

2ND ANNUAL
CAPE COASTAL
CONFERENCE

JUNE 5, 2014



Linking Science with Local Solutions and Decision-Making

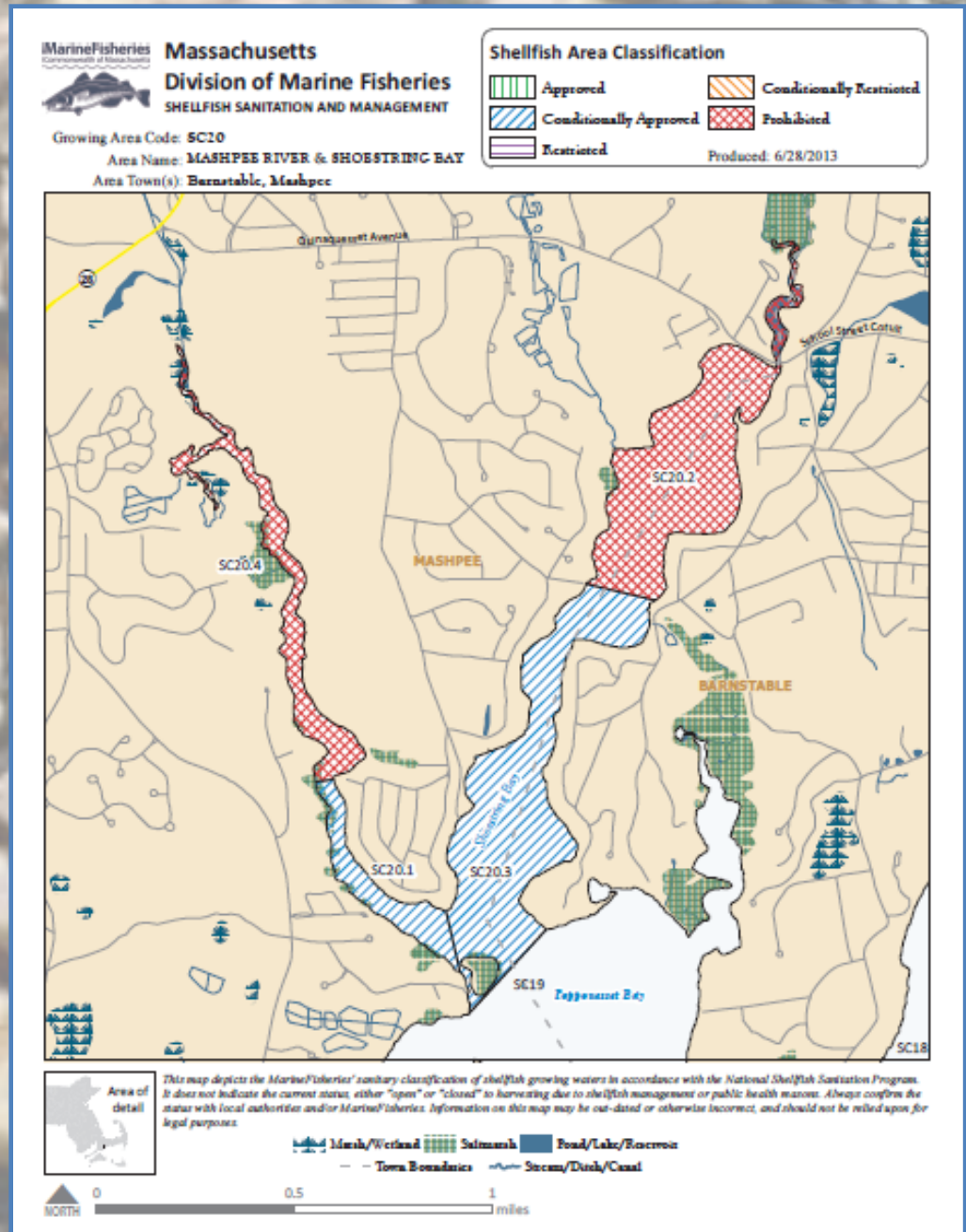
Shoestring Bay Stormwater Remediation Project

Catherine Laurent
Mashpee DPW Director

- Coastal embayment shared by the Towns of Mashpee and Barnstable
- Productive shellfish habitat - used by the Town's Shellfish Constable for oyster propagation
- Privately licensed shellfish aquaculture also located in the bay



- Permanent and seasonal shellfishing closures due to bacterial contamination (seasonal closure May 1 – October 1).





Mashpee Neck Road

- Stormwater runoff identified as one of the contamination sources

The Cape Cod Water Resources Restoration Project



Current Situation

Barnstable County, Massachusetts – also known as **Cape Cod** – is a coastal area where ecosystems have been compromised by urban development.

Water quality is a major concern on Cape Cod, particularly as it affects the ground water aquifer, salt marshes, shellfish beds and herring runs.



Stormwater runoff is a significant source of pollutants. Shellfish beds are often closed for extensive periods during the year because of poor water quality.



Under-sized culverts are barriers to the tidal flow and migration of fish. When natural tidal flow is restricted, the salt marsh ecosystems become degraded.



Falling fish passages prevent fish from migrating past man-made barriers to their fresh water spawning sites.

Threatened species (number)

Wet	4	Seagrass wren	1
Least tern	1	Indigo bunting	4
Redpoll	1	Grassquit	1
Blue	21	Wren	11
Marsh wren	1	Parula	61

Is there a plan to solve these problems?

Federal, state and local agencies have partnered to identify problems and formulate solutions. The costs and benefits of various alternatives have been evaluated and sponsors' decisions are contained in a watershed plan.

The plan identifies a total of 76 sites throughout Cape Cod for possible restoration, including:

- 26 storm water discharge sites
- 26 tidal-restricted salt marshes
- 24 fish passages

The watershed plan describes the work to be done, the responsibilities of each agency, financing arrangements and maintenance provisions.

Estimated cost & contributions

Total federal funds	\$23,900,000
Total non-federal funds	\$5,990,000
Total estimated cost	\$29,890,000

A partnership comprised of the following agencies is collaborating on this project.

Sponsors

- Barnstable County Commissioners
- Cape Cod Conservation District
- Executive Office of Energy and Environmental Affairs
- All 15 towns across Cape Cod
- USDA Natural Resources Conservation Service

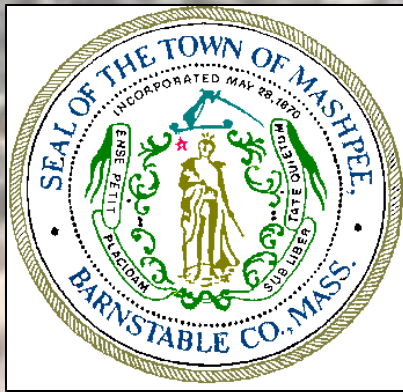
Cooperating Agencies

- Wampanoag Tribe
- Massachusetts Department of Environmental Protection
- Massachusetts Department of Fish and Game
- Massachusetts Division of Coastal Zone Management
- Massachusetts Division of Marine Fisheries
- Massachusetts Highway Department
- National Oceanic and Atmospheric Administration
- National Park Service
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- Town boards of health, natural resource departments, conservation commissions, shellfish vendors and harbor masters.

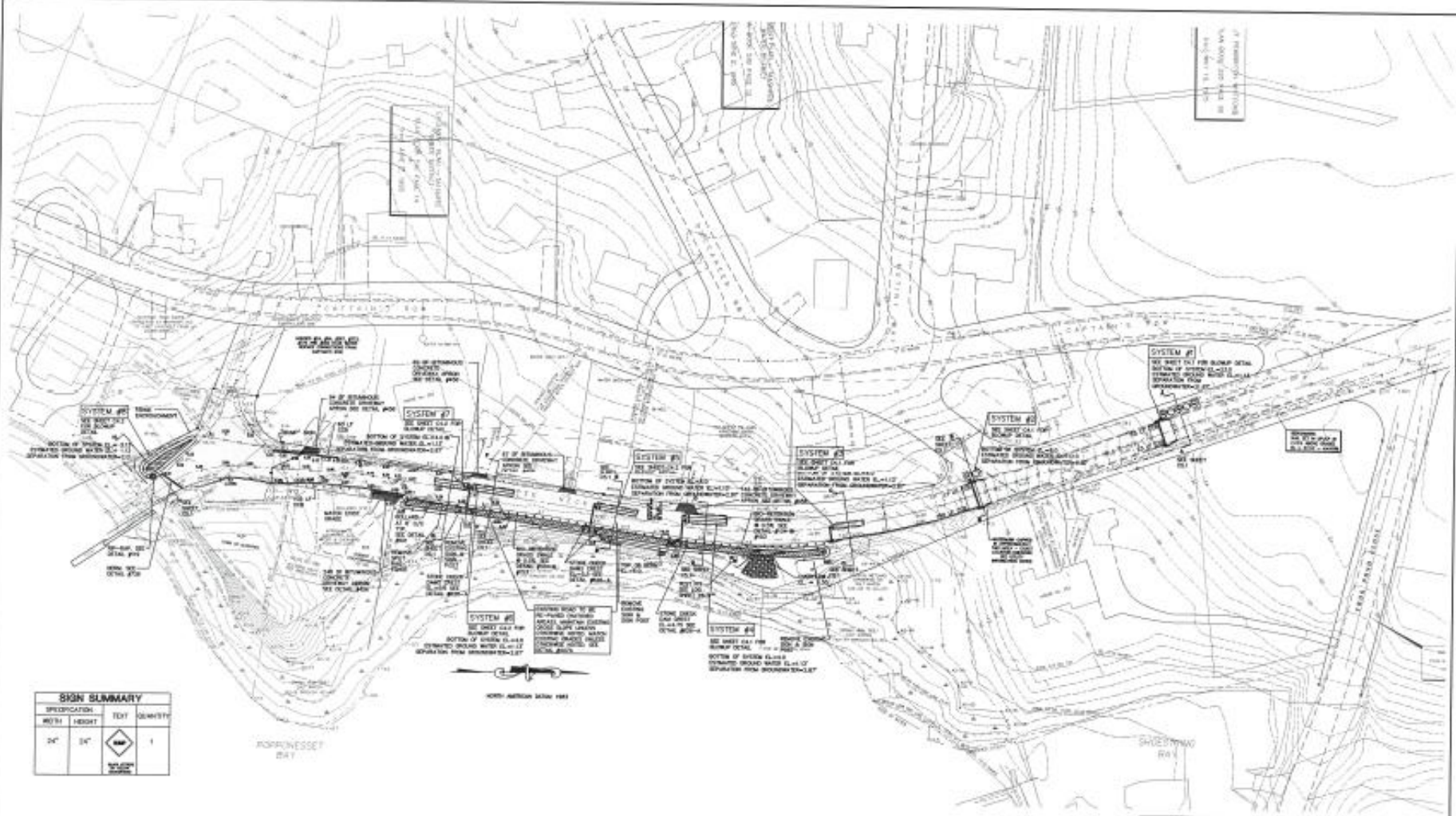


- Congress authorized funding for the Cape Cod Water Resources Restoration Project on Dec. 19, 2009

- Restoration of shellfish habitat one of the eligible uses for the funds



- Cape Cod Conservation District approved Mashpee's application for funding
- Grant was administered through USDA Natural Resources Conservation Service
- Grant funded 100% of the design and administrative costs and 75% of the construction costs; Town responsible for the remaining 25% of the construction costs



SIGN SUMMARY			
SPECIFICATION	TEXT	SYMBOL	QUANTITY
24"	24"		1

MASHPEE
MASS

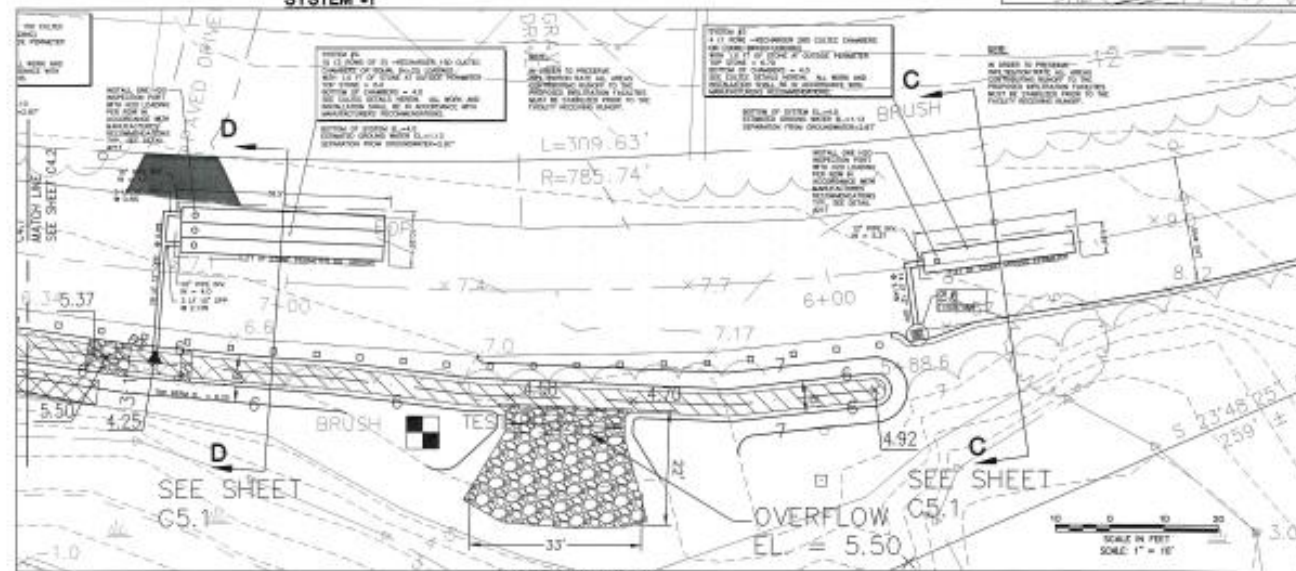
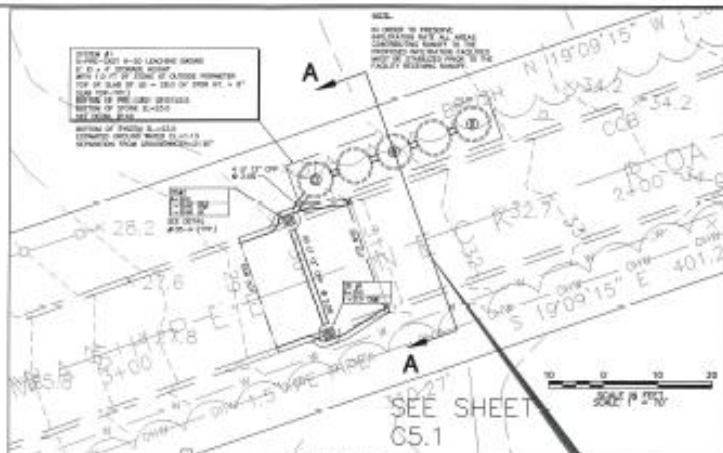
ISSUED FOR CONSTRUCTION

PROJECT
PROPOSED STORMWATER MANAGEMENT SYSTEMS
PREPARED FOR:
TOWN OF MASHPEE DEPARTMENT OF PUBLIC WORKS
LOCATION:
**MASHPEE NECK ROAD STORMWATER PROJECT
MASHPEE, MASSACHUSETTS, 02649**

BAXTER NYE ENGINEERING & SURVEYING
Registered Professional Engineer and Land Surveyor
78 North Street - 3rd Floor, Hyannis, Massachusetts 02601
Phone - (508) 771-7302 Fax - (508) 771-7632



**SHEET
NUMBER
C4.0**



PROPOSED STORMWATER MANAGEMENT SYSTEMS

PROVIDED FOR:

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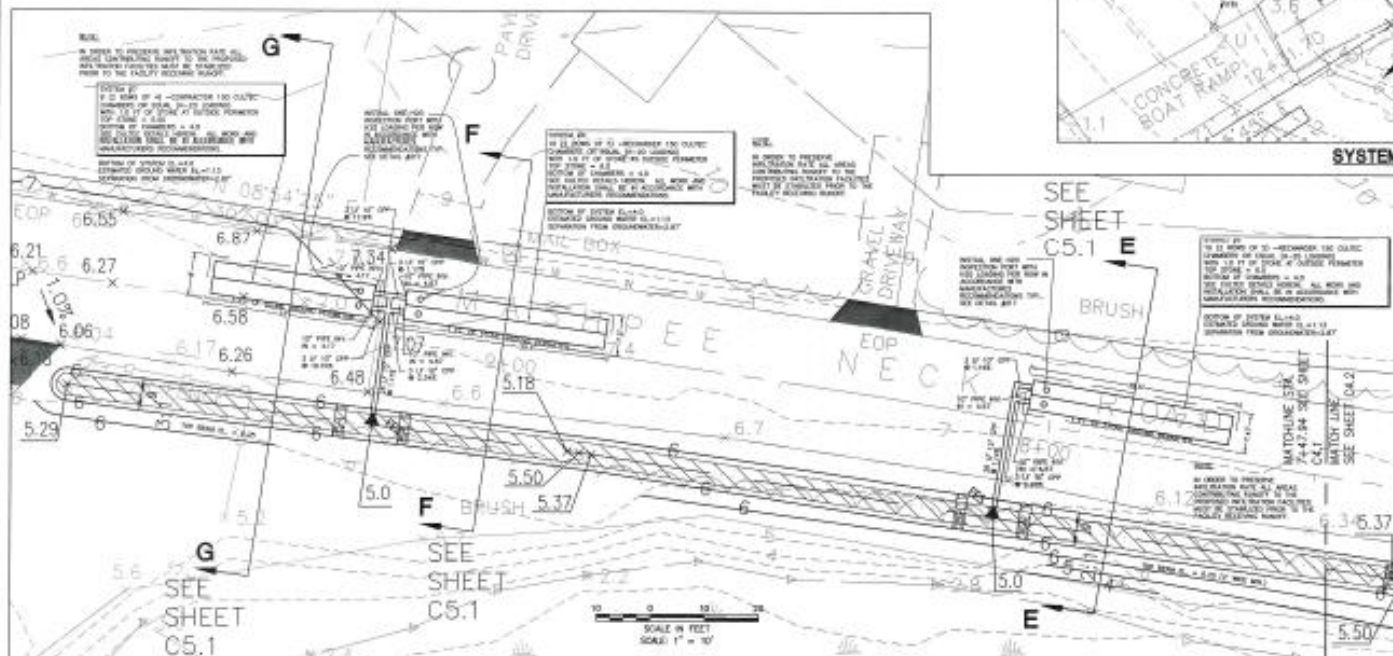
ISSUED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	10/1/2011	ISSUED FOR CONSTRUCTION

SHEET NUMBER

C4.1

DATE: 5/26/11



<p>FILE #</p> <p>PROPOSED STORMWATER MANAGEMENT SYSTEMS</p> <p>PREPARED FOR:</p> <p>TOWN OF MASHPEE DEPARTMENT OF PUBLIC WORKS</p> <p>LOCATION:</p> <p>MASHPEE NECK ROAD STORMWATER PROJECT MASHPEE, MASSACHUSETTS, 02649</p>	<p>DATE:</p> <p>BAXTER NYE ENGINEERING & SURVEYING</p> <p>Registered Professional Engineers and Land Surveyors</p> <p>79 North Street - 3rd Floor, Hyannis, Massachusetts 02601</p> <p>Phone - (508) 771-7562 Fax - (508) 771-3622</p>	<p>ISSUED FOR CONSTRUCTION</p> <p>SHEET NUMBER</p> <p>C4.2</p>
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Drainage System #4 – Cultec Chambers



Drainage System #7 – Cultec Chambers



Bioretention Swale



- Final project cost approximately \$228,000
- Town's share approx. \$49,000; used Chapter 90 funds

- DMF data shows reduction of 35% in fecal coliform pre/post project
- DMF now testing year round – with continued encouraging results, may be able to reopen area

