208 Area Wide Water Quality Management Plan Update
Mid Cape Sub Regional Group

Meeting One
March 4, 2014 8:30 am – 12:30 pm
Cape Cod Commission, 3225 Main Street, Barnstable

Meeting Goals:
• Identify regulatory, legal, and institutional challenges, constraints, and opportunities associated with the 208 Plan approach for water quality
• Clarify the definition and components of an adaptive management plan that can be permitted

8:30  Welcome & Review of 208 Goals
8:40  Process Overview, Meeting Overview and Goals, & Introductions
9:00  Scenario Planning
  • Use maps of technologies/approaches in one representative watershed to illuminate RLI and implementation discussions.
9:30  Regulatory, Legal, and Institutional Interactions
  • Presentation of existing permitting framework
  • What are some of the hurdles and opportunities associated with permitting the above scenario?
10:45 Break
11:00 Implementation
  • Presentation and discussion of adaptive management definition and graphic
  • What components of an adaptive management plan are needed to achieve permitability and water quality goals?
12:15 Public Comment
12:30 Adjourn
Mid Cape Sub Regional Group

Meeting 1
Approach to the 208 Plan Update

Watershed Based

Stakeholder Engagement

Maximize Benefits of Local Planning

No Optimal Solutions

Goal:
To generate a series of approaches in each watershed that will meet water quality standards
Subgroup Boundaries
208 Water Quality Management Plan Update

**Lower Cape**
- Herring River
- Pleasant Bay
- Stage Harbor Group
- Nauset and Cape Cod Bay Marsh Group

**Mid Cape**
- Cape Cod Bay Group
- Lewis Bay to Bass River
- Three Bays & Centerville River

**Outer Cape**
- Provincetown Harbor
- Wellfleet Harbor & Pamet River

**Upper Cape**
- Waquoit Bay & Popponesset Bay
- Upper Cape West & South
Area Boundaries
208 Water Quality Management Plan Update

Lower Cape
Mid Cape
Outer Cape
Upper Cape
Public Meetings

- Goals, Work Plan & Roles
- Affordability, Financing

Watershed Working Groups

- Baseline Conditions
- Technology Options Review
- Watershed Scenarios

July  | August  | September  | October  | December
Standing Sub Regional Meeting Topics

**Mtg. 1**
- One representative watershed
- Challenges & opportunities associated with permitting the watershed scenario
- Adaptive management plans

**Mtg. 2**
- All shared watersheds & TBL model
- Tools to support intermunicipal cooperation
- Monitoring

**Mtg. 3**
- Subregional scenarios & TBL model
- Structures for permitting
- Financing & affordability
Standing Sub Regional Meeting Topics

Meeting 1 Goals:

Identify regulatory, legal, and institutional challenges, constraints, and opportunities associated with the 208 Plan approach for water quality

Clarify the definition and components of an adaptive management plan that can be permitted
Scenario Planning

Three Bays
Attenuated wastewater load contributions

Barnstable: 93%
Mashpee: 0%
Sandwich: 7%
Septic Load TMDL = 60%
Total Load TMDL = 46%
Traditional Approach

- Entire Watershed Collection & Treatment
- MEP Nitrogen Reduction Targets
- Targeted Collection/Maximum Collection Footprint
- Targeted Collection with Fertilizer and Stormwater Reduction
- Minimized Collection Footprint

Non-Traditional Approach

- MEP Nitrogen Reduction Targets
- Low Barrier to Implementation
- Watershed Embayment Options
- Alternative On-Site Options
- Minimum Collection Footprint

Fertilizer Reduction

Stormwater Reduction
1. Identify Current N Removal Needs (Targets/Reduction Goals)
   - Present Load: X kg/day
   - Target: Y kg/day
   - Reduction Required: N kg/day

2. Additional N Removal Needs
   - A. Title 5 Problem Areas
   - B. Pond Recharge Areas
   - C. Growth Management

3. Low Barrier Technologies
   - A. Fertilizer Management
   - B. Stormwater Mitigation

4. Watershed Alternative Technologies
   - A. Permeable Reactive Barriers
   - B. Inlet/Culvert Openings
   - C. Constructed Wetlands
   - D. Aquaculture

5. On-Site Alternative Technologies
   - A. Eco-toilets (UD & Compost)
   - B. I/A Technologies
   - C. Enhanced I/A Technologies
   - D. Shared Systems

6. Priority Collection/Sewer Areas
   - A. Greater Than 1 Dwelling Unit/acre
   - B. Village Centers
   - C. Economic Centers
   - D. Growth Incentive Zones

7. Supplemental Collection / Sewer Areas
## Technology/Approach

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<th>Technology/Approach</th>
<th>Federal</th>
<th>DEP</th>
<th>MADOT</th>
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<th>ConComm</th>
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<td></td>
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Additional permits may apply. Other agencies involved could include:
- MA Natural Heritage and Endangered Species Program
- MA Historical Commission
- US Fish & Wildlife Service/Division of Marine Fisheries
Regulatory, Legal, and Institutional Interactions

What are some of the hurdles and opportunities associated with permitting the above scenarios?
Regulatory Purposes

MEPA
CCC
DEP
Joint MEPA/CCC Review:
Projects Requiring Environmental Impact Report (EIR)

**APPLICANT** files:
- MEPA Environmental Notification Form (ENF)
- CCC DRI/Joint Review Application

within 20-day MEPA comment period:
- MEPA and CCC hold joint scoping session and public hearing.

- **APPLICANT** files Draft Environmental Impact Report (DEIR).

within 30-day MEPA comment period:
- MEPA issues certificate on ENF, scope of review.

- CCC Subcommittee meets to consider report to MEPA.

- **APPLICANT** files Final Environmental Impact Report (FEIR).

within 30-day MEPA comment period:
- MEPA issues certificate on DEIR and issues to be addressed in FEIR.

- CCC Subcommittee meets to consider DEIR report to MEPA.

within 45 days:
- CCC formally begins DRI review process.
Traditional technology permitting path

Fertilizer and stormwater reduction credit

Alternative technology permitting paths
Need for Permitting Flexibility
MEPA Certificate for Falmouth CWMP

“Adaptive management acknowledges the uncertainties in design and implementation of projects, carefully monitors outcomes, assesses progress in a transparent fashion and requires recalibration of plans and projects as necessary.”

“The FEIR represents an evolution towards the development and implementation of a Targeted Watershed Management Plan for each of the Town’s coastal watersheds and includes concrete commitments to projects...that will provide significant reductions in nitrogen loading.”

The Secretary certified the plan “to support the towns adaptive management approach to developing long-term solutions and in acknowledgement of the town and its residents concrete support for projects that will reduce nitrogen in the short-term.”

“MassDEP comments indicate that an approvable TWMP will satisfy SRF requirements necessary to secure 0% financing.”
MEPA/CCC Special Review Procedure
Regulatory, Legal, and Institutional Interactions

What are some of the hurdles and opportunities associated with permitting the above scenarios?
Implementation

What components of an adaptive management plan are needed to achieve permitability and water quality goals?
Adaptive Management

Definition

A structured approach that monitors outcomes for meeting water quality goals, assesses progress over time, and requires recalibration of plans and projects, as necessary, based on review and evaluation of monitoring.
All materials and resources for the Mid Cape Sub Regional Group will be available on the Cape Cod Commission website:

Total acreage: 12,458 acres
Total acreage: 12,458 acres

Acreage by town:

- Barnstable: 9,695 acres
- Mashpee: 85 acres
- Sandwich: 2,679 acres
Total built parcels: 6,744 parcels
Total built parcels: 6,744 parcels

Built parcels by town:

Barnstable  5,480 parcels (green)
Mashpee    4 parcels (purple)
Sandwich   1,260 parcels (orange)
Unattenuated wastewater load contributions

Barnstable: 81%
Mashpee: <1%
Sandwich: 19%
Permit likely required

Permit may be required, depending on location

**Acronyms:**

CWA – Clean Water Act
GWDP – Groundwater Discharge Permit
WMA – Water Management Act
I & A – Innovative and Alternative
WPA – Wetlands Protection Act
MEPA – Massachusetts Environmental Policy Act
MADOT – Massachusetts Department of Transportation
Acronyms:

MEPA – Massachusetts Environmental Policy Act
CCC – Cape Cod Commission
DEP – MA Department of Environmental Protection
DRI – Development of Regional Impact
EIR – Environmental Impact Report
ENF – Environmental Notification Form
DEIR – Draft Environmental Impact Report
FEIR – Final Environmental Impact Report
TWMP – Targeted Watershed Management Plan
SRF – State Revolving Fund
How do you implement adaptive management?
Cape Cod 208 Area Water Quality Planning
Mid Cape Sub Regional Group

Meeting One
March 4, 2014
8:30 am – 12:30 pm
Cape Cod Commission, Barnstable MA

Meeting Summary Prepared by the Consensus Building Institute

I. ACTION ITEMS

Working Group
• Provide feedback on the draft meeting summary drafted by the Consensus Building Institute

II. WELCOME AND OVERVIEW

Ms. Carri Hulet, the facilitator from the Consensus Building Institute, reviewed the agenda and briefly described the process for the sub-regional group meetings. She explained that the same topics—scenario planning; regulatory, legal, and institutional issues (RLI); and implementation issues—would be discussed in each of the three sub-regional group meetings. At a later point in the meeting after everyone had arrived, Ms. Hulet led introductions. Appendix A contains a list of meeting participants. Dan Milz, a PhD student from the University of Illinois, Chicago spoke to the group by speakerphone to notify participants that, although he was unable to attend, his camera was there to record the meeting, purely for his own academic use, and asked if there were any questions or concerns. Group members registered no objections to Mr. Milz’ request.

Mr. Paul Niedzwiecki, Executive Director of the Cape Cod Commission, placed the meeting in the context of the larger 208 Plan Update process. He noted that the watershed-based 208 Plan Update process is strongly rooted in stakeholder engagement and will seek to maximize the benefits of existing local wastewater planning efforts. He also emphasized that the process will not promote an optimal solution in any watershed. Instead, the goal is to identify a range of approaches using different technologies that, if implemented, will meet water quality standards. Additionally, Mr. Niedzwiecki said local level decision makers will ultimately decide which set of technologies would be most appropriate to implement in their jurisdiction to meet water quality standards.

Mr. Niedzwiecki reviewed the timeline for the 208 Plan Update process, which began with public meetings in July and August 2013 and continued with meetings of 11 watershed working groups between September to December 2013. The 11 watershed working groups reviewed baseline conditions, technology options, and discussed watershed scenarios. In the current phase of the 208 Plan Update, the 11 watershed working groups have been condensed into four ‘sub-regional’ groups to discuss scenario planning, RLI issues, and implementation issues. He also noted that, although all of the stakeholders who participated in working group
meetings at the watershed subgroup level would not be able to participate in meetings at the sub-regional level, the Cape Cod Commission is seeking to keep stakeholders involved in the process by releasing a new section of the narrative that will accompany the 208 Plan each week on the Commission’s website for public comment.

The four sub-regional groups will each meet three times and follow the same process (see Figure 1). Each sub-regional group will start the current series of three meetings with the presentation of a concrete scenario; proceed to discussion of RLI concerns; and conclude with discussion of topics related to implementation. In regards to the monitoring conversation during the next meeting, Mr. Niedzwiecki said the Cape Cod Commission is forming an ad-hoc monitoring group to draft the monitoring protocol and present it to state and federal regulators for review. The goals of the first meeting were to:
- Identify regulatory, legal, and institutional challenges, constraints, and opportunities associated with the 208 Plan approach for water quality.
- Clarify the definition and components of an adaptive management plan that can be permitted.

III. SCENARIO PLANNING
Cape Cod Commission representatives presented the Three Bays watershed as a sample scenario for the Mid Cape Sub Regional group. Barnstable, Mashpee, and Sandwich are all located within the Three Bays watershed. The nature of the challenge and opportunity to manage water quality becomes apparent when superimposing the town jurisdictions on top of the watershed boundary—each town has a different amount of land area, number of built

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Mid Cape Sub Regional Group
Meeting One 03/04/14: SUMMARY
parcels, and attenuated wastewater load contribution in the watershed. For example, the attenuated wastewater load contributions are 93% in Barnstable, 0% in Mashpee, and 7% in Sandwich. Mr. Niedzwiecki noted that the different contributions raise the question of how to assign responsibility, which is further complicated by the fact that some subwatersheds within the Three Bays watershed will require 100% removal of the nitrogen.

Mr. Niedzwiecki described the process the Cape Cod Commission used to develop the traditional and nontraditional approach scenarios. Two teams were created to review the traditional approach and the nontraditional approach. Both approaches reduced nitrogen levels through fertilizer reduction efforts and stormwater management efforts. Mr. Niedzwiecki noted that fertilizer does not contribute a large percent of total nitrogen Cape-wide, but in some subwatersheds, a reduction in the amount of fertilizer reaching groundwater could cause a significant impact and reduce the need to build water treatment infrastructure. Nutrient removal from stormwater sources, which will be required by the EPA in the future, is an opportunity to alleviate homeowners of some of the effort they will need to make to help meet water quality standards.

Traditional Approaches to Wastewater Management
Mr. Tom Cambareri, Watershed Management Director at the Cape Cod Commission and leader of the traditional approaches analysis, presented the findings of the traditional approach, which considered the use of common sewer infrastructure, treatment plants, innovative/alternative Title 5 systems, and cluster and satellite systems. He noted that each watershed, such as the Three Bays watershed, is itself made up of sub-watersheds, and that the MEP and TMDL reports prescribe nitrogen-removal targets both for the whole watershed and its subwatersheds, accounting for factors such as nitrogen load and natural attenuation rates.

Using land use data and data from the MEP TMDL reports, the Cape Cod Commission created a Watershed MVP Tool to track nitrogen loading and attenuation in the subwatersheds and build treatment scenarios. The team used this tool to create scenarios that would remove 60% of the nitrogen from the watershed. Mr. Cambareri showed two maps illustrating the different footprints of sewer infrastructure that would be required to achieve the 60% goal if different traditional treatment options were constructed. For one scenario, the researchers selected a centralized treatment option due to its high level of treatment capacity and the intent to keep treatment local in the watershed. The geographic expanse of the sewer system illustrated in the scenario one map was approximately twice as large as the expanse of the sewer system illustrated in the scenario two map. The reduced footprint size in scenario two was due to the inclusion of stormwater and fertilizer policies for nitrogen removal credits.

Non-Traditional Approaches to Wastewater Management
Scott Horsley, consultant to the Cape Cod Commission, presented the scenario from the non-traditional approach. He noted that the Commission’s examination of non-traditional approaches includes a wide variety of different technologies that would be implemented at different points in the watershed, thereby mitigating nitrogen loads over different timeframes.
Mr. Horsley reviewed the seven-step problem solving approach the Commission has developed for the non-traditional inquiry. It begins with identifying nitrogen removal needs, then tries to meet the need using various non-traditional technologies, then adds sewer infrastructure to manage residual removal of nitrogen, if necessary.

Mr. Horsley showed maps of the Three Bays watershed to illustrate possible locations for a suite of technologies such as permeable reactive barriers, constructed wetlands, fertigation wells, shellfish bed restoration or aquaculture, and ecotoilet demonstration sites that would collectively meet the 60% nitrogen removal goal. He noted that some aquaculture projects may have been developed since the MEP report was published and that these are not accounted for in the data. Mr. Horsley said the ecotoilet demonstration sites would be located at public institutions to help raise awareness of the technology.

Mr. Horsley also showed a table illustrating the different types of permitting that would be required before installing the various non-traditional technologies. He explained that the following bodies or statutes may exercise permitting authority over many non-traditional technologies, particularly with regards to projects that exceed certain threshold sizes or which are located in certain areas: the US Army Corps of Engineers, the Massachusetts Department of Environmental Protection, local Boards of Health, local Conservation Commissions, the Massachusetts Environmental Protection Act, the Massachusetts Natural Heritage and Endangered Species Program, the Massachusetts Historical Commission, US Fish & Wildlife Service/MA Division of Marine Fisheries, and the Massachusetts Department of Transportation (MassDOT). Figure 2, shown here, outlines the types of permitting that may be required for different technologies.
IV. REGULATORY, LEGAL, AND INSTITUTIONAL INTERACTIONS

Ms. Patty Daley, Deputy Director of the Cape Cod Commission, provided greater detail on the current regulatory framework that is in place for permitting different types of wastewater plans and technologies. Building on the information provided by Mr. Horsley, she explained the animating purpose behind a few types of regulatory review:

- Massachusetts Environmental Policy Act (MEPA) review is performed by the Commonwealth of Massachusetts in order to recognize the environmental impacts of different projects, especially larger ones, and to scope alternatives that may be less environmentally impactful. Following MEPA review, review under the Massachusetts Department of Environmental Protection, the Massachusetts Historical Commission, the US Fish & Wildlife Service/Division of Marine Fisheries, and other agencies may still be required.

- The Cape Cod Commission is charged with conducting a type of review called “Development of Regional Impact” (DRI) review in order to provide for environmental protection and ensure that adequate infrastructure is in place for projected growth, especially for larger projects on the Cape. The Commission and MEPA have a Joint Review Process to coordinate the Commission’s DRI review with MEPA review, however, the formal DRI review takes place after the conclusion of the MEPA review.

- The Massachusetts Department of Environmental Protection issues permits for groundwater discharge and groundwater withdrawals. The agency also administers the State Revolving Fund program to pass federal funds on to local communities for water projects. Ms. Daley noted that SRF loans often have a 2% interest rate but that...
municipalities can secure 0% financing in cases where they can demonstrate that the addition of new wastewater infrastructure will be “flow-neutral”.

Ms. Daley identified a number of factors that could be changed about the current permitting process to better accommodate non-traditional technologies and the needs of towns on the Cape in dealing with their wastewater challenges:

- Currently the Cape Cod Commission’s DRI review is oriented toward a parcel-based review and is not a town-wide or watershed-wide approach. The Commission will explore how to revise this over the next year.
- Identify how to get credit for fertilizer and stormwater reduction measures from the state permitting agencies.
- Permitting is currently done based on town boundaries because towns are the fiscal agents that are responsible for implementing plans. Most watersheds cross town boundaries, however, meaning that there is a disconnect between current permitting and implementing nitrogen mitigation measures on a watershed basis.
- Community Wastewater Management Plans (CWMPs) only include conventional technologies that are already permitted but do not incorporate the non-traditional approaches currently being explored.
- CWMPs tend to include town-wide approaches that require 30-year engineering analyses, which prove to be very (and arguably, unrealistically) costly, thereby provoking opposition at town meetings. Creating an easier pathway for permitting smaller, lower-cost technologies that enjoy widespread support would be helpful.

Ms. Daley also identified a couple of positive recent developments with regards to the permitting process for wastewater projects. Falmouth has been able to secure a MEPA certificate for two smaller projects while the larger plan is still under review. The plan itself incorporates principles of adaptive management. The Cape Cod Commission is also exploring the creation of a MEPA / CCC Special Review Procedure that would streamline the review process across all Cape towns. The Special Review Procedure could apply to projects that can commence early due to their limited scale, high level of public support, and benefit to the environment, and also for projects that need coordination between MEPA and other agency considerations, such as the 208 Plan.

The working group then identified the following regulatory, institutional and legal challenges:

- No legal entity exists that could apply for integrated projects spanning multiple town boundaries, yet communities cannot solve the issue without the help of other communities.
- Related to the above issue is the need to overcome concerns about ceding town sovereignty by collaborating with other towns or with a new entity to address the issue. Some people will fear the creation of a new entity to manage nitrogen.
- Assigning financial and legal responsibility is challenging when multiple communities share a watershed and contribute differently to the problem. Towns with small
contributions to the problem may not be incentivized to participate—they may have a low willingness to pay. Similarly, it is unclear which entity would operate, maintain, and monitor the systems once installed.

- The regulatory and legal frameworks are both a maze and a minefield in terms of permitting new technologies and receiving credit for nitrogen reduction. Navigating these frames can be a costly endeavor.
- Flexibility in regulations is necessary, but who will negotiate with the Commonwealth to create a more regulatory and permitting friendly environment?
- The public is unaware of and sometimes unaccepting of nontraditional technologies, partially due to misinformation.
- There is insufficient hard data to support all the nontraditional technologies.
- The 2.5% override is always a concern.
- Public perception of the projects may be negatively influenced by past efforts such as the MWRA tax.
- Lack of awareness - The public is not aware of the 208 Process or about the consequences of doing nothing, which causes some people to postpone action until a later date. People are also unaware of the connection between groundwater and coastal resources.
- Water districts are not engaged in the 208 Plan Update process.
- Once implemented, a delay in water quality improvements could create the perception that the integrated approach is not working properly.
- The Not In My Back Yard (NIMBY) backlash—some people will not accept projects in their neighborhoods due to concerns about private property.
- Zoning regulations and land use availability may impede the use of nontraditional approaches.
- The rigidity of the natural heritage and watershed protection acts do not enable a detailed review of projects at a very fine level.

The working group next identified the following opportunities:

- Since multiple towns may share a watershed, legal and financial responsibilities may provide incentives for long-term collaboration to solve the problem. For example, if a town votes not to participate in a collaborative agreement, then that town would not receive 0% loans for wastewater projects. Additionally, if a town does not participate, then the DEP and EPA would be required to take enforcement action, which the town would then be required to implement independently.
- This process will help identify options for assigning responsibility.
- This process will help seek regulatory relief for alternative technologies.
- Clear monitoring protocols to be implemented across the communities sharing a watershed would provide a solid base of data for the project.
- Public pilot projects could raise awareness and acceptance of nontraditional technologies. Pilot projects could also create opportunities to generate data on nontraditional technologies.
• Current efforts provide the opportunity to educate people about the issue and the consequences of not addressing the issue now. It could also provide the opportunity to educate state and federal regulators about the unique qualities of the Cape.
• Public awareness could be increased by involving the public drinking water districts and linking the nitrogen issue to concerns about public drinking water sources.
• New technologies might result in more rapid improvements to water quality than traditional technologies will show. Additionally, the new technologies may be cheaper than the traditional technologies.
• Efforts made on Cape Cod could provide a model for other communities throughout the USA.
• A new framework and process to permit an integrated project could be developed.
• A new entity, a ‘permanent applicant’, or the Commission could help towns address watershed wide issues.
• Revisions to the permit review process could enable new partnerships between the Commission and the towns.
• Clarification of the management entities will help agencies to approve projects.
• Existing institutions could be used to amplify the need for inter-municipal coordination.
• Collaborative efforts could establish a new sense of environmental stewardship.
• The DEP and EPA seem supportive of this process.

A group member asked whether and how the 208 regulations are used in other locations. An EPA representative replied that the 208 regulations have not bee utilized in the northeast in some time; but in Colorado and Utah they are frequently invoked to obtain funding to move forward with wastewater treatment planning.

V. IMPLEMENTATION: ADAPTIVE MANAGEMENT

Mr. Niedzwiecki said that the implementation topic for this meeting would focus on adaptive management and framed the topic with the following question: “What components of an adaptive management plan are needed to achieve permitability and water quality goals?”

Mr. Niedzwiecki noted that adaptive management is a concept that can have many different definitions and suggested that the working group try to identify the key components of an adaptive management strategy. He provided the following definition of adaptive management as a starting point: “A structured approach for meeting water quality goals that monitors outcomes, assesses progress over time, and requires recalibration of plans and projects, as necessary, based on review and evaluation of monitoring.” The working group identified the following key components of an adaptive management strategy:

• A structured approach that is customized to the watershed, lends itself to permitting and enforcement by regulators, and clearly establishes a governance or management structure;
• Clear goals or targets;
• Great baseline data;
• An overall monitoring plan, and clear monitoring protocols for each technology that can quantify success or failure;
• Flexibility – the opportunity to adjust strategies and goals based on data, new technologies, or changes to existing technologies;
• Development and retention of local monitoring expertise;
• Transparency in data collection and distribution;
• Anticipates the future, including contaminants of emerging concern, and climate change impacts;
• Includes a regulatory component to review future land use development or conservation plans, and works within comprehensive development plans;
• Ability to include net plus nitrogen credits if actions go above and beyond what was expected;
• Supported by water districts, towns, and elected officials.

Mr. Niedzwiecki presented a possible adaptive management strategy illustrated in Figure 3.

Mr. Niedzwiecki explained that the diagram represents five-year cycles of feedback loops such that, if a given non-traditional technology is not meeting expected performance goals, decisions can be made to continue working with that technology, and/or implement another non-traditional technology, and/or implement traditional technologies (such as sewering). As time progresses, if non-traditional technologies are not performing adequately to meet nitrogen
reduction goals, the permittee would default to sewering. Mr. Niedzwiecki noted that real-time monitoring of nitrogen in embayments and estuaries, which would be possible to perform in the near future, would facilitate adaptive management.

Participants discussed how the negotiation process to create an adaptive management framework would unfold. Mr. Niedzwiecki suggested that the Commission would negotiate with the DEP, MEPA, and EPA to establish the framework and the timeframe. He noted that baseline data would likely be derived from the MEP and TMDL reports. Mr. Niedzwiecki said that risk and uncertainty underpin the adoption of an adaptive management framework and that the EPA, DEP, and CCC will also need to determine an acceptable level of risk and uncertainty.

The group discussed how regulators might react to a newly proposed framework that is fundamentally different from the current framework. One participant suggested the group should not propose adaptive management since this might be challenging for regulators; instead, the participant suggested proposing the use of adaptive technology. A representative from the EPA commented that EPA Region 1 is supportive of a collective, inter-municipal approach using newer green technologies to meet water quality standards.

The group listed other criteria that might provide regulators with greater confidence in an adaptive management plan:

- Diversity of approaches;
- Freshwater monitoring of phosphorous and a clear link to co-benefits such as economic opportunities;
- Preservation of the unique qualities of Cape Cod;
- Understanding of the cost of doing nothing;
- Inclusion and support of the Massachusetts Department of Transportation.

A group member asked how towns should proceed with CWMPs considering when and if an approach could be submitted through the yet-to-be-developed permitting framework. There is no clear answer to this question at this time, but Mr. Niedzwiecki said that perhaps Three Bays Watershed is the place to initiate the use of the new permitting protocol/framework.

A participant suggested reframing the technologies. Instead of using terms such as innovative or nontraditional, the participant suggested calling the technologies site-specific. Mr. Niedzwiecki agreed that the distinction in the terminology is important and said eventually the list of technologies will become a list of all viable strategies as opposed to traditional and nontraditional strategies.

VI. PUBLIC COMMENTS

A member of the public asked if the narrative pieces the Commission plans to release on the website will be available to the public. Mr. Niedzwiecki said everyone will be able to review the documents, but only the stakeholders will be able to comment on them.
## APPENDIX ONE: MEETING PARTICIPANTS

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<td><strong>Working Group Members</strong></td>
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<tr>
<td>George Allaire</td>
<td>Town of Yarmouth</td>
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<td>Jaci Barton</td>
<td>Barnstable Land Trust</td>
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<td>Steve Brown</td>
<td>Red Lily Pond Project</td>
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<td>Linda Bolliger</td>
<td>Hyannis Park Civic Association</td>
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<td>Philip Boudreau</td>
<td>Barnstable Citizens Advisory Committee</td>
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<td>Ann Canedy</td>
<td>Town of Barnstable</td>
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<td>Fred Chirigotis</td>
<td>Town of Barnstable</td>
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<td>Lindsey Counsell</td>
<td>Three Bays Preservation</td>
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<td>Beth Ferranti</td>
<td>Marstons Mills Resident</td>
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<td>Conrad Geyser</td>
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<td>Jessica Rapp Grasetti</td>
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<td>Joanna Hunter</td>
<td>Environmental Protection Agency</td>
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<td>Tom Klein</td>
<td>Equity Management Partners</td>
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<td>Ed Nash</td>
<td>Golf Course Superintendents Association</td>
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<td>Sypro Mitrokostas</td>
<td>Dennis Chamber of Commerce</td>
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<td>Dale Saad</td>
<td>Town of Barnstable</td>
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<td>Sam Wilson</td>
<td>Sotheby Realty</td>
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<td><strong>Staff</strong></td>
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<td>Patty Daley</td>
<td>Cape Cod Commission</td>
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<td>Tom Cambareri</td>
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<td>Paul Niedzwiecki</td>
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<td>Scott Horsley</td>
<td>Consultant for Cape Cod Commission</td>
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<td>Eric Roberts</td>
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<td><strong>Observers</strong></td>
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<td>Ed Gardella</td>
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<td>Dan Milz</td>
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<td>Sue Phelan</td>
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</tbody>
</table>