

Chapter 1

PROJECT SUMMARY

Project Name: Cape Cod Water Resources Restoration Project

County: Barnstable

State: Massachusetts

Sponsors: Cape Cod Conservation District
Barnstable County Commissioners
15 Towns of Barnstable County
Massachusetts Executive Office of Environmental Affairs

Description of Recommended Plan:

The action of this plan addresses environmental degradation of water quality and fish and wildlife habitat. These actions include the following activities:

- Altering stream crossings to improve tidal flushing at locations where transportation infrastructure (roads, bridges, culverts, railroad tracks, etc.) has reduced the size of tidal channels and affected upstream salt marsh hydrology;
- Repairing or otherwise upgrading anadromous fish passages to restore the fish runs to their original capacity;
- Treating the first flush of stormwater runoff to improve water quality in shellfishing areas.

The recommended plan includes 26 priority salt marsh restoration projects, 24 priority fish passage obstruction remediation projects, and 26 priority stormwater remediation projects. The estimated cost of the Cape Cod Project is \$30 million, of which \$24 million would be Public Law 83-566 funds, and the estimated construction period for all individual projects is ten years.

As each individual project site is proposed for implementation by a local sponsor, it will be evaluated in more detail to determine if the design assumed for this planning-level study is the most feasible and effective. Other feasible and effective alternative designs will be considered. The impacts and benefits of each project will be evaluated in more detail in an Environmental Evaluation tiered to this EIS.

Resource Information:

- Size of watershed 243,740 acres^{1/}
 - Land use
- | | <u>Acres</u> | <u>% of Watershed</u> |
|------------------------------------|----------------------|-----------------------|
| Cropland | 1,951 | 0.8 |
| Forest | 78,557 | 32.2 |
| Developed land | 102,144 | 42 |
| Grassland | 805 | 0.3 |
| Other (wetlands, open land, etc.) | 60,283 | 24.7 |
| Massachusetts Military Reservation | 20,248 ^{1/} | — |

^{1/} Massachusetts Military Reservation not included in Project

Land ownership – Private 75 % State/Town 13% Federal 12%

Number of farms 285* Average farm size acres 21*
**NASS 2002 Ag Census – no aquaculture*

Prime and important farmland acres 22,456

Number of minority farmers 15

Number of female farmers 57

Number of limited resource farmers 40

- Beneficiary Profile

| <u>Characteristic</u> | <u>Barnstable County</u> | <u>Massachusetts</u> |
|---|--------------------------|----------------------|
| Median Household Income ^{1/} | \$45,933 | \$50,502 |
| Median House Value ^{2/} | \$178,000 | \$182,800 |
| Median Age ^{3/} | 44.6 | 36.5 |
| Percent of population age 65 and over ^{4/} | 23% | 14% |

^{1/} P 53. Median Household Income in 1999 (DOLLARS)[1]. US Census 2000 Summary File 3 (SF3)-Sample Data.

^{2/} H85. Median Value in 1999 (DOLLARS) for all Owner Occupied Housing Units [1]. US Census 2000 Summary File 3 (SF3)-Sample Data.

^{3/} Barnstable county: http://www.city-data.com/county/Barnstable_County-MA.html; 2005 American Community Survey Data Profile Highlights: Massachusetts. <http://factfinder.census.gov>.

^{4/} P8. Sex by Age [79]. US Census 2000 Summary File 3 (SF3)-Sample Data.

- Flood plains

| <u>Land Use</u> | <u>Flood plain (acres)</u> |
|-----------------|----------------------------|
| Crop | 98 |
| Pasture | 94 |
| Forest | 47,459 |
| Wetland | 6,220 |
| Open | 4,437 |
| Other | 50,725 |

- Highly erodible cropland

| | |
|--------------------------------------|-----------|
| Highly erodible cropland | 380 acres |
| Potentially highly erodible cropland | 789 acres |

- Wetlands – acres by class (total 38,735)

| <u>Wetland Type</u> ^{1/} | <u>Code</u> | <u>Acres</u> |
|-----------------------------------|-------------|--------------|
| Coastal bank bluff or sea cliff | BA | 443 |
| Barrier beach system | BB | 1,060 |
| | BB-BE | 700 |
| | BB-D | 2,840 |
| | BB-DM | 60 |
| | BB-M | 18 |
| | BB-OW | 89 |
| | BB-SM | 18 |
| | BB-SS | 88 |
| | BB-WS1 | 11 |
| | BB-WS2 | 8 |
| | BB-WS3 | 2 |
| Coastal beach | BE | 652 |
| Bog | BG | 114 |
| Cranberry bog | CB | 1,176 |
| Coastal Dune | D | 612 |
| Deep marsh | DM | 342 |
| Shallow marsh, meadow, or fen | M | 1,436 |
| Open water | OW | 12,030 |
| Rocky intertidal shore | RS | 14 |
| Salt marsh | SM | 10,117 |
| Shrub swamp | SS | 3,182 |
| Tidal flat | TF | 401 |
| Wooded swamp, deciduous | WS1 | 2,125 |
| Wooded swamp, coniferous | WS2 | 489 |
| Wooded swamp, mixed trees | WS3 | 708 |

^{1/} Massachusetts Department of the Environment Wetlands Conservancy Program

- Endangered species: The Massachusetts Division of Fisheries and Wildlife identifies 69 animal and 63 plant state and/or federally listed threatened or endangered species in Barnstable County. Section 7 consultation has been completed with the National Oceanic and Atmospheric Administration and the U.S. Fish and Wildlife Service. Five federally listed whale species and four listed turtle species occur seasonally in the coastal waters off of Cape Cod. The National Oceanic and Atmospheric Administration concurs with NRCS’s determination that the Project will not affect these federally listed marine species. The U.S. Fish and Wildlife Service states that no federally listed species or critical habitats are known to occur in the Project area. All individual projects brought forward for funding and implementation will be evaluated for their potential effect on threatened or endangered species. No direct effects are expected; construction will be scheduled to avoid conflicts with critical life stages, if applicable at any specific site. Consultation with the U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration, and Massachusetts Division of Fisheries and Wildlife will be completed for each project as it is proposed for implementation.
- Cultural Resources: All project sites will be reviewed for historical and archaeological resources as they are proposed and considered for assistance. NRCS will review all project sites for their

potential to affect cultural resources. NRCS will perform file research, reconnaissance surveys, and where disturbance is expected outside the disturbed footprint, will perform phase 1 surveys. Consultation with both the State Historic Preservation Office and Wampanoag Tribe of Gay Head (Aquinnah) Historic Preservation Office will be completed for each project as it is proposed for implementation.

- Problem identification:
 - Degraded salt marshes—the Cape Cod Commission and the Buzzards Bay Project National Estuary Program identified over 182 sites where salt marshes have been altered by human activity
 - Restricted anadromous fish runs—the Massachusetts Division of Marine Fisheries (DMF) identified 93 fish passage obstructions on Cape Cod
 - Declining water quality of shellfish areas—DMF and town officials identified over 160 stormwater discharge points into shellfishing areas

- Alternatives considered:
 - Proposed Action/Recommended Plan
 - No action alternative

- Project purposes:
 - Restore degraded salt marshes
 - Restore anadromous fish passages
 - Improve water quality for shellfish beds

- Principal Project measures:
 - Enlargement of existing road culverts
 - Replacement or renovation of fish ladders
 - Construction of stormwater runoff treatment measures

- Project Benefits:
 - 26 salt marsh restoration projects to restore 1,500 acres of degraded salt marsh
 - 24 fish passage obstruction remediation projects to restore/improve access to 4,200 acres of spawning habitat for anadromous fish
 - 26 stormwater remediation projects to improve 7,300 acres of water quality for shellfish beds

- Project costs:

| Works of improvement | PL 83-566 funds (\$) | Other funds (\$) | Total (\$) |
|---|----------------------|------------------|-------------------|
| Enlargement or other alteration of culverts, bridges, etc. to improve tidal flushing | 11,340,000 | 3,200,000 | 14,540,000 |
| Replacement or renovation of fish ladders | 4,350,000 | 910,000 | 5,260,000 |
| Construction of facilities to treat stormwater runoff and reduce or eliminate bacterial contamination of shellfish beds | 6,390,000 | 1,800,000 | 8,190,000 |
| Adaptive management | 1,880,000 | 80,000 | 1,960,000 |
| Total | 23,960,000 | 5,990,000 | 29,950,000 |

- Other impacts: Construction of each project could cause short-term, minor, adverse impacts to air, noise, vegetation, wildlife, and soils at the construction site; water quality at the construction site; and local traffic. There would be short-term, minor, beneficial impacts to the local economy from creation of construction jobs. Construction periods would be short, generally one or two weeks to one or two months. The Cape Cod Project complies with the General Conformity Rule for federal projects in nonattainment air quality regions (ozone on Cape Cod). Long-term beneficial impacts of the projects include improved water quality, improved anadromous fish runs, and increased recreational and commercial shellfish harvesting. There are no long-term negative impacts identified at this time. Consistent with the purpose of the salt marsh restoration projects, some freshwater wetlands and fringe uplands may be converted to salt marsh after tidal flushing is enhanced.
- Environmental values changed or lost:
 - Restoration of 1,500 acres of degraded salt marsh
 - Restoration/improvement of access to 4,200 acres of spawning, nursery, and juvenile habitat for anadromous fish
 - Improvement of water quality over 7,300 acres of shellfish beds
- Major conclusions: This Project will have long-term, beneficial effects on restoring the water resources and ecosystems along the coastal and inland areas of Cape Cod. The Project will have no significant detrimental effects on the natural resources or the human environment.
- Areas of controversy: There are no known areas of controversy. The state, county, and towns all support the Project, and no issues or comments of opposition were received on the Draft Plan-EIS.

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- **Issues to be resolved:** There are no known issues to be resolved on an areawide planning basis. An Environmental Evaluation will be conducted for each site when funding becomes available to determine if there are any site-specific issues. If issues are identified, they will be resolved or the site will be removed from the Project.