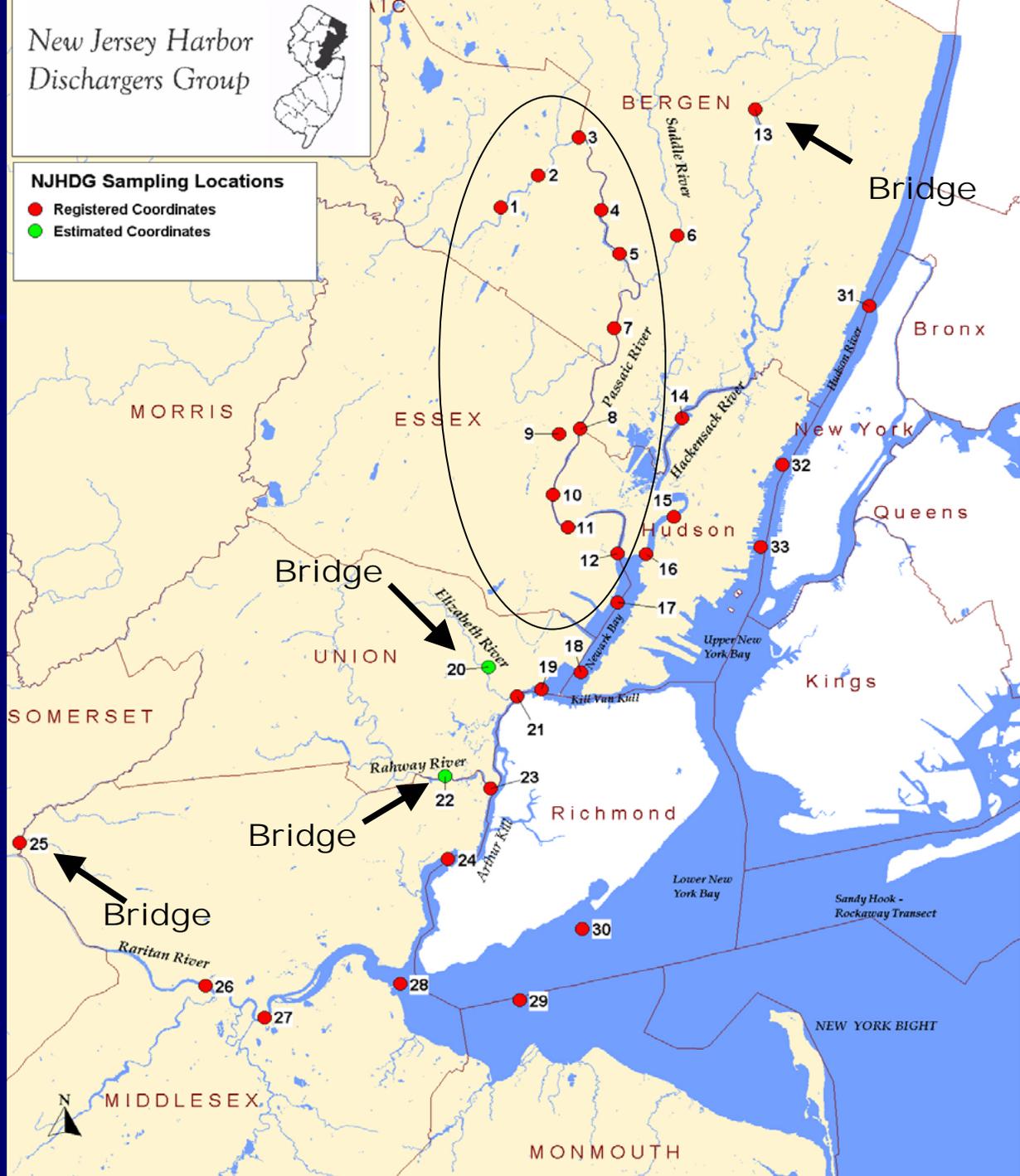


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# Frequency

- Each site is sampled for each parameter
- Shallow sites are sampled mid-depth at mid-river
- Remaining deep water sites are sampled at 1m below surface and 1m above substrate
  - ✓ Depth > 15 feet

# Locations



# Cooperation (Lab)

- Passaic Valley Sewerage Commissioners
  - TSS, TKN, Fecal Coliform, Enterococcus
- Middlesex County Utilities Authority
  - Ammonia, Nitrite, Nitrate, TP
- Bergen County Utilities Authority
  - BOD, OrthoP, DOC



# Cooperation (Field)

- Linden Roselle Sewerage Authority
- Rahway Valley Sewerage Authority
- North Hudson Sewerage Authority
- Secaucus Municipal Utilities Authority
- Joint Meeting of Essex and Union Counties
- Edgewater Municipal Utilities Authority



# Cooperation (External)

- Environmental Protection Agency (USEPA)
  - Financial
- New Jersey Department of Environmental Protection (NJDEP)
  - Technical Review
- New York City Department of Environmental Protection (NYCDEP)
  - Technical and Logistical
- Interstate Environmental Commission (IEC)
  - Logistical

# Data

- Database Management
  - GLEC (federal grant)
  - Multiple lab formats
- Evaluation
- Summary/Publication
  - NJHDG and NYCDEP joint publication
  - NJHDG publication
  - Web site

# Logistics

- Security/Background Checks
  - USCG Department of Homeland Security
    - security verification
- Sample transport
  - Various parameters to Newark, Little Ferry and Sayerville
- Weather!

# Logistics



- Sampling of tributaries and Head of Tide sites
  - Site 20: Elizabeth River (JMEUC)
  - Site 22: Rahway River (RVSA)
  - Site 25: Raritan Head of Tide (MCUA)

# Questions...



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