Section 208
Area-Wide Water Quality Management Plan Update
Upper Cape Area

CAPE COD COMMISSION
watersheds.capecodcommission.org
Why Are We Here?
105 Watersheds
57 Major Coastal Embayments

57 Embayments
1 Sole Source Aquifer
NO Single Solution

No “silver bullet” to fit multiple needs:

| Traditional Gray Infrastructure | AND | Green Infrastructure & Alternative Approaches |
Stakeholder Engagement

CAPE-WIDE
Advisory Board
Communications Strategy
Communications Campaign
Benchmarking & Assessing
Program Branding

WATERSHED
Stakeholder Communication
Workshop Facilitation
Capacity Building
Watershed Status Portal

Regulatory Coordination
Technical Advisory Committee

watersheds.capecodcommission.org
Project Team

Consultants:
AECOM, Consensus Building Institute
Emerson College, Engagement Game Lab, Offshoots Productive Landscapes

Staff:
Cape Cod Commission

(revised from initial presentation)
Advisory Board

June 18th – First Meeting

Members:

- Robert Churchill, Churchill Associates
- Robert Lawton, former Yarmouth Town Administrator
- Wendy Northcross, CEO of the Cape Cod Chamber of Commerce
- Sheila Vanderhoef, Eastham Town Administrator
- Virginia Valiela, Member- Falmouth Water Quality Mngmt Committee
- Robin Wilkins, former Town of Harwich Selectman
Regulatory, Legal & Institutional Work Group

Members:

Cape Cod Commission
MassDEP
U.S. EPA
U.S. Army Corps of Engineers
Financial/Regulatory Goals

Work with state and federal partners for:

- Regulatory flexibility
- Funding supporting 50% of capital costs
The Commission is developing a set of innovative tools to assist with decision making.

- Watershed MVP
- Systems Dynamics Model
- Green Infrastructure Site Selection Process
- Game-based Planning
Upper Cape Area Manager

Marie Cannon, AECOM
SECTION 208 WATER QUALITY PLAN UPDATE

Upper Cape Area

Buzzards Bay Group
- SHARED BY: Falmouth, Bourne, Sandwich
- Embayment Watersheds:
  - BUTTERMILK BAY - Bourne
  - MOONEY'S HARBOR/BACK RIVER - Bourne, Sandwich
  - POQUONSET RIVER - Bourne, Sandwich
  - POQUOSET RIVER - Bourne, Sandwich
  - MOONEY'S HARBOR/BACK RIVER - Bourne, Sandwich
  - MOONEY'S HARBOR - Bourne, Sandwich
  - MOONEY'S HARBOR - Bourne, Sandwich
  - MOONEY'S HARBOR - Bourne, Sandwich
  - WEST FALMOUTH HARBOR - Falmouth
  - WEST FALMOUTH HARBOR - Falmouth

Falmouth Wastewater Treatment Plant

Falmouth

Woods Hole Group
- SHARED BY: Falmouth
- Embayment Watersheds:
  - QUISSETT HARBOR - Falmouth
  - OYSTER POND - Falmouth
  - SALT POND - Falmouth

Falmouth Fingers Group
- SHARED BY: Falmouth, Sandwich
- Embayment Watersheds:
  - FALMOUTH INNER HARBOR - Falmouth
  - LITTLE POND - Falmouth
  - GREAT POND - Falmouth, Sandwich
  - GREEN POND - Falmouth
  - BOURNEMES POND - Falmouth

Waquoit Bay & Popponesset Bay
- SHARED BY: Barnstable, Falmouth, Mashpee, Sandwich
- Embayment Watersheds:
  - WAQUOIT BAY - Falmouth, Mashpee, Sandwich
  - POPPONESETT BAY - Barnstable, Mashpee, Sandwich

Direct Ocean Discharge

Mashpee

Sandwich

Bourne
# Watershed Groups & Subwatersheds

## WAQUOIT BAY & POPPONESSET
**Shared By:** Barnstable, Falmouth, Mashpee, Sandwich

**Embayment Watersheds:**
- **WAQUOIT BAY** — Falmouth, Mashpee, Sandwich
- **POPPONESSET BAY** — Barnstable, Mashpee, Sandwich

## BUZZARDS BAY GROUP
**Shared By:** Falmouth, Bourne, Sandwich

**Embayment Watersheds:**
- **BUTERMILK BAY** — Bourne
- **PHINNEY’S HARBOR/BACK RIVER** — Bourne, Sandwich
- **POCASSET RIVER** — Bourne, Sandwich
- **POCASSET HARBOR** — Bourne, Sandwich
- **MEGANSETT HARBOR** — Bourne, Falmouth, Sandwich
- **RANDS CANAL/FIDDLER COVE** — Bourne, Falmouth, Sandwich
- **WILD HARBOR** — Bourne, Falmouth, Sandwich
- **WEST FALMOUTH HARBOR** — Falmouth
- **GREAT SIPPEWISSET CREEK** — Falmouth
- **LITTLE SIPPEWISSET MARSH** — Falmouth

## FALMOUTH FINGERS GROUP
**Shared By:** Falmouth, Sandwich

**Embayment Watersheds:**
- **FALMOUTH INNER HARBOR** — Falmouth
- **LITTLE POND** — Falmouth
- **GREAT POND** — Falmouth, Sandwich
- **GREEN POND** — Falmouth
- **BOURNES POND** — Falmouth

## WOODS HOLE GROUP
**Shared By:** Falmouth

**Embayment Watersheds:**
- **QUISSETT HARBOR** — Falmouth
- **OYSTER POND** — Falmouth
- **SALT POND** — Falmouth
Watersheds to Coastal Embayments and Town Boundaries

- Watershed Embayments within a Town Boundary
- Watershed Embayments that cross Town Boundaries

A Regional Issue
The Nitrogen Story
Where Groundwater Meets the Estuaries....
A Diverse Habitat
The Nitrogen Enters from Groundwater....
The Algae Blooms, the Oxygen is gone....
Bournes Pond, Falmouth – May 2013
Coastal Water Quality Problem

Reduction in eel grass

Waquoit Bay - Falmouth and Mashpee
Approach to the 208 Plan Update

- Update to 1978 Plan
- Watershed-Based
- Stakeholder Engagement – Cape-Wide & Watershed-Based
- Maximize Benefits of Previous Planning
- No Optimal Solution. Diverse Technologies
- Adaptive – Technology Development, Pilot Projects, Progress Monitoring
- Coordination with MassDEP and U.S. EPA
Outreach

208 Town Meetings

Discussion
• 208 watershed planning process
• Status of local planning to date

Public Meetings – Work Plan & Project Goals
• Outer Cape – 7/15
• Upper Cape – 7/16
• Lower Cape – 7/17
• Mid Cape – 7/18
Sub-Group Boundaries
208 Water Quality Management Plan Update

**Lower Cape**
- Boat Meadow & Herring River
- Herring River
- Namskaket Group
- Pleasant Bay/Town Cove/Nauset Marsh
- Stage Harbor Group

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

**Upper Cape**
- Buzzards Bay Group
- Falmouth Finger Group
- Waquuit Bay & Popponesset Bay
- Woods Hole Group

**Outer Cape**
- Provincetown Harbor
- Wellfleet Harbor & Pamet River
Working Group Participants

• Target of 15-20 members per working group

• 8-10 Designated Seats
  - Local Elected Officials
  - Wastewater Committee Member
  - Town Professional Staff
  - Local Business Owner/Operator
  - Local Environmental Organization
  - Civic Group Member
  - Alternative Technology Interest
  - Development/Real Estate Community

• 5-7 open seats for each group

• Consensus Building Institute to facilitate selection process, decisions made by participants.
Stakeholders Should Expect to…

- Represent and articulate the diverse range of interests and concerns they represent.
- Seek input from constituents, and keep them informed about Working Group proceedings.
- Attend all meetings and participate actively in discussions.
- Engage in respectful and constructive dialogue with other participants.
- Seek creative options to resolve wastewater problems.
Three meetings for each of 14 Watershed Groups

MEETING 1:
Baseline Conditions & Impairments

MEETING 2:
Develop Remediation Strategies

MEETING 3:
Develop Options by Watershed
(revised from initial presentation)
The Workshop Process

1. **Identify Stakeholder Groups**
2. **Define Baseline Conditions & Impairments**
   - Needs Summary
   - 14 Workgroups
   - Timeframe: Late Aug
3. **4 Public Meetings**
   - Timeframe: Aug. 1-14
4. **Develop Remediation Strategies**
   - 14 Workgroups
5. **Integration into Cape-Wide 208 Plan Update**
   - Timeframe: Oct. 22 – Nov. 4
6. **Develop Options by Watershed**
   - 14 Workgroups
7. **Affordability & Implementation**
   - Timeframe: Sept. 19-27
8. **Implementation**
   - Timeframe: Oct. 22 – Nov. 4

**This week:**
July 15, 16, 17, 18

(revised from initial presentation)
# Upper Cape Working Groups

## Buzzards Bay
- **Location:** Bourne Town Hall
- **Time:** 8:30 a.m – 12:30 p.m.
- **Dates:** Aug. 6, Sept. 30, Oct. 24

## Falmouth Fingers Group
- **Location:** Falmouth Town Hall
- **Time:** 8:30 a.m – 12:30 p.m.
- **Dates:** Aug. 2, Sept. 24, Oct. 25

## Woods Hole Group
- **Location:** Smith Lab, WHOI
- **Time:** 8:30 a.m – 12:30 p.m.
- **Dates:** Aug. 13, Sept. 27, Oct. 22

## Waquoit/Popponesset
- **Location:** Mashpee Town Hall
- **Time:** 1:00 – 5:00 p.m.
- **Dates:** Aug. 7, Sept. 25, Oct. 30
Thinking about this process…

What is our greatest opportunity?

What is our greatest challenge?

Take 15 minutes to talk these over in small groups.
Register to Play Cape$_2$O

communityplanit.org/capecod