



Town of

Orleans
Massachusetts

Orleans Water Quality Advisory Panel Stakeholder Workshop

Non-Traditional Technologies Breakout Groups

January 20, 2016

AECOM

Non-Traditional Technologies Demonstration Project Task Progress

Technology

- ❖ Aquaculture/Shellfish Propagation
- ❖ Floating Constructed Wetlands
- ❖ Permeable Reactive Barriers

Tasks

- ❖ Identify Possible Sites
- ❖ Conduct Preliminary Field Survey
- ❖ Assemble Base Data
- ❖ Establish Criteria For Site Evaluations
- ❖ Evaluate and Select Site(s)
- ❖ Prepare for/Conduct for PRB Field Investigations



Non-Traditional Technologies Demonstration Project Task Progress (cont.)

❖ Breakout Groups

- Aquaculture/Shellfish Propagation: Nauset Room
- Floating Constructed Wetlands: Tonset Room
- Permeable Reactive Barriers: Namequoit Room

❖ Agenda for Each Breakout will Include

- Technology Overview
- Review Siting Criteria
- Review Potential Sites
- Review Application of Site Criteria
- Identify Recommended Sites
- Next Steps





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Non-Traditional Technologies Breakout Groups

Aquaculture/Shellfish Propagation
Nauset Room

Floating Constructed Wetlands
Tonset Room

Permeable Reactive Barriers
Namequoit Room

Aquaculture/Shellfish Propagation Demo and Full Scale Siting Evaluation Criteria

❖ Site Suitability

- Available Growing Area/Adequacy of Acreage
- Water Quality Indicators
- Disease/Predation
- Ease of Access
- Aesthetic Impacts
- Representativeness of the Site (Transferability)
- Use Conflicts
- Ability to Co-Locate with other Non-Traditional Technologies

❖ Permitting

- Abutter Compatibility
- Wild Harvest Conflicts
- Grow-Out to Harvest Size
- Permittability

❖ Project Evaluation

- Expected Survival
- Overall Likelihood of Monitoring Plan to Yield Quantified Results

❖ Other/Overriding Considerations



Aquaculture/Shellfish Propagation Locations Evaluated

- ❖ Little Pleasant Bay (Existing Aquaculture Grants, Oysters and Quahogs)
- ❖ Quanset Pond (Oyster Reef)
- ❖ Pochet (Oyster Reef)
- ❖ Arey's Pond (Oyster Singles in Floating Bags)
- ❖ Town Cove (Quahog Propagation)
- ❖ Mill Pond (Quahog Propagation)
- ❖ Lower River (Oyster Singles in Floating Bags)



FCW Demo and Full Scale Siting Evaluation Criteria

- ❖ Use Conflicts
- ❖ Utility/Infrastructure Conflicts
- ❖ Utility/Infrastructure Benefits
- ❖ Ease of Access
- ❖ Transferable Results
- ❖ Land Ownership
- ❖ Depth of Surface Water
- ❖ Overall Likelihood of Monitoring Plan to Yield Quantified Results



FCW Locations Evaluated

- ❖ Lonnie's Pond
- ❖ Namequoit River
- ❖ Paw Wah Pond
- ❖ Pochet Neck
- ❖ Quanset Pond



PRB Demo and Full Scale Siting Evaluation Criteria

❖ Site Suitability

- Depth to Groundwater
- Groundwater Nitrogen Profile (concentration/depth)
- Groundwater Flow Direction and Velocity

❖ Permitting

- Potential Regulatory Concerns
- Site Use

❖ Project Evaluation

- PRB Nitrogen Removal Efficiency
- Accessible Well Locations

❖ Other/Overriding Considerations

- Potential for Watershed/Estuary Impacts
- Potential for Full Scale Implementation



PRB Locations Evaluated

- A. Main Street and Tonset Road (Main Street)
- B. South Orleans Road at Tonset/Eldredge Parkway (Route 28 site)
- C. Town Cove Gibson Road
- D. Namequoit Road
- E. Town Landfill
- F. Paw Wah Pond
- G. Rock Harbor Road Area
- H. Kescayo Gansett Pond (Lonnie's Pond)

