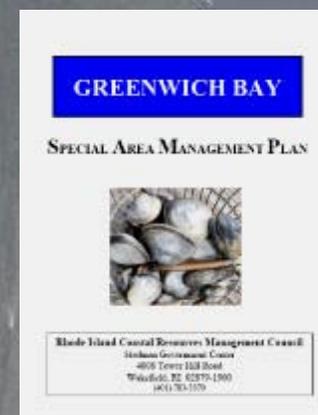


Greenwich Bay Special Area Management Plan Implementation Status Report

Coastal Resources Management Council
Semi-Monthly Meeting
December 11, 2007

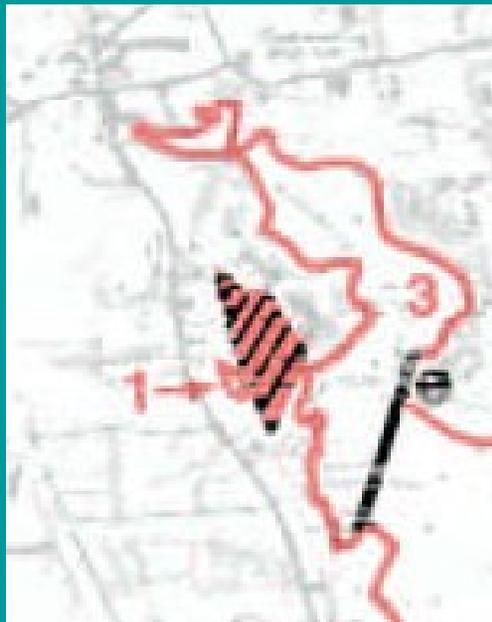


Primary concerns during development of the Greenwich Bay SAMP

- Degraded water quality (low dissolved oxygen)
- Shellfish resources and beach closures (fecal bacteria)
- High number of septic systems (many cesspools!)
- Marina expansion
- Public Access



Apponaug Cove water type changes (approved October 2004)

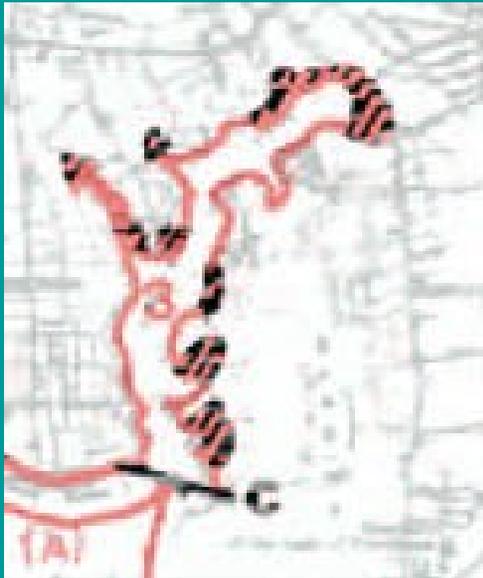


Original Classification
1987

Proposed Water Type Changes - Apponaug Cove



Warwick Cove water type changes (approved October 2004)



Original Classification
1987

Proposed Water Type Changes - Warwick Cove



Greenwich Bay Public Access Guide



Bridge Street



Division Street



Rocky Hollow Road



Nausauket Road

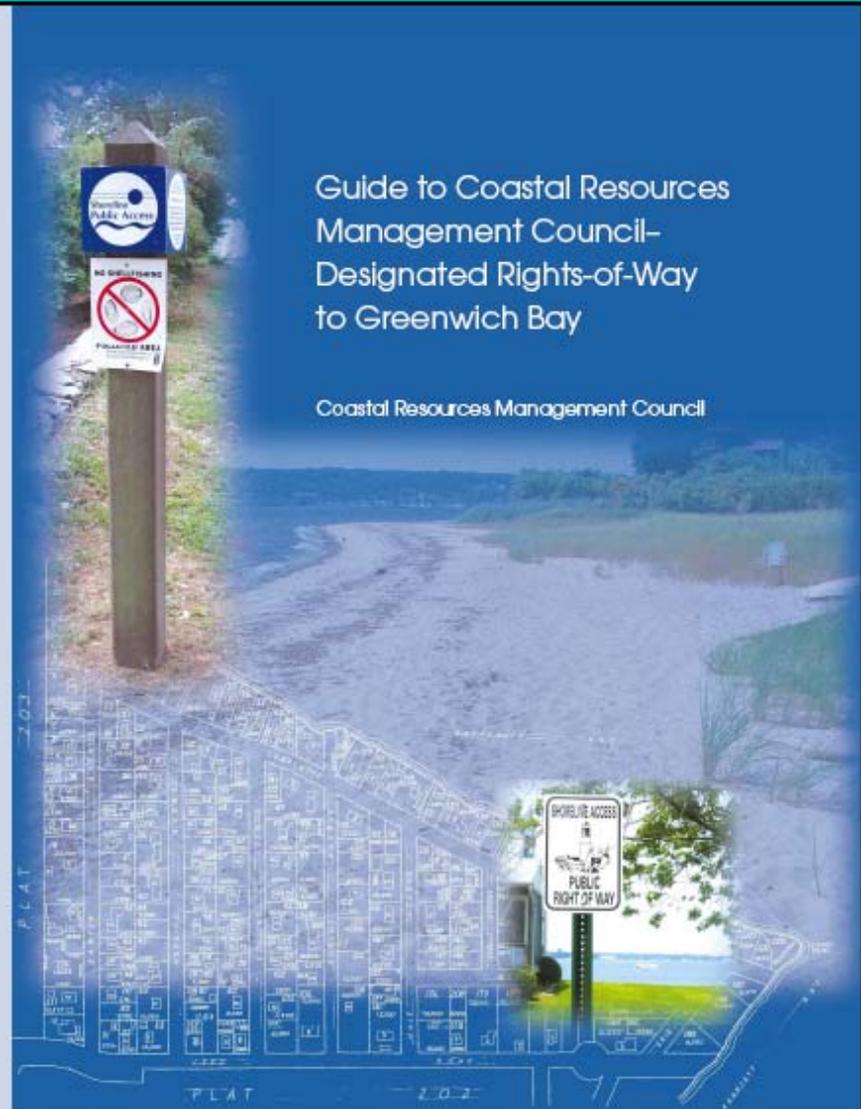
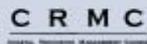


Sylvia Drive



This guide is designed to give the most complete information available regarding CRMC-designated rights-of-way to the shore of Greenwich Bay. Descriptive information and maps, where available, are provided for the sites listed in this guide.

For more information on public rights-of-way to the shore, visit the CRMC website at <http://www.crmc.ri.gov>.



Guide to Coastal Resources Management Council- Designated Rights-of-Way to Greenwich Bay

Coastal Resources Management Council

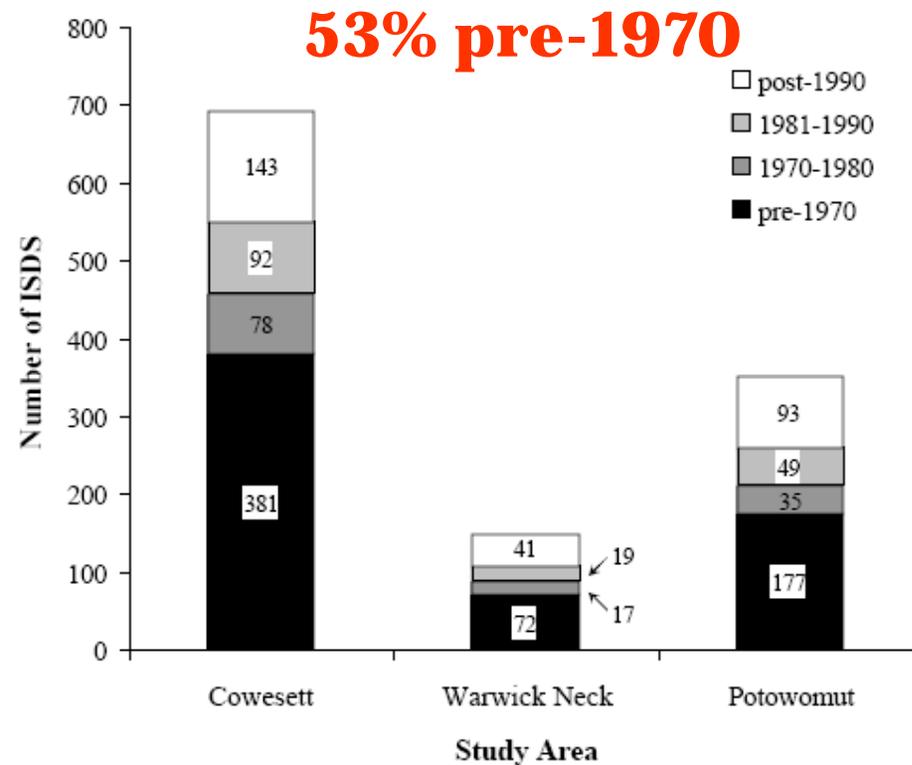
<http://www.crmc.ri.gov/pubs/index.html>

Essential Actions for Water Quality

Phase Out Cesspool Use

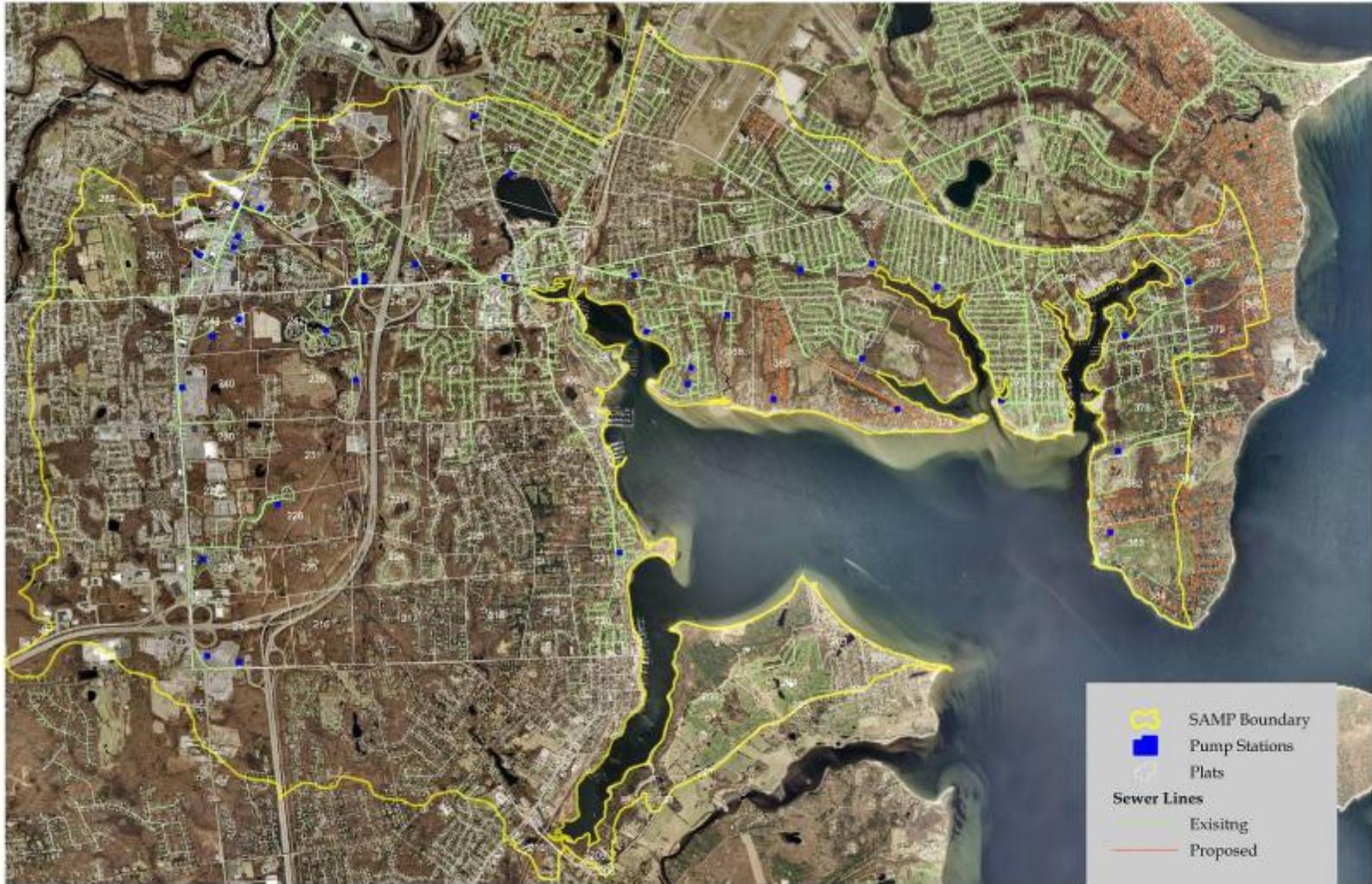
Status: Passage of the
Island Cesspool Act
(R.I.G.L. § 23-19.15)

Figure 12. Approximate age of ISDS in three Warwick neighborhoods without sanitary sewers¹



¹ Pre-1970 ISDS are potential cesspools.

Source: Sinnamon, 2004

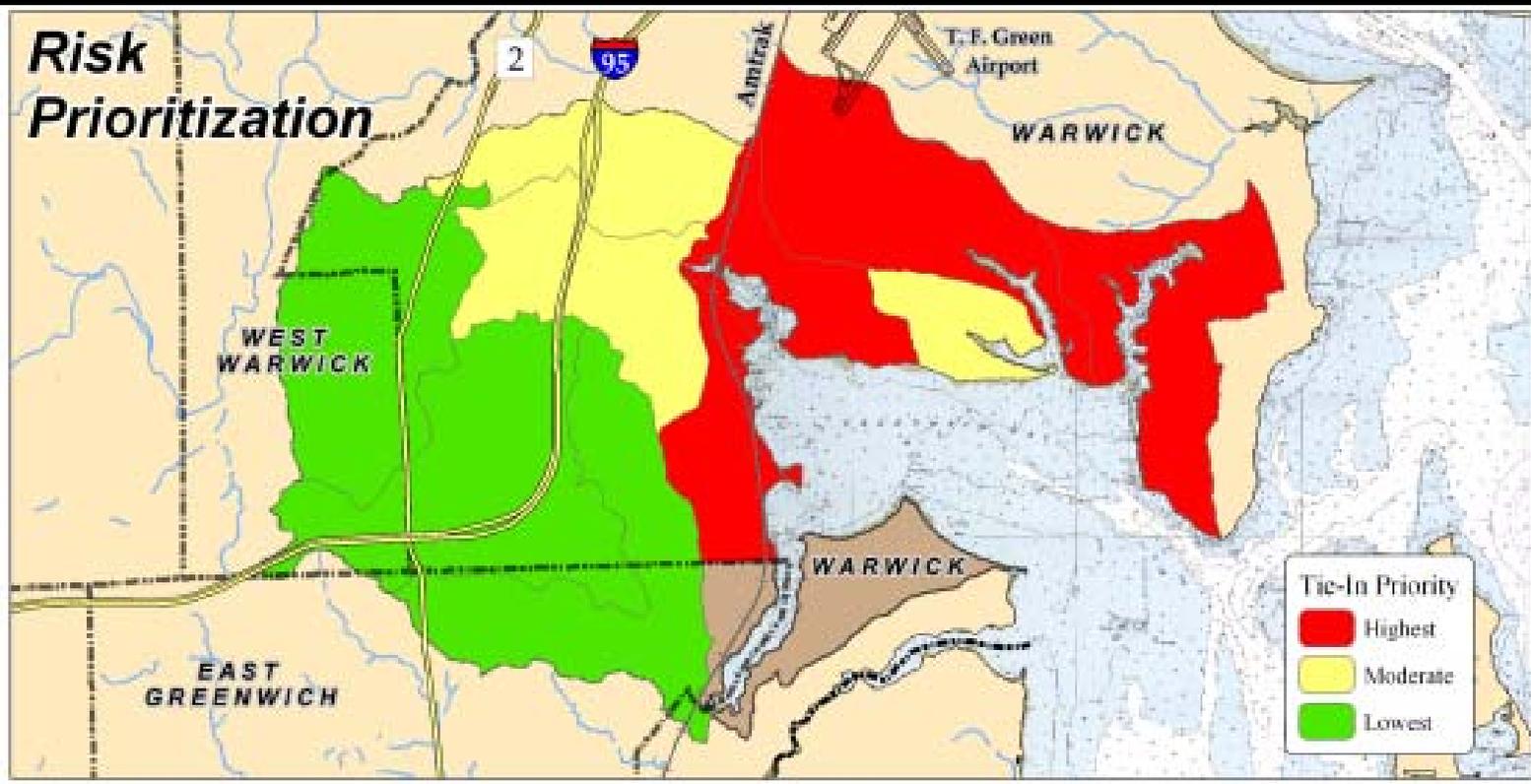


**Greenwich Bay SAMP
Sewer Map**



Warwick has spent > \$130 million to date

Risk Prioritization



Tie-In Priority

- Highest
- Moderate
- Lowest

Legend

- Greenwich Bay Watershed
- Municipal Boundary
- ~ Rivers
- Lakes & Ponds



This map depicts the current status and construction schedule for sewerage of Greenwich Bay as well as a Prioritization of Areas to be Sewered based on Lucht (2003)

Data courtesy of Rhode Island Geographic Information Systems (RIGIS) <http://www.edc.uri.edu/rigis> and J. Lucht, Providence Plan.



All data projected to Rhode Island State Plane Feet, NAD 1983, WGS 1984.

Produced February 4, 2005, URI Coastal Resources Center.



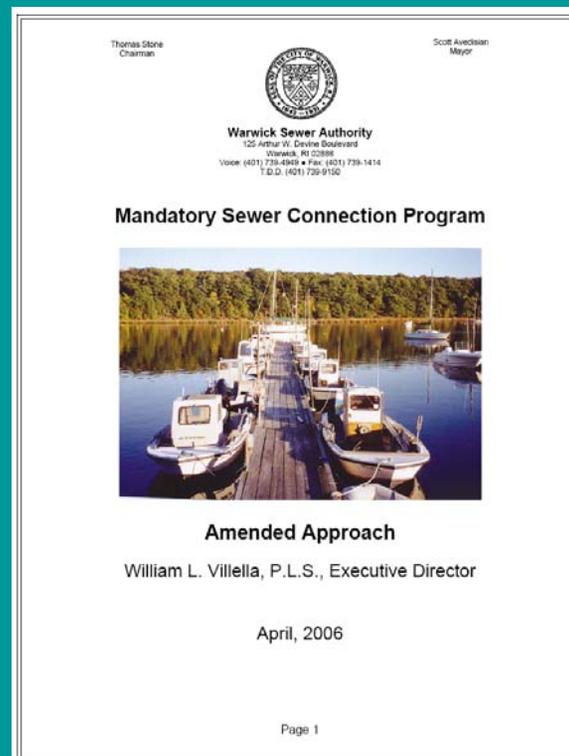
Source: Lucht, 2003

Essential Actions for Water Quality

Complete Sewer Connections

Status: Implemented as of January 2006. Need to address connect capable fee as an enforcement tool.

323 homes currently out of compliance!



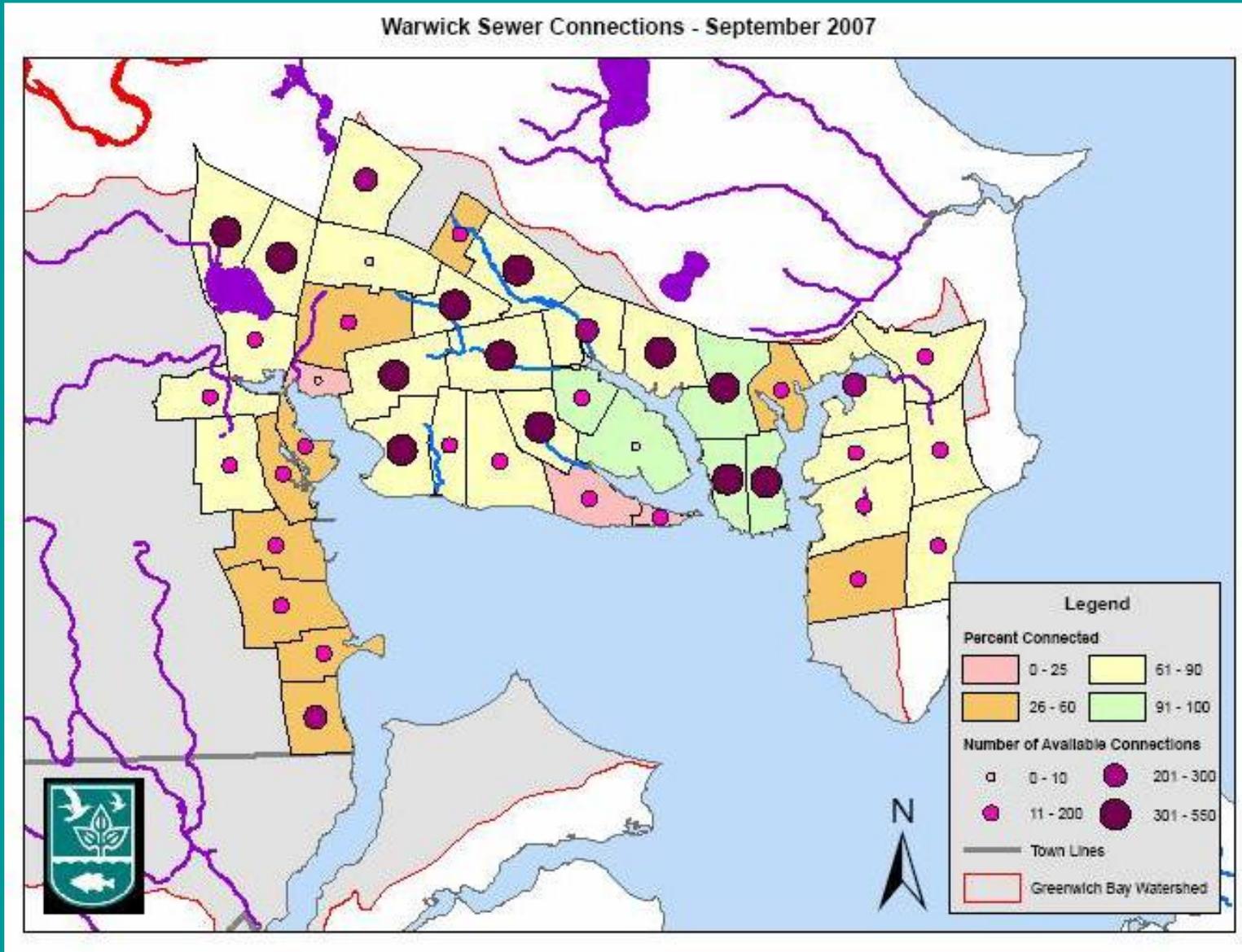
Warwick city-wide sewer connections

Year	2003	2004	2005	2006	2007
January	23	22	54	43	58
February	8	13	44	55	35
March	48	84	85	89	74
April	98	92	151	95	105
May	113	94	142	103	124
June	102	124	141	109	89
July	91	89	131	81	113
August	95	139	128	120	82
September	107	116	126	111	
October	105	131	98	157	
November	94	128	77	139	
December	72	81	73	115	
Total	956	1113	1250	1217	680

5216 septic systems have been abandoned and replaced with sewer line connections!

Source: Warwick Sewer Authority
September 2007 quarterly report

Overall Connection Rate = $5962/8051 = 74\%$



Essential Actions for Water Quality

Reduce nitrogen loading from the East Greenwich wastewater treatment facility in EG Cove

Status: Completed March 2006 – 5 mg/L average effluent concentration for nitrogen
Cost = \$8.1 million



Essential Actions for Water Quality

Complete Stormwater Management Plans

Status: In Progress – Phase II and Suburban Buffer & Low Impact Development (LID) Program

Stormwater is the primary source of fecal bacteria loading to Greenwich Bay!

Recent research indicates that urban stormwater infrastructure is under capacity by 35% due to climate change impact on rainfall depths and storm return frequency

Typical Low Impact Development (LID) Techniques



Bioretention area in
turnaround



Pervious
driveways



Grass swale



Rain gardens



Collins Ave.

Hopkins Ave.

Charlotte Drive



Structurally reinforced shoreline

High percentage structural lot coverage

Small lots

No natural shoreline vegetation

Require a buffer here?

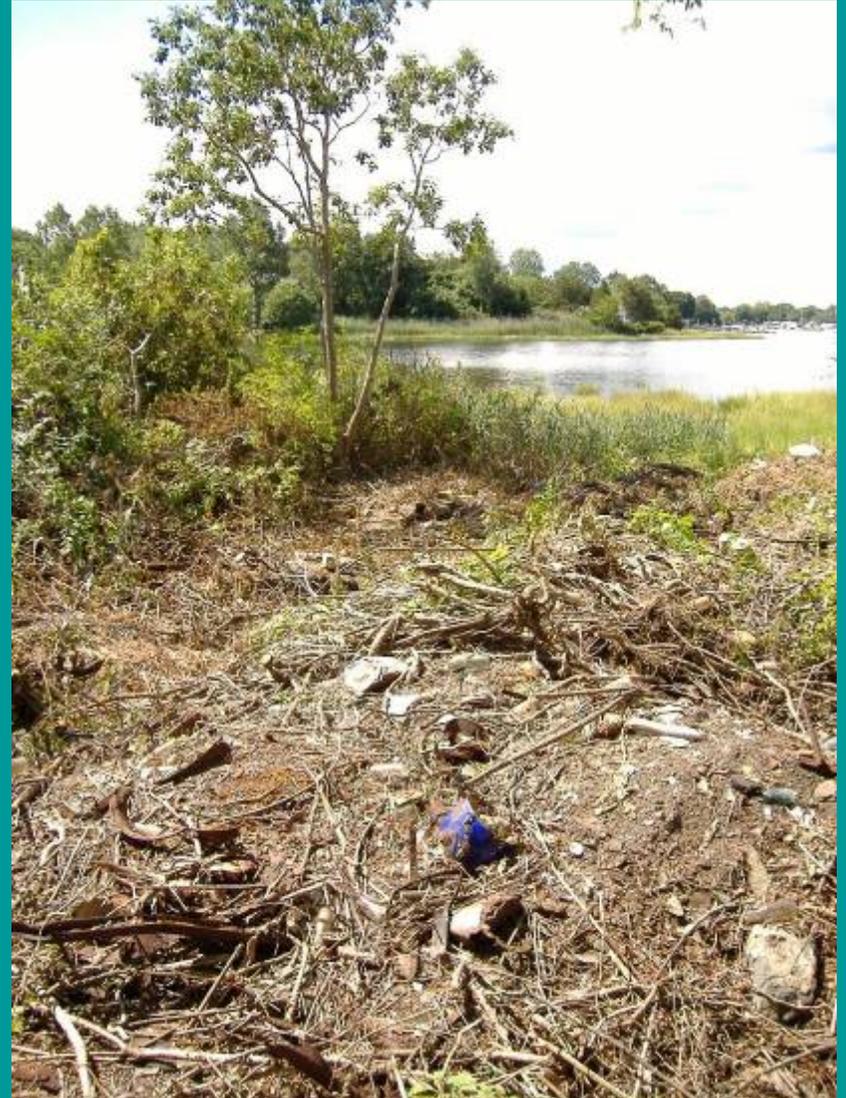


Potowomut shoreline

Warwick Cove Coastal Wetland Restoration



Warwick Cove Coastal Wetland Restoration



Warwick Cove Coastal Wetland Restoration



Warwick Cove Coastal Wetland Restoration



Warwick Cove Coastal Wetland Restoration



Warwick Cove Coastal Wetland Restoration





Essential Actions for Water Quality
Enhance Water Quality Monitoring
Status: Ongoing – more funding needed;
convene Greenwich Bay researcher meeting

Essential Actions for Water Quality

Strengthen Clean Marina and Boating Program

Status: February 2007 adoption of Rhode Island Clean Marina Program



Harbor Management Plan Status:

East Greenwich – pending final approval

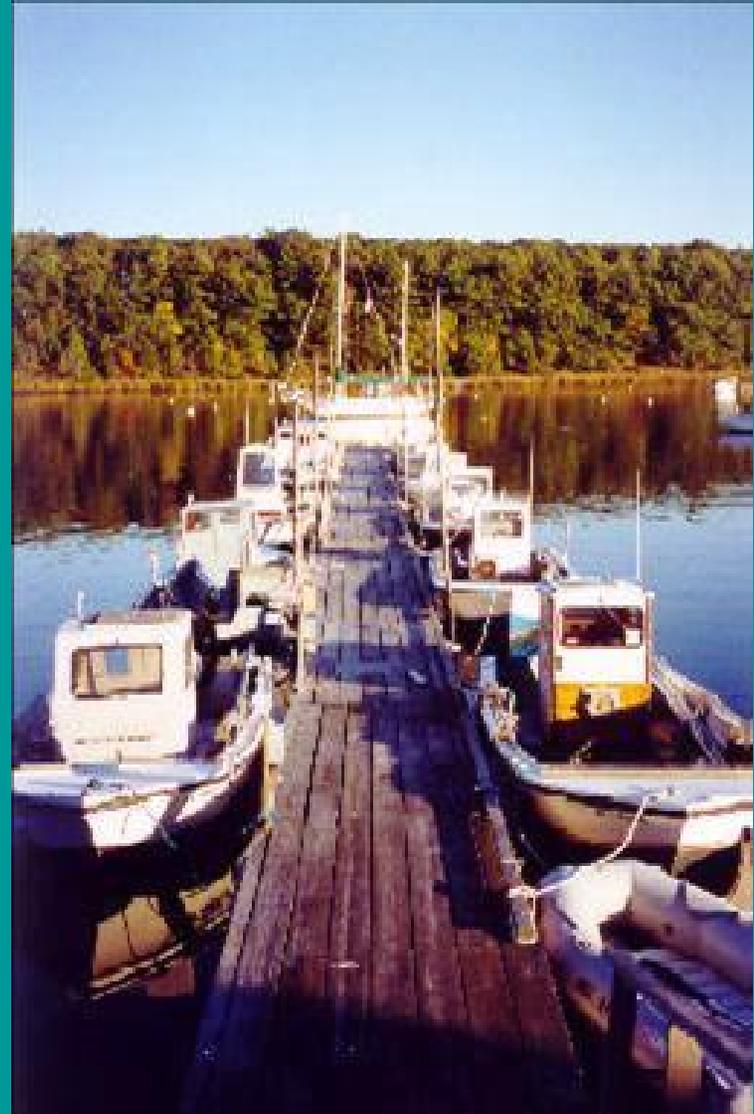
Warwick – pending final approval



Grandfather existing Greenwich Bay Quahog Docks

Greenwich Bay SAMP 680.1A Policy

1. The CRMC will identify and grandfather existing quahog facilities on Greenwich Cove that have been in existence since 2000.



Greenwich Bay Public Forum

October 25, 2007

Warwick City Hall

- Report & discussion of bay conditions and emerging issues
- Highlight essential action progress that support Greenwich Bay SAMP goals

Citizens Advisory Committee

November 29, 2007

Buttonwoods Community Center

- Suburban Buffer/LID presentation
- Discussion of draft SAMP amendments for lots adjacent to critical areas

Priority Action Status

Greenwich Bay

SAMP Chapter 1 – Goals and Objectives

(118 priority actions)

Primary Goals	Priority Action Status			% C and IP
	Completed	In Progress	Need Action	
120.1 - Coordination and Implementation	4	5	5	64
120.2 - Water Quality Improvement	4	19	7	77
120.3 - Fish & Wildlife Improvement	1	13	6	70
120.4 - Recreational Opportunity Development	2	6	12	40
120.5 - Water-dependant Economic Development	3	16	15	56
Overall Progress	14	59	45	62%