2007

Taunton River Watershed Study Presentation - part 1 (June 13, 2007 Public Meeting)

Horsley Witten Group, Inc.

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Taunton River Watershed Study

Horsley Witten Group
Weston & Sampson
Geosyntec
Steering Committee

The Steering Committee for the Taunton River Watershed Study is comprised of representatives from the following agencies and organizations:

Edward Minnock, Ph.D.  Bridgewater State College, Office of External Affairs
Dr. Kevin Curry  Bridgewater State College, Watershed Access Laboratory
Alison Bowden  The Nature Conservancy
Mike Gildesgame  MA Department of Conservation and Recreation
Pamela Truesdale  MA Department of Environmental Protection Southeast Region
John Clarkson  MA Executive Office of Energy and Environmental Affairs
Bill Napolitano  Southeastern Regional Planning and Economic Development District
Jim Watson  Old Colony Planning Council
Welcome

1. Project Overview: Past, Present, Future
2. Progress Report: Data Collection & Water Budget
4. Questions & Answers
2006 Taunton River Watershed Five-Year Action Plan
Five-Year Action Plan Goals

- Synthesize and Prioritize Existing Information From a Variety of Sources
- Promote Watershed-wide Planning, Cooperation and Consistency
- Develop a Five Year Action Plan That is Relevant, Focused and Achievable
Action Planning Process

Taunton River Watershed
5-Year Action Plan
Public Forums

February 24, 2006 (kickoff meeting)
March 10, 2006
March 24, 2006
April 7, 2006
Watershed Planning Categories

Priority actions for the Taunton River watershed for:

A. Water Quality Improvement & Protection

B. Wildlife Habitat and Ecology Protection
   (including Water Quantity Protection)

C. Recreation and Access

D. Open Space, Land Use and Sustainable Development

E. Public Outreach and Education
The 2006 Taunton River Watershed Five-Year Action Plan
Project Overview
Taunton River Watershed
An Overview

1. Second largest watershed in MA
2. 530 square miles
3. 42 communities
4. 31% developed
5. 43% potential for development
Taunton River Watershed Profile

2. Relatively flat: 21 feet elevation drop over 40 miles in length.
3. 94 square miles of wetlands
4. 12,883 acres of lakes & ponds.
5. 27 habitat types
6. 16,800-acre Hockomock Swamp.

Reference: GeoSyntec, 2006
Taunton River Watershed
Land Development Patterns
1985 - 2000

1. Population increase: 13%
2. Land area consumed for development: 22%
3. 31% currently developed
4. 43% potential for development
Taunton River Watershed Water Supply Profile

1. 27 of 43 communities served by public water systems
2. Average per capita residential water use = 62 gal/day (compared to a state guideline of 65 gal/day)
3. Total public water pumped = 74.7 million gal/day (MGD)
4. Peak month demand = 109 MGD
5. Peak = 46% increase (+34.3 MGD)
6. Regulated withdrawals (Water Management Act) = 97.1 MGD

Reference: Water Assets Study, MA EOEA, 2006
Issues:

Hydrology: low flows & flooding
Water Quality: nitrogen, pathogens & other
Ecology: wetlands & other habitats
The Way Some Scientists Talk
Impacts of Low Flow:

- Wetlands dry up
- Wetland functions diminished
- Invasive upland plants
- Foot traffic in sensitive areas (compaction)

Photo courtesy of U.S.G.S.
Taunton River
Status: Flow (Quantity)

1. 50% of streams “medium” stress
2. 10% of streams “high” stress
3. Remainder unassessed (lack of data)
Taunton River Status: Water Quality

Aquatic Life Use - Rivers, Estuaries and Lakes

Source: DEP 2005
Taunton River Status: Water Quality

Primary and Secondary Contact Recreational uses - Rivers, Estuaries and Lakes

Source: DEP 2005
THE CAUSES!

Numerous incremental decisions

.............
THE CAUSES!

Numerous incremental decisions
.............each one well-intended
THE CAUSES!

Numerous incremental decisions
.............each one well-intended
= cumulative impacts
Paths of Water Flow Within Watershed

1 - Overland Flow  
2 - Ground Water Flow
TYPE 1 WITHDRAWALS
TYPE 2 WITHDRAWALS

Horsley Witten Group
Water Cycle Diagram

**PRE DEVELOPMENT CONDITIONS**
- Precipitation
- Evaporation
- Runoff
- Infiltration

**POST DEVELOPMENT CONDITIONS**
- Precipitation
- Evaporation
- Runoff
- Infiltration
Water Quality/Habitat Degradation
Septic Systems and Pollutant Loading
(nitrogen, phosphorus, viruses, bacteria, pharmaceuticals, nitrosamines…)

Av. N = 35-40 mg/l
On-Site Septic Hydraulic Failure
Atmospheric Deposition

Pollutants carried away by wind and traffic

Animal Wastes

Pollutants emitted from motor vehicles

Runoff from adjacent lands

Litter Deposits

Failed Septic System

Stormwater Overflow Pipe to Discharge Area

Pollutants emitted from motor vehicles

Runoff from adjacent lands
SUMMARY OF STORMWATER RUNOFF POLLUTANT EFFECTS

- Sediment
- Thermal Stress
- Nutrients
- Oxygen-Demanding Organics
- Toxic Substances
- Pathogens
- Stream Discharge
Taunton River Watershed Study - Phase I
Scope of Work

1. Project Management
2. Public Participation/Outreach
3. Analysis:
   1. Data Collection
   2. Water Budget Analysis
   3. GIS Analysis
   4. Smart Growth Initiatives
4. Outline for Watershed Action Plan
Taunton River Watershed Comprehensive Management Plan Project
Tentative Project Meeting and Event Dates

TASK 1
Steering Committee Meetings (to be held at Bridgewater State College)
• Thursday, April 19, 2007 (8:30–10:30 am)*
• Thursday, September 13, 2007 (8:30–10:30 am)
• Thursday, January 10, 2008 (8:30–10:30 am)
• Thursday, May 8, 2008 (8:30–10:30 am)
* Phase II Visioning Session

TASK 2B
Public Outreach Kick-off Meeting (location to be determined)
• Wednesday, June 13, 2007 (4-7 pm)

Stakeholder Meetings (to be held throughout the watershed)
• Monday, November 5, 2007 (4-7 pm)
• Wednesday, November 7, 2007 (4-7 pm)
• Monday, November 12, 2007 (4-7 pm)
• Wednesday, November 14, 2007 (4-7 pm)

Issues Charrettes (possibly held at Bridgewater State College)
• Wednesday, April 2, 2008 (4-7 pm)
• Wednesday, April 9, 2008 (4-7 pm)

Watershed Event (location to be determined)
• Saturday, September 15, 2007 (daytime)
Welcome

We need your help in developing an effective plan to protect and restore the Taunton River as a source of our drinking water while maintaining the vital environmental and recreational values we all treasure.

As a resident, business, or agency within the Taunton River Watershed, your interests, insights and information are important to the development of a new and exciting Taunton River Watershed Study. The Taunton River Watershed Steering Committee would like to introduce our project and invite you to participate in a number of upcoming watershed activities where you can learn more about the watershed and provide input and feedback to help guide the planning process. The study will encompass all 42 communities and over 560 square miles of the Taunton River watershed, the second largest watershed in MA, and we hope to get as many of you involved as possible.

http://www.horsleywitten.com/tauntonwatershed/