

Decentralized Wastewater Management Plan for the Town of Nags Head

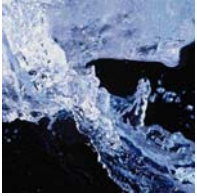


Bruce Bortz, Mary Clark, and Bob Muller

NCSU 21st Annual On-Site Wastewater Treatment Conference

October 26, 2005

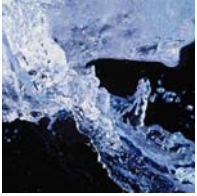




Background: Nags Head, NC



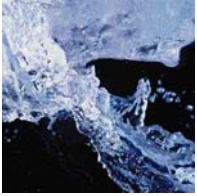
- Outer Banks barrier island
- 12 miles of beach
- Mostly residential, commercial with seasonal rentals
- 85% on onsite systems



Background: Septic Health Initiative



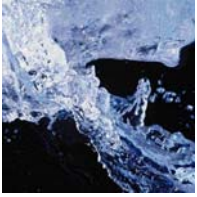
- Education & Outreach
- Septic Tank Inspection & Pumpout Program
- Water Quality Monitoring
- Decentralized Wastewater Management Plan (DWMP)



Background: Education & Outreach



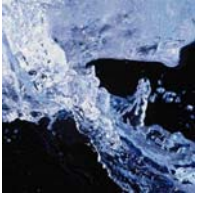
- Formation of local committee
- Survey questionnaires
- Workshops and school involvement
- Web updates and mailings
- Handouts, signage



Background: Water Quality Monitoring



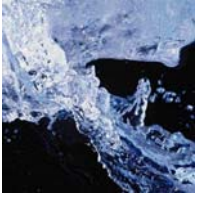
- Installed series of groundwater monitoring wells
- Surface water points
- Approximate weekly sampling
- Sampled for phosphorus, nitrogen, bacteria, and other characteristics



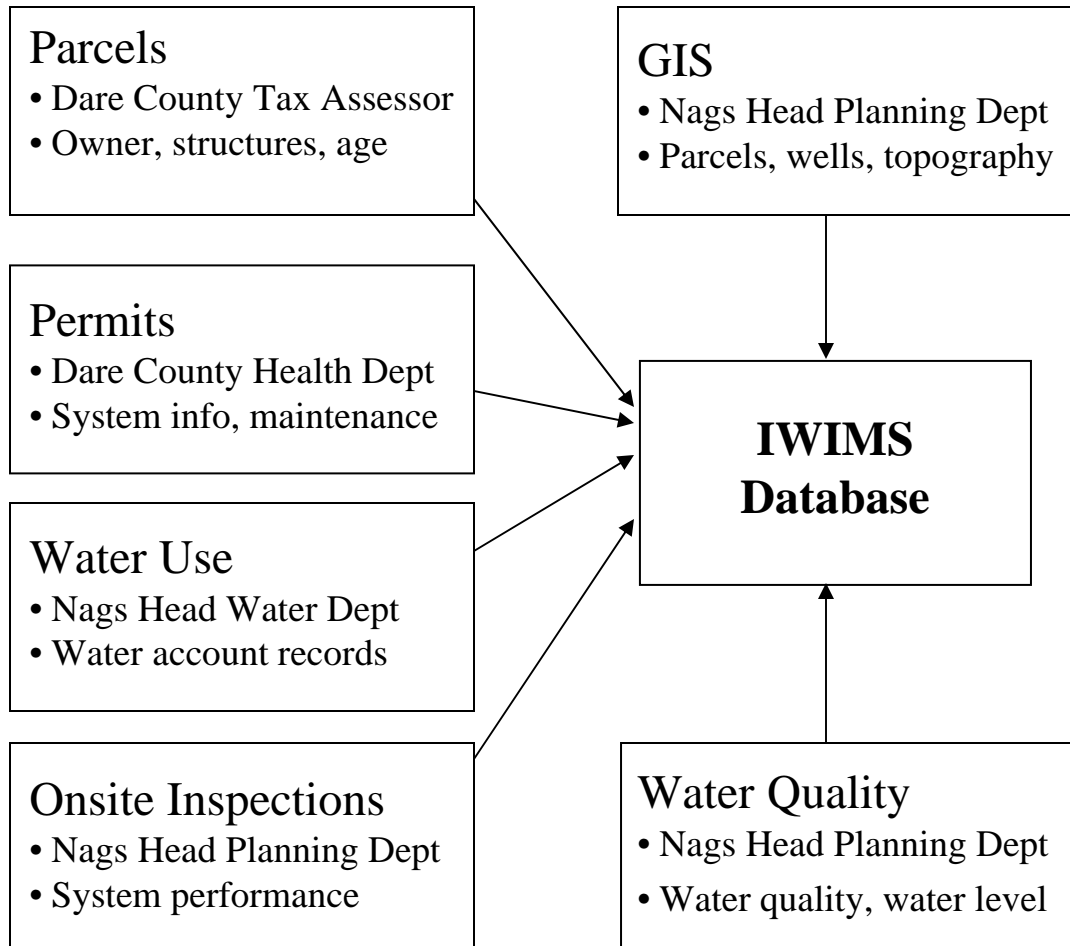
Background: Septic Tank Program



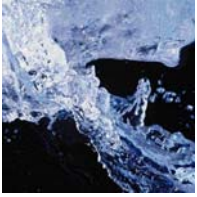
- Special price for pumpout
- Rebate on water bill
- Pumpers trained to do limited inspection
- Reports to town
- Town coordinator administers program, provides oversight



Technical Report



- Database Development
 - Septic permits & inspections
 - Water quality
 - Assessor & water use
- GIS-based analyses
- Presentations to Board
- Related results to management options

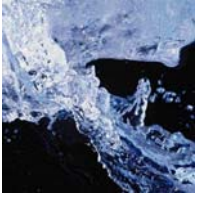


Management Plan Elements



Voluntary Participation, Incentive-Based Plan

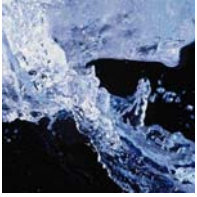
- Septic System Inspection & Tank Pumping Program
- Permit & Water Use Data Tracking and Reporting
- Water Quality Monitoring Program
- Overall Education and Outreach



Septic System Inspection and Pumping Program



- Septic system inspectors
 - Use trained certified inspectors
 - Inspectors can't have conflict of interest
- Inspection Process
 - Detailed first inspection of all system components
 - Encourage ongoing inspections



Septic System Inspection and Pumping Program



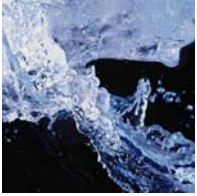
Incentive-Based Upgrades

■ Repairs/Upgrades

- Target older systems
- Areas of shallow groundwater
- Areas close to water

■ Loans/Grants

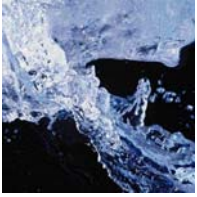
- Increase current loan limit
- Grants for sand bottom tank buyouts
- Leverage local funds with state/federal grants, loans



Permit and Water Use Data Tracking



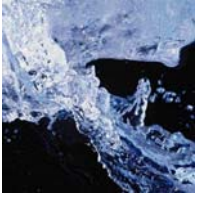
- Increased data collection and reporting efforts, database development
- Monitor Health Department permits and conditions for O&M activities
- Track water use in relation to permit design flows



Water Quality Monitoring Program



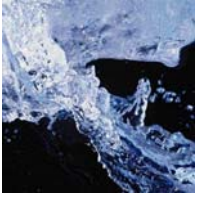
- Realign some groundwater monitoring wells to be downgradient of drainfields
- Develop quality control /assurance procedures
- Add testing for Enterococcus to match beach advisories
- Add background surface monitoring points
- Collect water meter readings during sampling events



Overall Education and Outreach



- Campaign on new inspection and grant efforts
- Target older neighborhoods, substandard systems for first inspection
- Target areas of shallow seasonal groundwater
- Work with real estate industry on water conservation
- Plumbing fixture upgrades
- Expand website materials and references



Adopted Plan Approved July 2005

