



Comprehensive Water Management Planning

Stewarts Creek
Area Project
February 2010

Comprehensive Water Management Planning

- Planning commenced in 1993 and concluded in 2007
- Areas of Concern
 - Documented Wastewater Problems from On-site Systems
 - ZOCs that exceed 5 ppm Nitrate threshold
- Prioritized Areas of Concern recommended for future connection to the Hyannis Water Pollution Control Facility
 - Wequaquet Lake area
 - Stewart's Creek area
 - Hall's Creek area
 - Long Beach/Short Beach Road & Craigville Beach Road area
 - Red Lily Pond area
 - Portions of Zones of Contribution to Public Water Supply Wells (BWST1 and CO7)
 - Portion of Bearses Way south of Rte 28
 - Gravel pit area north of Attucks Lane
- Prioritization was performed in coordination with a Citizens Advisory Committee, public meetings, public hearings, media communications, and direct mailings

APPROACH TO EXTEND SEWERS TO AREAS OF CONCERN AND FUTURE WASTEWATER FLOWS TO THE WPCF TOWN OF BARNSTABLE MASS. SAW NO. 3497.0

NO.	DATE	DESCRIPTION
1	1/14/03	Initial Conceptual Design
2	2/11/03	Final Conceptual Design
3	3/11/03	Final Engineering Design
4	4/11/03	Final Construction Documents
5	5/11/03	Final Construction Documents
6	6/11/03	Final Construction Documents
7	7/11/03	Final Construction Documents
8	8/11/03	Final Construction Documents
9	9/11/03	Final Construction Documents
10	10/11/03	Final Construction Documents
11	11/11/03	Final Construction Documents
12	12/11/03	Final Construction Documents
13	1/11/04	Final Construction Documents
14	2/11/04	Final Construction Documents
15	3/11/04	Final Construction Documents
16	4/11/04	Final Construction Documents
17	5/11/04	Final Construction Documents
18	6/11/04	Final Construction Documents
19	7/11/04	Final Construction Documents
20	8/11/04	Final Construction Documents
21	9/11/04	Final Construction Documents
22	10/11/04	Final Construction Documents
23	11/11/04	Final Construction Documents
24	12/11/04	Final Construction Documents
25	1/11/05	Final Construction Documents
26	2/11/05	Final Construction Documents
27	3/11/05	Final Construction Documents
28	4/11/05	Final Construction Documents
29	5/11/05	Final Construction Documents
30	6/11/05	Final Construction Documents
31	7/11/05	Final Construction Documents
32	8/11/05	Final Construction Documents
33	9/11/05	Final Construction Documents
34	10/11/05	Final Construction Documents
35	11/11/05	Final Construction Documents
36	12/11/05	Final Construction Documents
37	1/11/06	Final Construction Documents
38	2/11/06	Final Construction Documents
39	3/11/06	Final Construction Documents
40	4/11/06	Final Construction Documents
41	5/11/06	Final Construction Documents
42	6/11/06	Final Construction Documents
43	7/11/06	Final Construction Documents
44	8/11/06	Final Construction Documents
45	9/11/06	Final Construction Documents
46	10/11/06	Final Construction Documents
47	11/11/06	Final Construction Documents
48	12/11/06	Final Construction Documents
49	1/11/07	Final Construction Documents
50	2/11/07	Final Construction Documents
51	3/11/07	Final Construction Documents
52	4/11/07	Final Construction Documents
53	5/11/07	Final Construction Documents
54	6/11/07	Final Construction Documents
55	7/11/07	Final Construction Documents
56	8/11/07	Final Construction Documents
57	9/11/07	Final Construction Documents
58	10/11/07	Final Construction Documents
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60	12/11/07	Final Construction Documents
61	1/11/08	Final Construction Documents
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64	4/11/08	Final Construction Documents
65	5/11/08	Final Construction Documents
66	6/11/08	Final Construction Documents
67	7/11/08	Final Construction Documents
68	8/11/08	Final Construction Documents
69	9/11/08	Final Construction Documents
70	10/11/08	Final Construction Documents
71	11/11/08	Final Construction Documents
72	12/11/08	Final Construction Documents
73	1/11/09	Final Construction Documents
74	2/11/09	Final Construction Documents
75	3/11/09	Final Construction Documents
76	4/11/09	Final Construction Documents
77	5/11/09	Final Construction Documents
78	6/11/09	Final Construction Documents
79	7/11/09	Final Construction Documents
80	8/11/09	Final Construction Documents
81	9/11/09	Final Construction Documents
82	10/11/09	Final Construction Documents
83	11/11/09	Final Construction Documents
84	12/11/09	Final Construction Documents
85	1/11/10	Final Construction Documents
86	2/11/10	Final Construction Documents
87	3/11/10	Final Construction Documents
88	4/11/10	Final Construction Documents
89	5/11/10	Final Construction Documents
90	6/11/10	Final Construction Documents
91	7/11/10	Final Construction Documents
92	8/11/10	Final Construction Documents
93	9/11/10	Final Construction Documents
94	10/11/10	Final Construction Documents
95	11/11/10	Final Construction Documents
96	12/11/10	Final Construction Documents
97	1/11/11	Final Construction Documents
98	2/11/11	Final Construction Documents
99	3/11/11	Final Construction Documents
100	4/11/11	Final Construction Documents

Wastewater Contributions from Expected Growth

Area	Population	Wastewater Flow (gpd)
IND	1,000	1,000,000
BWMELTB	1,000	1,000,000
BWMELTA	1,000	1,000,000
BEARSES	1,000	1,000,000
BWST1	1,000	1,000,000
CO7	1,000	1,000,000
H1	1,000	1,000,000
H3	1,000	1,000,000
CE1	1,000	1,000,000
CE2	1,000	1,000,000
CE3	1,000	1,000,000
CE4	1,000	1,000,000
CCCC	1,000	1,000,000

LEGEND

- GRAVITY SEWER
- FORCED SEWER
- PUMP STATION
- ZONING LINE
- MEDICAL SERVICES OVERLAY DISTRICT
- MARSH AREA
- EDGE OF WATER
- DIRT ROAD
- PAVED ROAD
- PARCEL LINE
- RAIL ROAD TRACK
- BUILDING

TOWN OF BARNSTABLE GEOGRAPHIC SYSTEMS UNIT



• B011: Planimetrics, topography, and vegetation were mapped to meet National Map Accuracy Standards at a scale of 1" = 100'.

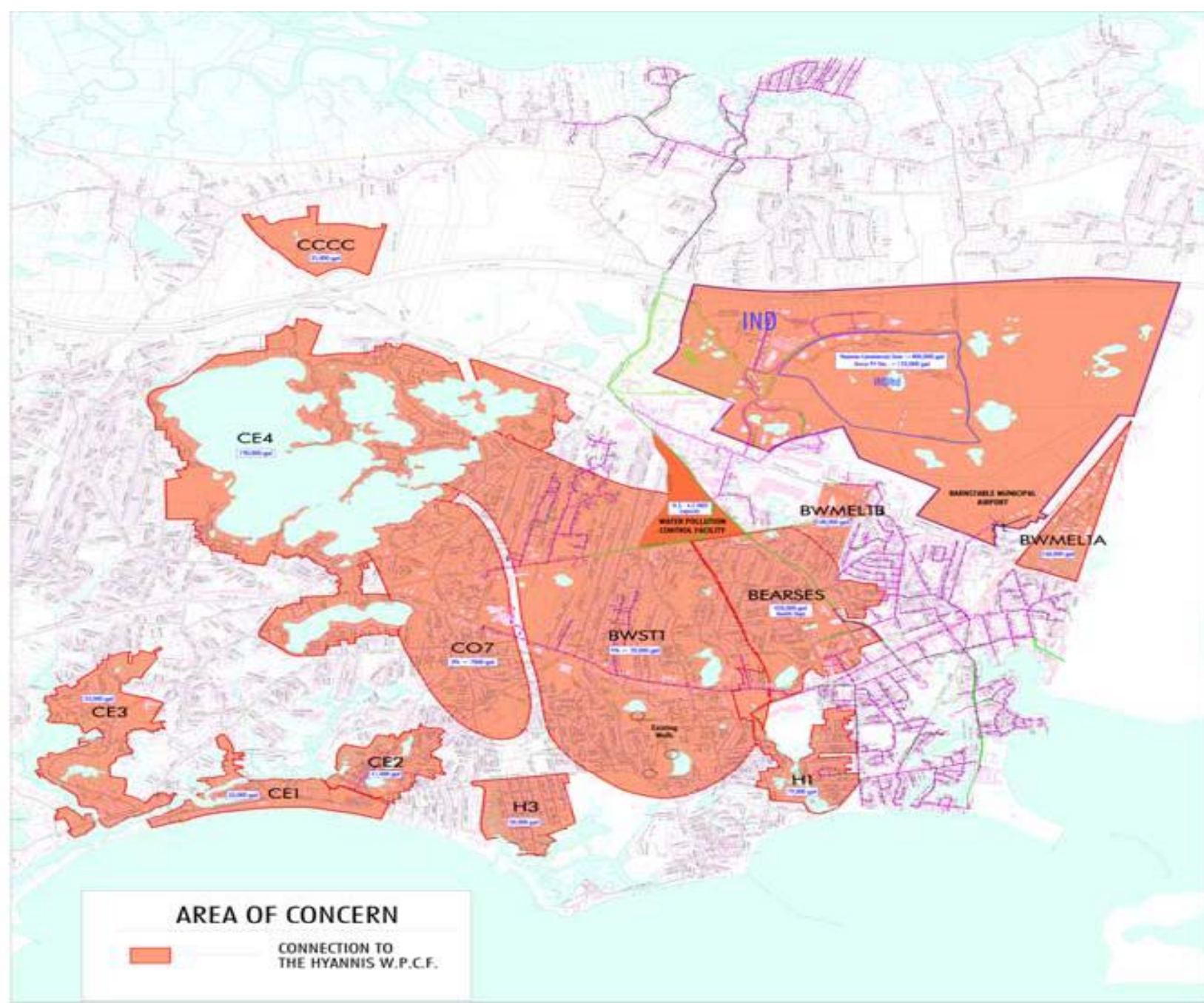
• B012: The parcel lines are only graphic representations of property boundaries. They are not true locations, and do not represent actual relationships to physical objects on the map.

SOURCE: Planimetrics (man-made features) were interpreted from 1995 aerial photographs by The Jones W. Sewell Company. Topography and vegetation were interpreted from 1989 aerial photographs by GSD Corporation. Planimetrics, topography, and vegetation were mapped to meet National Map Accuracy Standards at a scale of 1" = 100'. Parcel lines were digitized from FY2003 Town of Barnstable Assessor's tax maps.

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AREA OF CONCERN

- CONNECTION TO THE HYANNIS W.P.C.F.



Comprehensive Water Management Planning

- Stewart's Creek Areas of Concern
 - Documented Wastewater Problems from On-site Systems
 - High Groundwater (<10 ft)
 - Poor Soils
 - Distance to marsh
 - Set back from sidelines
 - Lot size (<0.3 acres)
- Alternatives evaluated to address area of concern
 - Single-unit Title 5 systems
 - Collection and treatment at the Hyannis Water Pollution Control Facility
 - Small treatment facilities
 - Multiple-unit systems
 - Advanced individual on-site systems

Comprehensive Water Management Planning

- Received approval from MEPA and the Cape Cod Commission in Oct 2007
 - Effluent discharge capacity was established at the Hyannis Water Pollution Control Facility of up to 4.2 MGD
 - This allowed us to proceed with sewer expansion program
 - Town Council had previously appropriated design funds for Stewart's Creek area sewer project in 2003
- Town of Barnstable Hyannis WPCF commenced the upgrade and expansion of the Hyannis facility 2008
- Construction funds were appropriated for the eastern and western sections of Stewart's Creek area
 - Appropriation Order 2009-096 \$3.9M
 - Appropriation Order 2010-017 for \$3.3M

Comprehensive Water Management Planning

- Received eligibility for subsidized loan from State on April 27, 2009 and updated July 31, 2009
 - Wastewater projects eligible for a 2% 20 year loan with an 8.9% principle subsidy from federal stimulus funds
 - Federal stimulus subsidy is a one time opportunity in 2009
 - Stewart's Creek area 8.9% principle subsidy would save \$633,600 in principal cost and the ½ market interest rate loan (2%) would save \$1.65M in interest cost. Assumed total cost of project to be \$7.2M

Stewart's Creek Project Area



Comprehensive Water Management Planning

- Status of project

- Submitted all required applications, plans and documents as per specified time line established by the Massachusetts DEP State Revolving Funds Program and ARRA requirements

- Received all approvals from Mass DEP required to date to proceed with the sewer expansion projects

- Estimated Schedule for Project

- Commence construction spring 2010

- Complete construction fall 2011