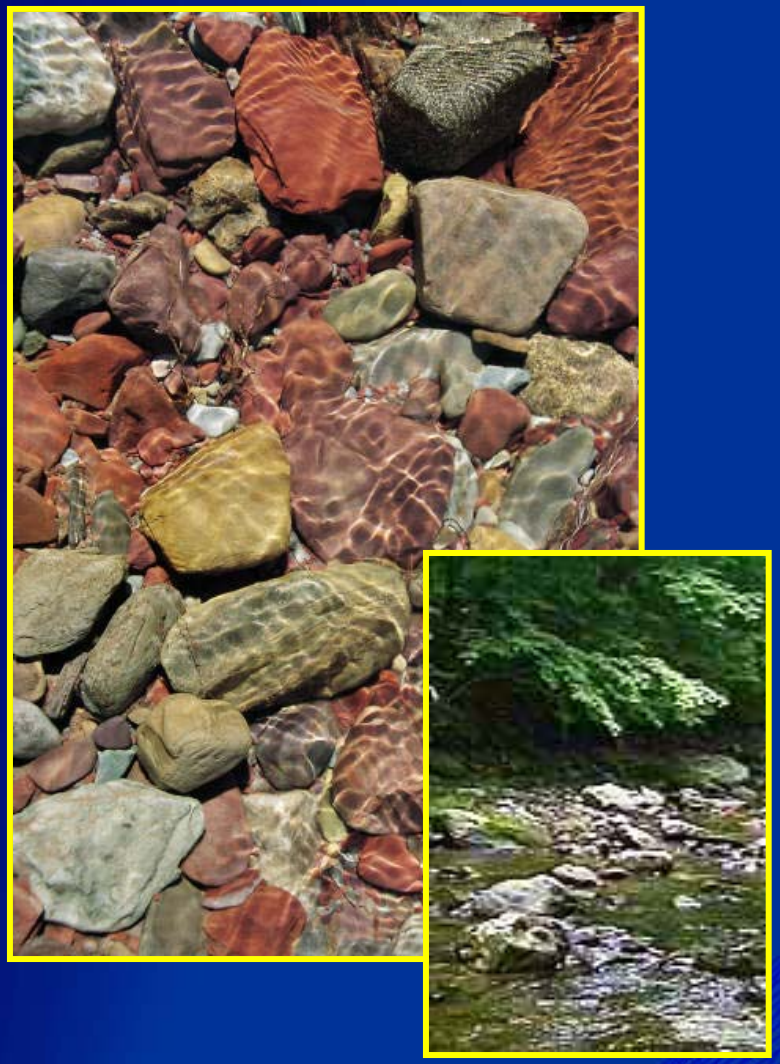
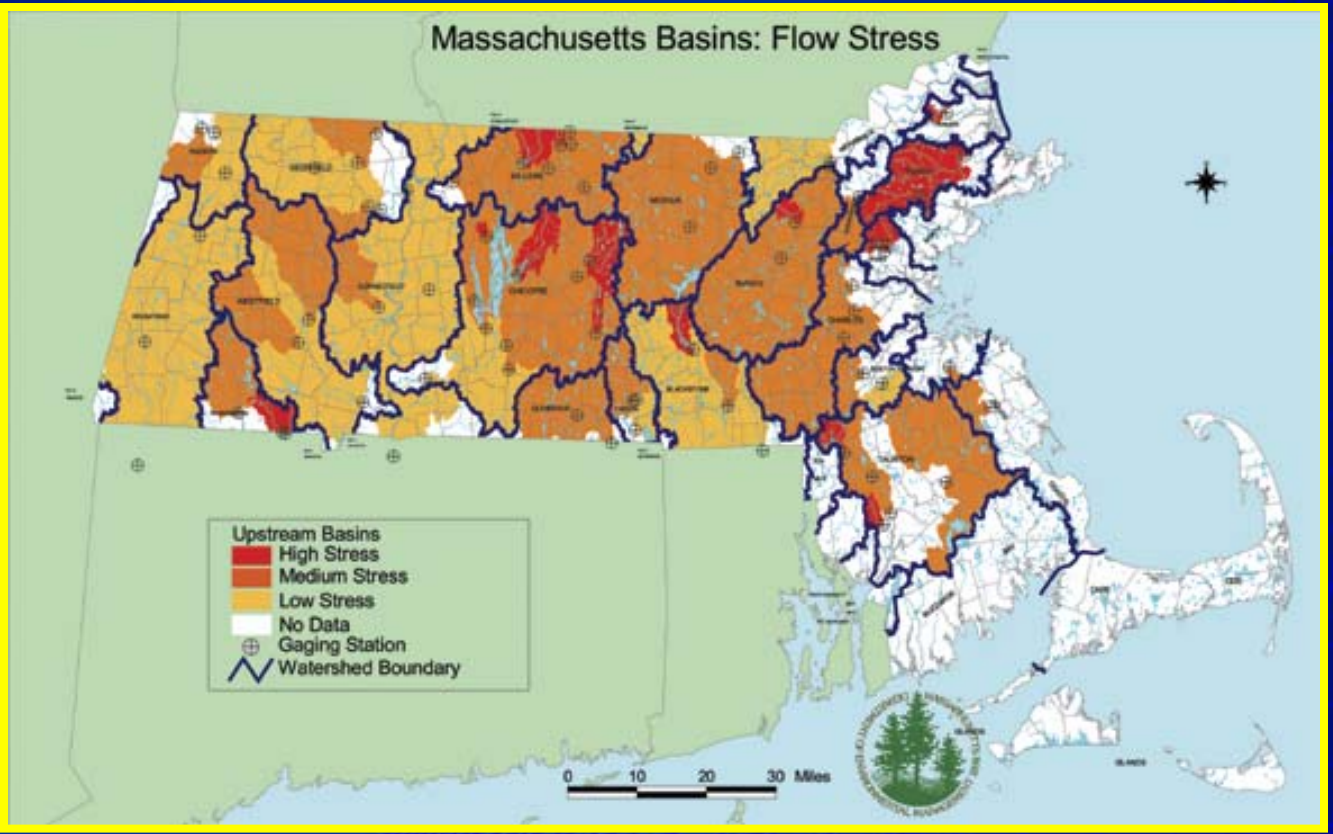
The Massachusetts Reclaimed Water Program

Experience and New Initiatives



Low flow in our rivers and streams

Stressed Basins



National Water Use

- 32% agricultural, recreational, commercial, and industrial use
- 28% toilet flushing
- 23% bathing
- 14% for laundry and dishwashing
- 3% drinking and cooking

Reclaimed Water Use Goals

- Reduce stress on over-used water resource areas
- Provide a safe and affordable water source for uses other than directly potable
- Increase public awareness and promote acceptance
- Promote advancement of I/A technology

Massachusetts Regulatory Approach

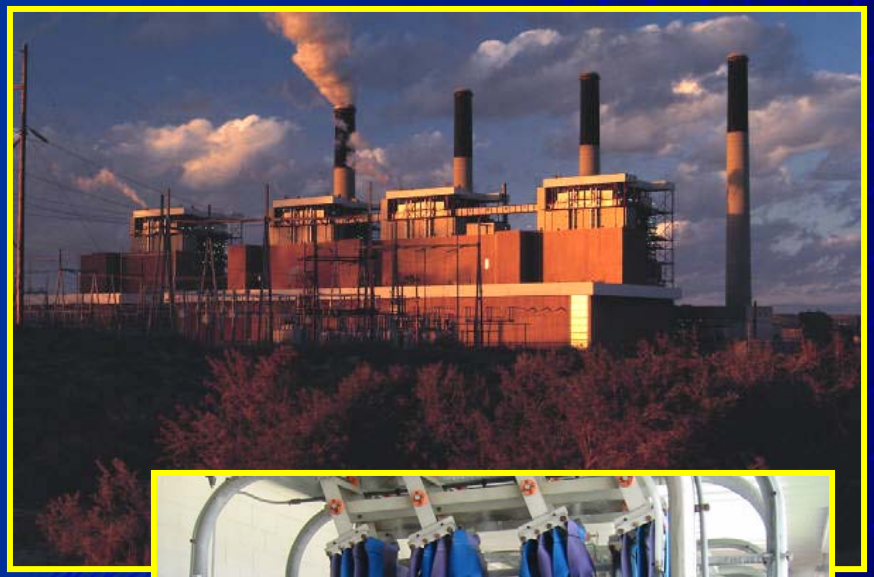
- Initial guidelines developed in 1999
- Hybrid of other state programs & requirements
- Rigorous water quality criteria
- Best Management Practices (BMPs)
- Enforceable contractual agreements
- Public awareness

Reclaimed Water: Allowable Uses

- Golf courses – spray irrigation
- Landscaping – nurseries
- Toilet flushing
- Artificially recharging aquifers

Pilot Program

- Evaluate uses not specifically listed in guideline
  - Drip irrigation
  - Powerplant process and cooling water
  - Automated car wash



Gillette
STADIUM
HOME OF THE NEW ENGLAND PATRIOTS

WRENTHAM VILLAGE
WRENTHAM VILLAGE
OFF 5TH
OFF 5TH

Treatment Plant Criteria

- Must meet specific water quality criteria/monitoring
- Must have permitted alternative discharge site for golf course and landscaping use
- Must have Class 1 reliability and redundancy
- Must have contractual agreement

Representative Standards for Reclaimed Water

Land Use	Turbidity (NTU)	Fecal Coliform/100 ml
Urban Reuse	<2	Median ND*, max 14-7 day sample
Toilet Flushing	<5	Max 100
Aquifer recharge	<2 <5	Median ND*, max 14-7 day sample Max 200

ND* = non-detectable

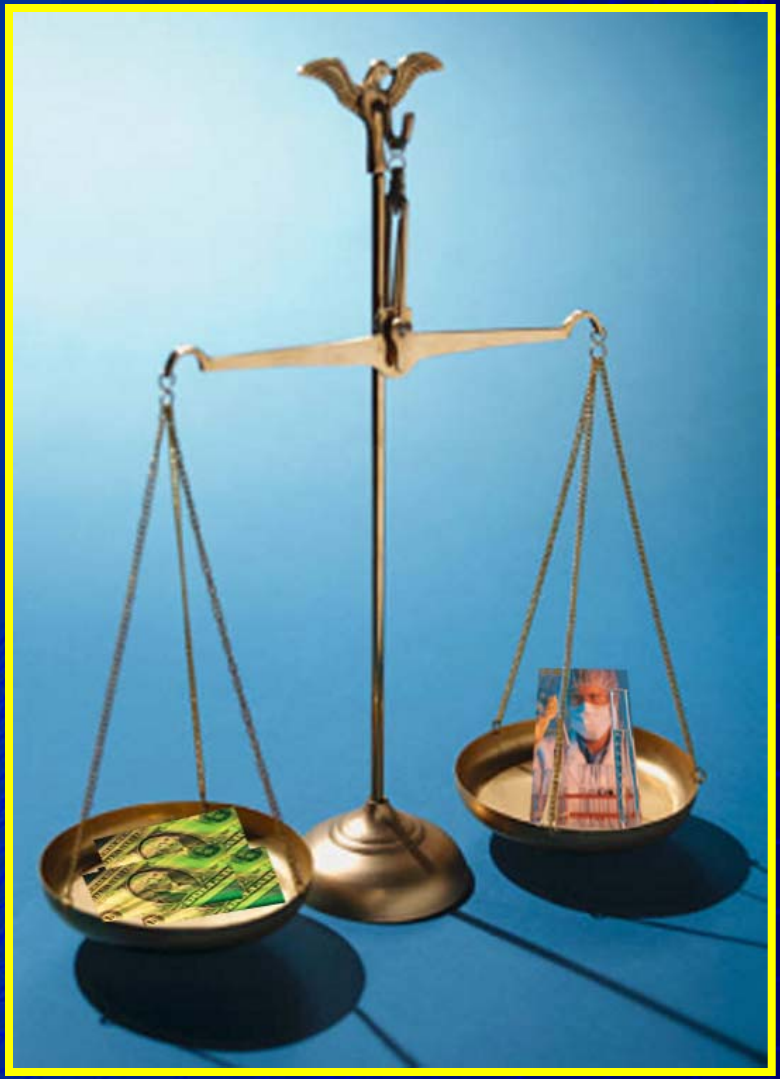
Artificial Aquifer Recharge

- Groundwater discharge into an approved Zone II is considered reuse
- Zone II boundary alteration
- Time of travel evaluation – treated water quality criteria
- Zone II Nitrogen Loading Model
- Monitoring of groundwater

DO NOT DRINK

Challenges

- Balancing Act
  - Cost – WWTP & Monitoring
  - Public Health
- Public Perception
- Public apathy
- Victim of our own technology
  - Analysis of emerging pollutants



New Program

- MassDEP developing new regulations
  - 2003: Study by CH2M HILL
  - 2004: EPA Water Reuse Guidelines
  - 2005: Task force
  - Our Experience

MassDEP Task Force

- Local officials
- Consultants
- Environmental groups
- Industry representatives
- MassDEP personnel

Proposed New Uses

- Irrigation of fields, playgrounds, and ballparks
- Residential irrigation
- Crop irrigation
- Powerplants
- Industrial Uses

Schedule

- Task force meetings
- Draft regulations by summer 2006

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http://www.mass.gov/dep/water/wastewat.htm