

Town of Barnstable Comprehensive Water Management Planning

Overview to Citizens Advisory
Committee

December 10, 2009

Comprehensive Water Management Planning

- Introduction to Comprehensive Water Management Planning (CWMP)
- History of Wastewater Planning in Barnstable
- Proposed discussion items for future meetings
- Proposed Schedule for CAC meetings

Comprehensive Water Management Planning

- Goals of Citizen Advisory Committee
 - To advise the Town on the CWMP
 - Review of the scope of work and Mass Estuaries technical and TMDL reports
 - Participate in the alternatives evaluation of how to address the challenges our community faces relative to nutrient loading within our coastal recharge areas
 - Make recommendations on issues as they arise
 - Review and comment on the final documents produced as part of the CWMP planning process
 - Environmental Impact Report submitted to MEPA
 - DIR submitted to the Cape Cod Commission

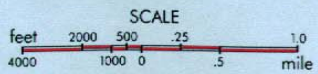
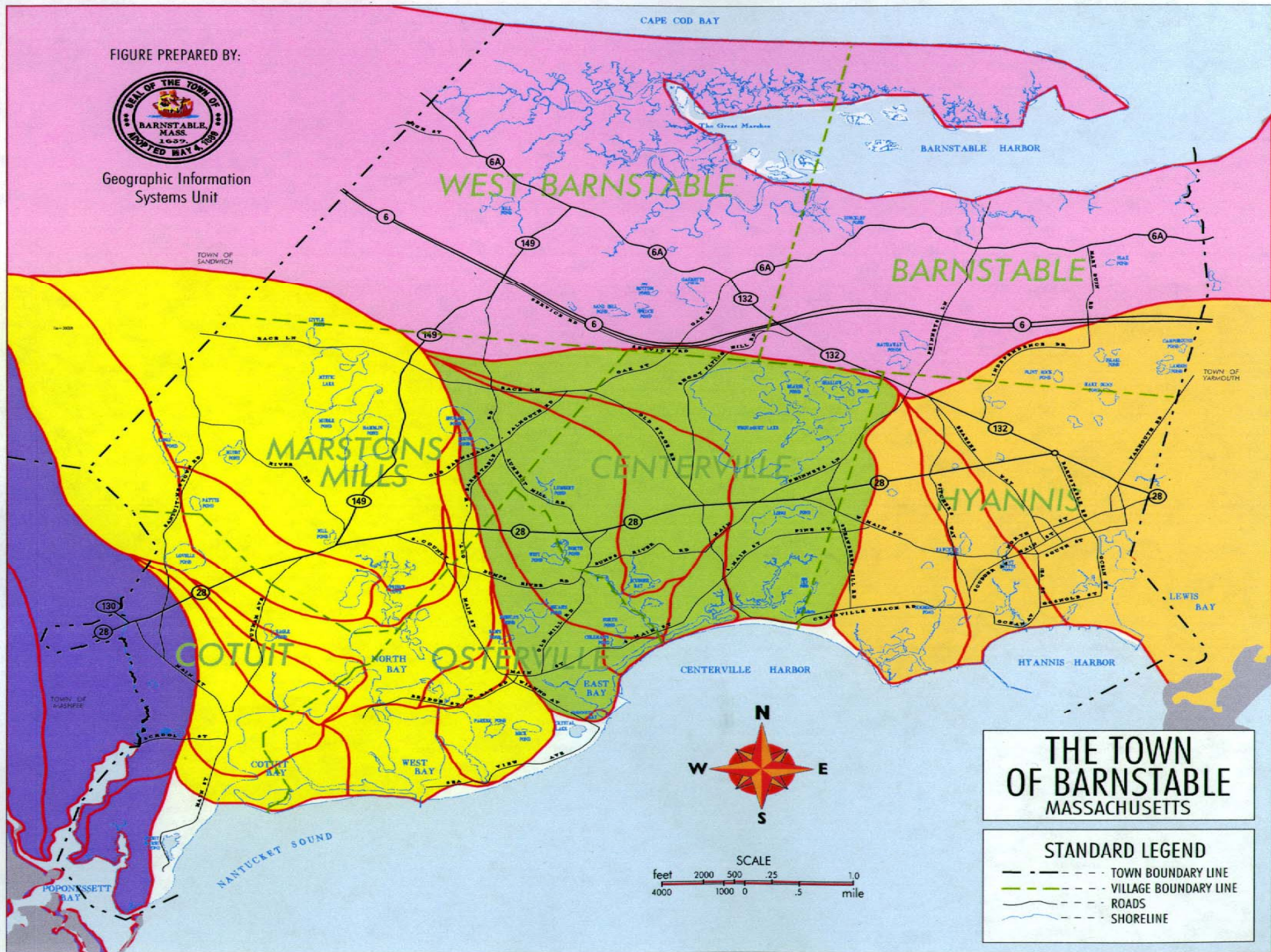
Comprehensive Water Management Planning

- Documents provided and/or available
 - Presentation
 - Scope of Work
 - Overview of Regulatory Process
 - Technical reports and TMDL available as requested or on the Town's website in the lower left corner of our Home page in "Our Water"
 - Nitrogen TMDL Centerville River/East Bay
 - Nitrogen TMDL Five sub-embayments of Popponesset Bay
 - Nitrogen TMDL for the Three Bay System
 - Lewis Bay report

FIGURE PREPARED BY:



Geographic Information Systems Unit



THE TOWN OF BARNSTABLE MASSACHUSETTS

STANDARD LEGEND

- TOWN BOUNDARY LINE
- VILLAGE BOUNDARY LINE
- ROADS
- SHORELINE

Comprehensive Water Management Planning

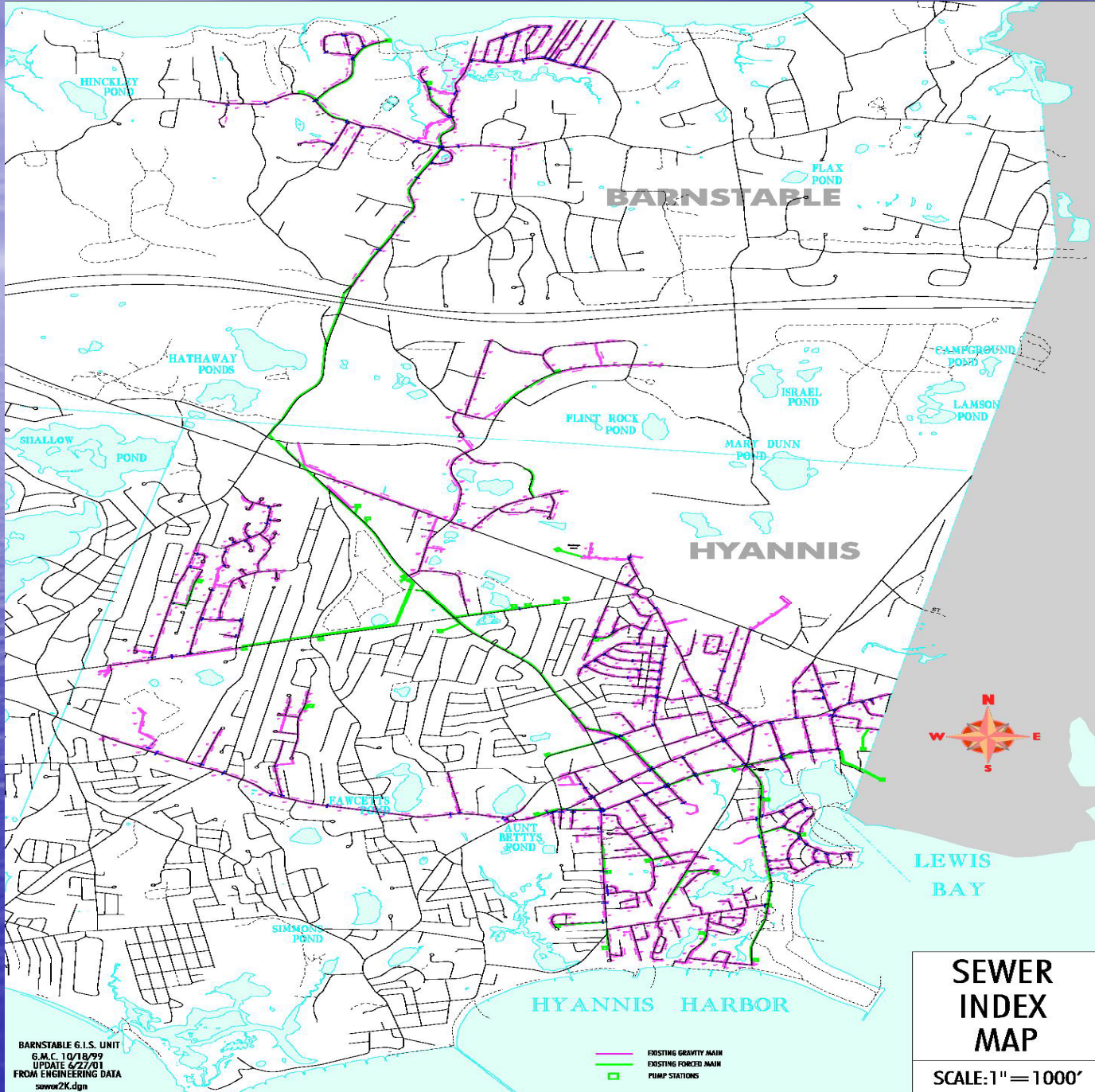
- Town of Barnstable's Comprehensive Water Management Program Phase I is fully funded and moving forward
 - Appropriations by Town Council
 - FY 1999 \$100,000
 - FY 2002 \$250,000
 - FY 2003 \$1,700,000
 - Town has received State Revolving Fund eligibility
 - Presently list for \$2.589M
 - Received Eligibility for Phase I work (\$1.429M) including
 - Environmental Monitoring and Sampling
 - Development of Nutrient Loading Targets
 - Completed technical reports for 3 of the 5 embayments
 - Established TMDLs for 3 of the 5 embayments
 - Scope of Work enclosed
 - Overview of Regulatory Process enclosed

Comprehensive Water Management Planning

- Technical and TMDL reports
 - Popponesset Bay System
 - Load reduction needed to achieve threshold 59%
 - Three Bay System
 - Load reduction needed to achieve threshold 46.3%
 - Rushy Marsh Pond System
 - Load reduction needed to achieve threshold 79%
 - Centerville River System
 - Load reduction needed to achieve threshold 52%
 - Lewis Bay System (draft)
 - Load reduction needed to achieve threshold 27%
 - Barnstable Harbor - incomplete

Comprehensive Water Management Planning

- Major Tasks in the CWMP
 - Environmental Monitoring and Modeling, and development of Nutrient loading targets
 - Nutrient Management Needs Assessment
 - Identification and screening of alternative solutions and sites
 - Detailed Evaluation and Development of the Nutrient Management Plan
 - Prepare final draft documents for MEPA and CCC review
 - Estimated time frame – 18 months



BARNSTABLE G.I.S. UNIT
 G.M.C. 10/18/99
 UPDATE 6/27/01
 FROM ENGINEERING DATA
 sewer2K.dgn

— EXISTING GRAVITY MAIN
 — EXISTING FORCED MAIN
 □ PUMP STATIONS

**SEWER
 INDEX
 MAP**
 SCALE: 1" = 1000'

Comprehensive Water Management Planning

- The Wastewater Facilities Planning Project
 - Required by the MEPA as a condition of Area 5 sewer project determination in 1987
 - Provides a comprehensive strategy for wastewater treatment and disposal issues
 - 20 year planning period (1994 – 2014)

Comprehensive Water Management Planning

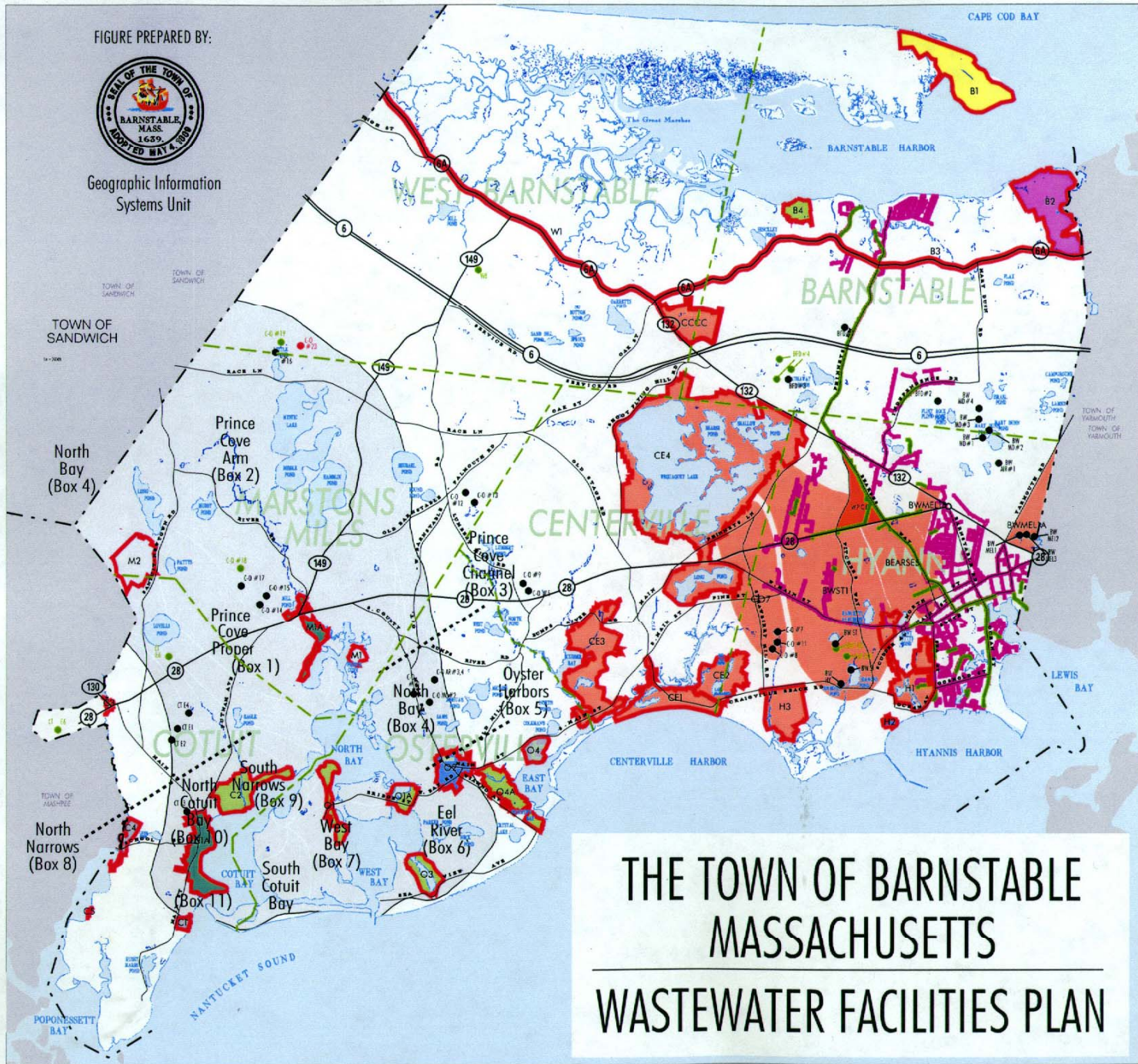
In the early 1990's the goals of Barnstable's Wastewater Facilities Plan included

- Develop a better Understanding of how the Town's Wastewater Disposal Interacts with Natural Resources
- Develop a Plan for Providing Wastewater Facilities in an effort to Resolve Existing Problems including failed Title V systems and impacts on drinking water supplies, Protect Natural Resources and Accommodate Residential and Commercial Development

FIGURE PREPARED BY:



Geographic Information Systems Unit

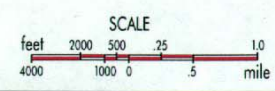


- CONNECTION TO THE HYANNIS W.P.C.F.
- SINGLE UNIT TITLE 5
- MULTIPLE UNIT TITLE 5
- SINGLE UNIT TITLE 5 OR MULTIPLE UNIT TITLE 5
- COMPOSTING TOILETS W/O GRAYWATER SYSTEM
- ON-SITE TITLE 5 OR COMPOSTING TOILETS
- AREA TO RECEIVE TOWN WATER
- BOARD OF HEALTH SOLUTION

LEGEND

- AREAS OF CONCERN
- EXISTING GRAVITY MAIN
- EXISTING FORCED MAIN
- EXISTING WELL SITE
- PROVEN FUTURE WELL SITE
- PROPOSED FUTURE WELL SITE
- TOWN BOUNDARY LINE
- VILLAGE BOUNDARY LINE
- ROADS
- UNIMPROVED ROADS
- SHORELINE
- WATER POLLUTION CONTROL FACILITY

THE TOWN OF BARNSTABLE MASSACHUSETTS WASTEWATER FACILITIES PLAN



Comprehensive Water Management Planning

- Notice of Project Change on June 23, 2003
 - Acknowledgement that Mass estuaries Project had been initiated and nitrogen limits for the Town's coastal estuaries were scheduled to be completed in the next 5 to 8 years
 - Decision to finish the WWFP in AOCs that were recommended for connection to the Hyannis Water Pollution Control facility and to defer all other AOCs to the nutrient management program
 - Justification was that the Hyannis WPCF was/is the best available technology to remove nutrients. The results of the nutrient management study would not change this conclusion and there were known problems in these AOCs as identified by the Town's Health Division

Comprehensive Water Management Planning

- Hyannis Water Pollution Control Facility Improvements
 - Construction of Secondary Clarifier
 - Completed Winter 1997
 - Construction of Upgrade to Aeration and Pump Equipment Replacement
 - Completed Winter 2000
 - Hyannis Water Pollution Control Facilities Improvements Project
 - Completed 2009
 - Effluent Mitigation Project at the McManus site
 - MEPA approval February 2006
 - Construct Force Main from the Hyannis WPCF in Rte 132
 - Completed 2007
 - Design of Force Main from Hyannis WPCF to Rte 132
 - Completed 2006
 - Awaiting MOU with CCC/DCAM

Comprehensive Water Management Planning

- Hyannis Water Pollution Control Facility Improvements
 - Main Street force main and pump station
 - Construction completed 2009
 - Received \$2.0M CDAG grant for project
 - West Main Street pump station design
 - Design completed Sept 2009
 - Construction scheduled spring 2010

Comprehensive Water Management Planning

- Hyannis Sewer Expansion Projects
 - Replacement and extension along Barnstable Road completed 1997
 - Replacement and extension along Corporation Road completed 1997
 - Summerside Lane completed 1998
 - Repair in Center Street complete 1998
 - Replacement and extension along Bearses Way completed 2000
 - Norris Street complete 2002
 - Repair on South Street completed 2008
 - Pleasant Street south of South Street completed 2009

Comprehensive Water Management Planning

- Based on the most recent data we offer the following adaptive management approach as the best management practice in dealing with the determination of future capacity of the effluent recharge beds to be presented in the draft WWFP and DEIR:
 - Continuation with the managed risk approach given the current discharge rates, data available, modeling capabilities, and following strategies adapted to concerns as they may arise in the future,
 - Continuation of groundwater elevation data collection, evaluation, and development of a long term management plan based on that data collection for the sand filter beds at the Hyannis WPCF (to be expanded through the Sentinel Well program).
 - Planned effluent recharge of up to 4.2 mgd at the Hyannis WPCF.

Comprehensive Water Management Planning

- Proposed topics of discussion for CAC meetings
 - Suggested topics of discussion
 - December 10, 2009 – Introduction and overview of CWMP and forming the committee
 - Discuss the schedule for CAC meetings and the completion of the CWMP
 - Discuss the results of the Mass Estuaries Studies and the Regulatory Impacts of the results
 - Discuss alternatives to manage nutrient loading
 - Discuss screening criteria for various alternatives
 - Discuss decentralized/alternative technologies
 - Discuss financial strategy recommended by CFAC
 - Discuss the State Revolving Fund options
 - Other topics as identified by CAC or within the scope of work for the CWMP

Comprehensive Water Management Planning

- Proposed meeting schedule for CAC meetings
 - Meeting monthly on predetermined topics
 - Meeting would coincide with major milestones in the project task schedule

Comprehensive Water Management Planning

- Comments and/or questions