

Development and Application of a Regional Model of NY/NJ Harbor For the Protection of Beaches and Shellfish Areas

Charles Dujardin
HydroQual, Inc.

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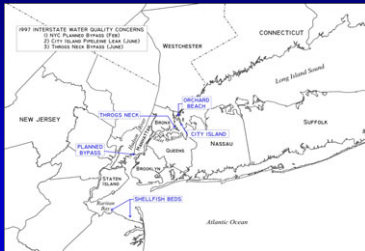
Regional Model Development Overview

- **Planned and Unplanned Sewage Discharges Causes Regional Concern**
- **Lack of Tri-State Communication is Evident**
- **Lack of Predictive Tool is Evident**
- **Regional Bypass Workgroup is Formed**
Establish Communication Protocol
Develop Predictive Tool to Assess Conditions

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Regional Events of Concern

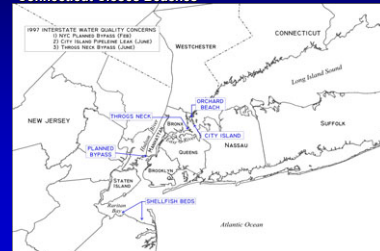
- **Planned Bypass at Manhattan Pumping Station**
Scheduled for four days @ 150 MGD
"Hearings" go on for months



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Regional Events of Concern

- **Pipeline Leak and Pump Station Bypass near City Island**
Precautionary Closures at Orchard Beach
Westchester County Closes Beaches
Connecticut Closes Beaches



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Communication Begins

- **July '97 meeting in Tarrytown NY**
Attendees (~30) include Tri-state Regulators and Dischargers
- **Regional Bypass Workgroup Established**
Communication & Notification
Development of Predictive Tool

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Regional Bypass Workgroup Participants

- **Wastewater Administration**
NYS DEC
NJ DEP
CT DEP
IEC
EPA
NYC DEP
USCG
- **Shellfish & Health**
NYS DEC
NYS DOH
NJ DEP
FDA
NYC DOH
Nassau Co HD
Westchester Co HD
Rockland Co HD
Suffolk Co HD
NPS
- **Consultant**
HydroQual, Inc.

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Model Development Considerations

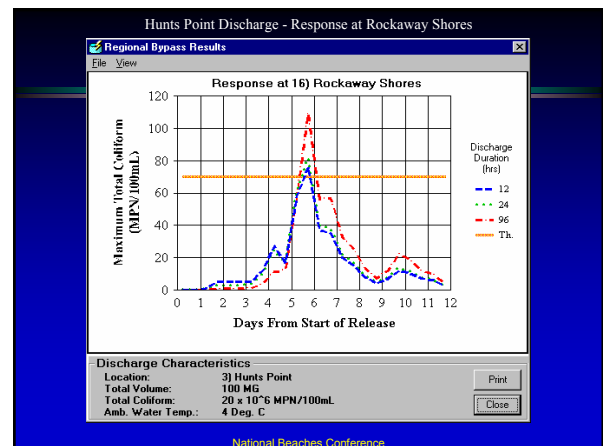
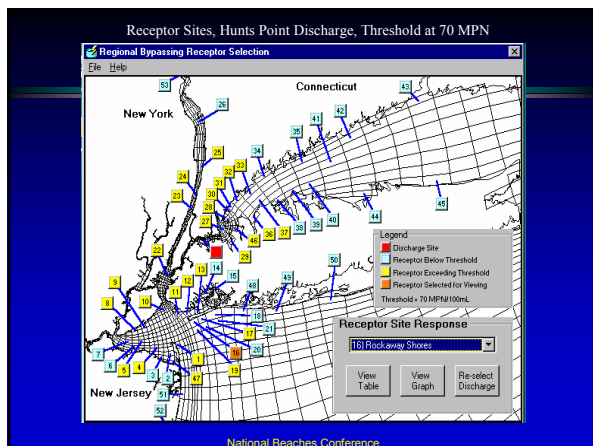
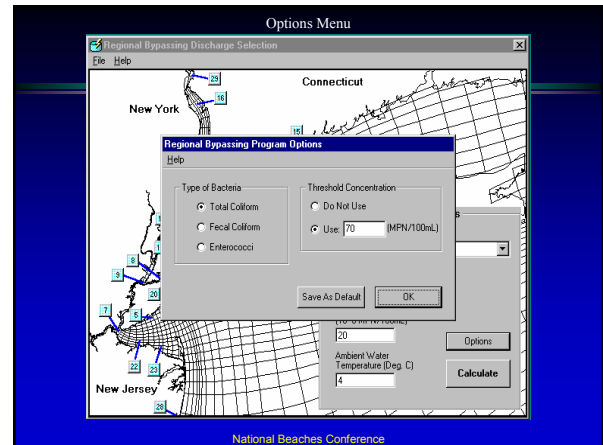
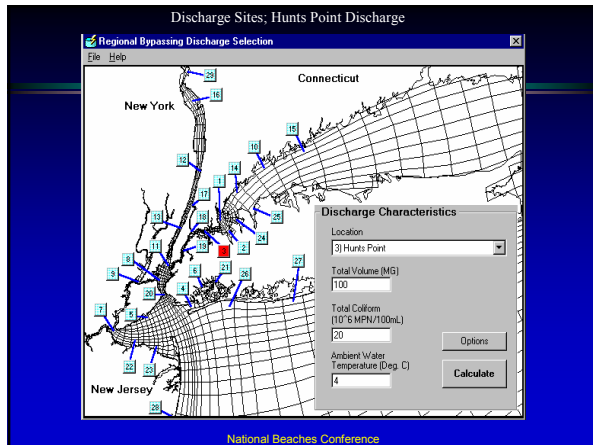
- **Parameters of Concern**
Total/Fecal Coliform
Enterococci
- **Water-bodies Considered**
NY-NJ Harbor
Long Island Sound
Atlantic Ocean (NJ Coast)
- **Input Variables**
Spill or Bypass Location
Duration, Quantity & Quality of Discharge
Temperature

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Regional Bypass Program

- **Discharge Characterization Specifications**
Select Discharge Location
Volume (MG)
Concentration
Water Temperature
- **View Results**
Select Receptor Site Location
Beach or Shellfish Location
View Temporal Profile

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Model Application and Results

- **The Program Has Been Used Successfully Since 1998**
Applied To Over 90 Spill Events per Year
No Unnecessary Beach Closures
- **Helped Inter-agency Communications and Notifications**
Excellent Inter-agency, Inter-state Co-operation
Periodic Regional Bypass Workgroup Meetings
Held at IEC
Discuss Yearly Findings
Discuss Possible Improvements – Communications/Model Upgrades

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Planned Model Improvements

- **Multiple Discharges**
- **Unlimited Discharge and Viewing Locations**
- **Better Hydrodynamic Representation**
- **Animation Capabilities**

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Future Considerations Develop Bacteria Forecast Model

- **Daily Bacteria Indicator Forecasting**
Include All Sources
- **Use Landside Simulator**
Based on Rainfall Conditions and Forecasts
Develop Stormwater/CSO Discharges
- **Real – Time Hydrodynamic Representation**
- **Available to Public**
View Predictions at Beaches
- **Technology Available for Development**

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