Town of Amherst Water System & SWMI

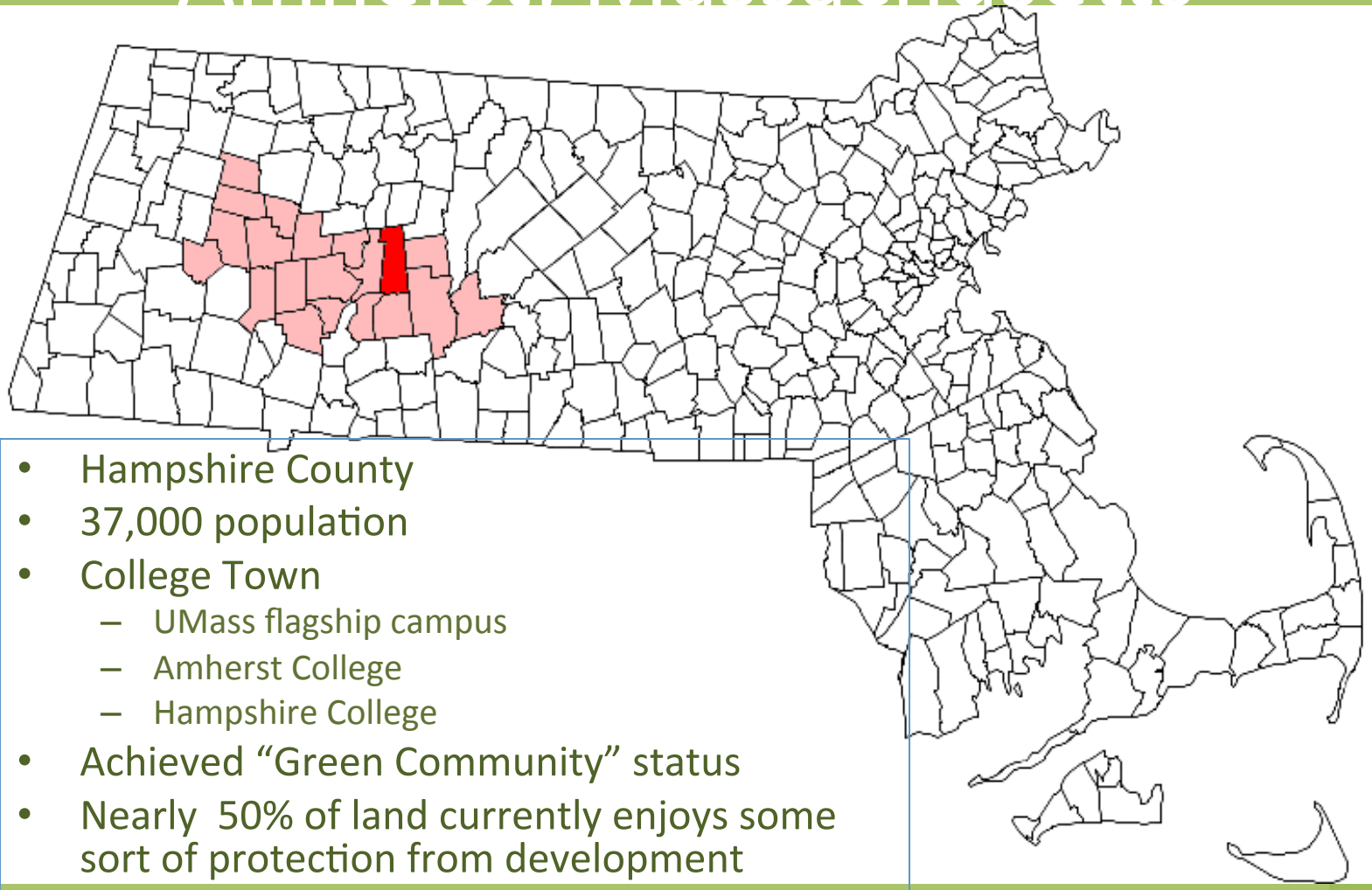
John Musante, Town Manager

Navigating Sustainable Water Management Regulations

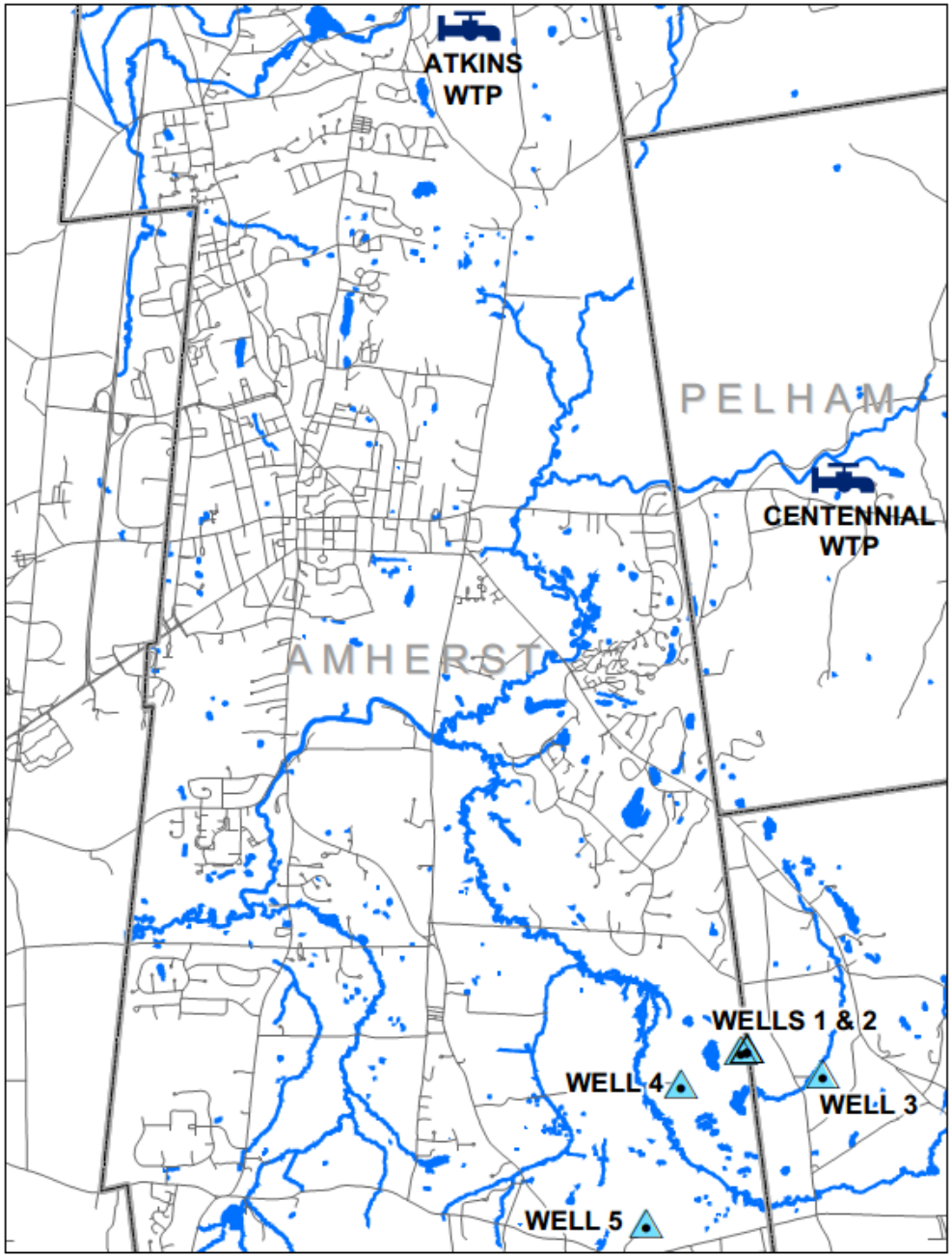
Massachusetts Municipal Association Annual Meeting

January 25, 2013

Amherst, Massachusetts



- Hampshire County
- 37,000 population
- College Town
  - UMass flagship campus
  - Amherst College
  - Hampshire College
- Achieved “Green Community” status
- Nearly 50% of land currently enjoys some sort of protection from development



Our Water System

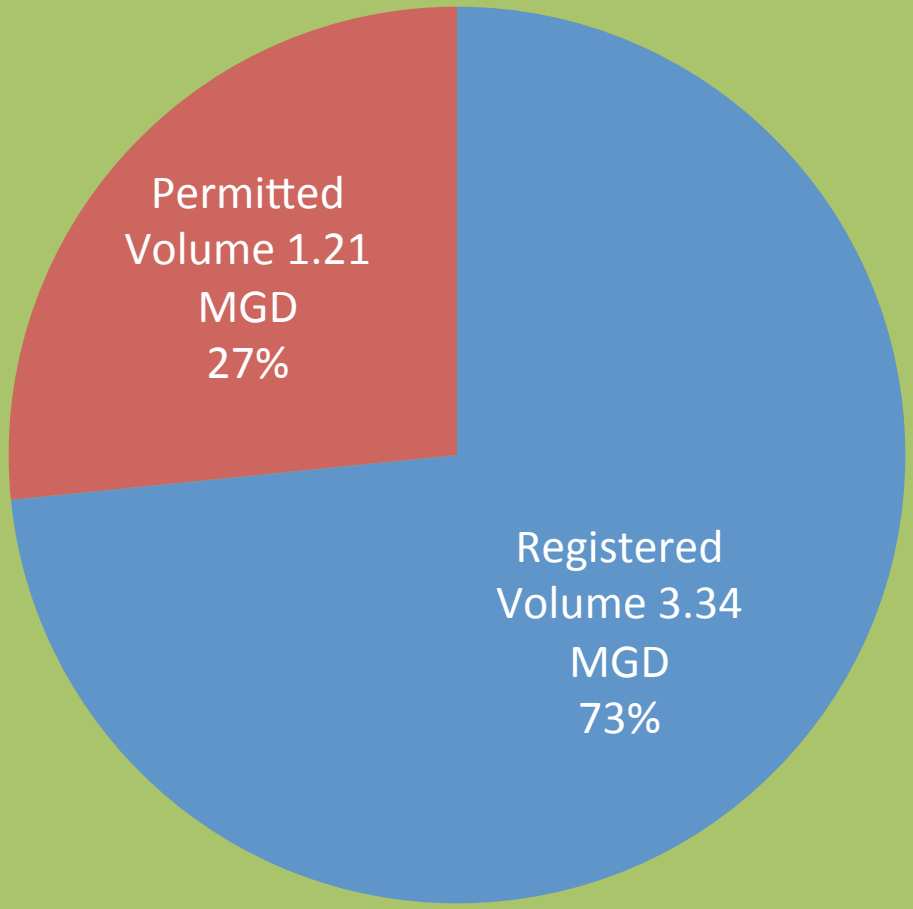
Currently average 3 MGD, annually

Sources

-Surface Water
- Atkins Water Treatment Plant (WTP)
- Centennial WTP

-Groundwater
- Well No. 1
- Well No. 2
- Well No. 3
- Well No. 4
- Well No. 5
- Well No. 6 (not used)

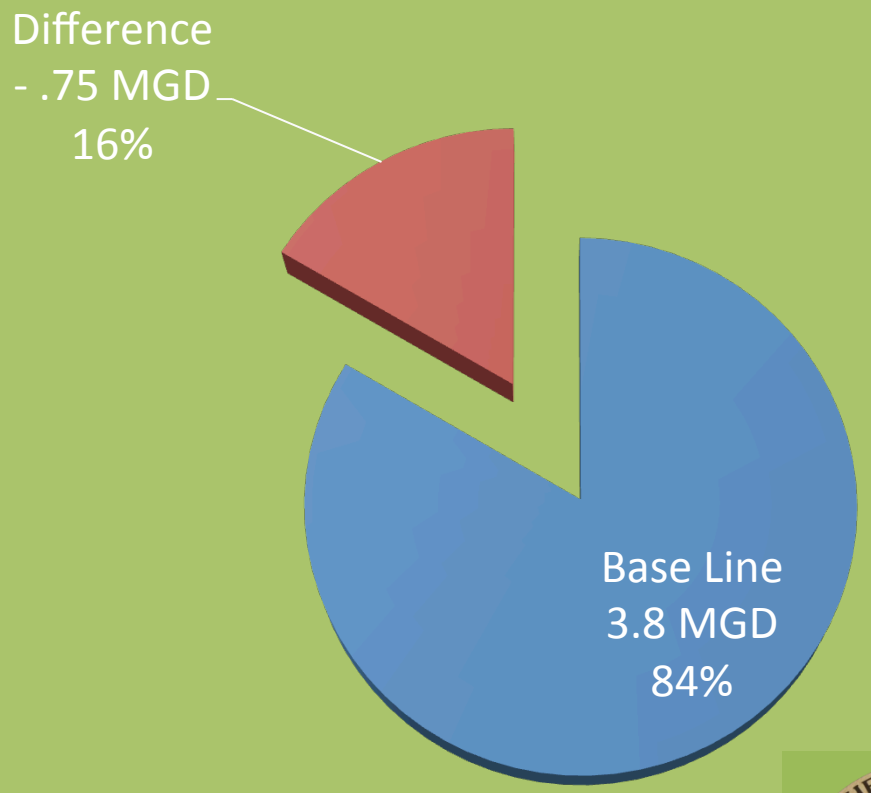
Current Authorized Water Withdrawal Volume 4.55 MGD



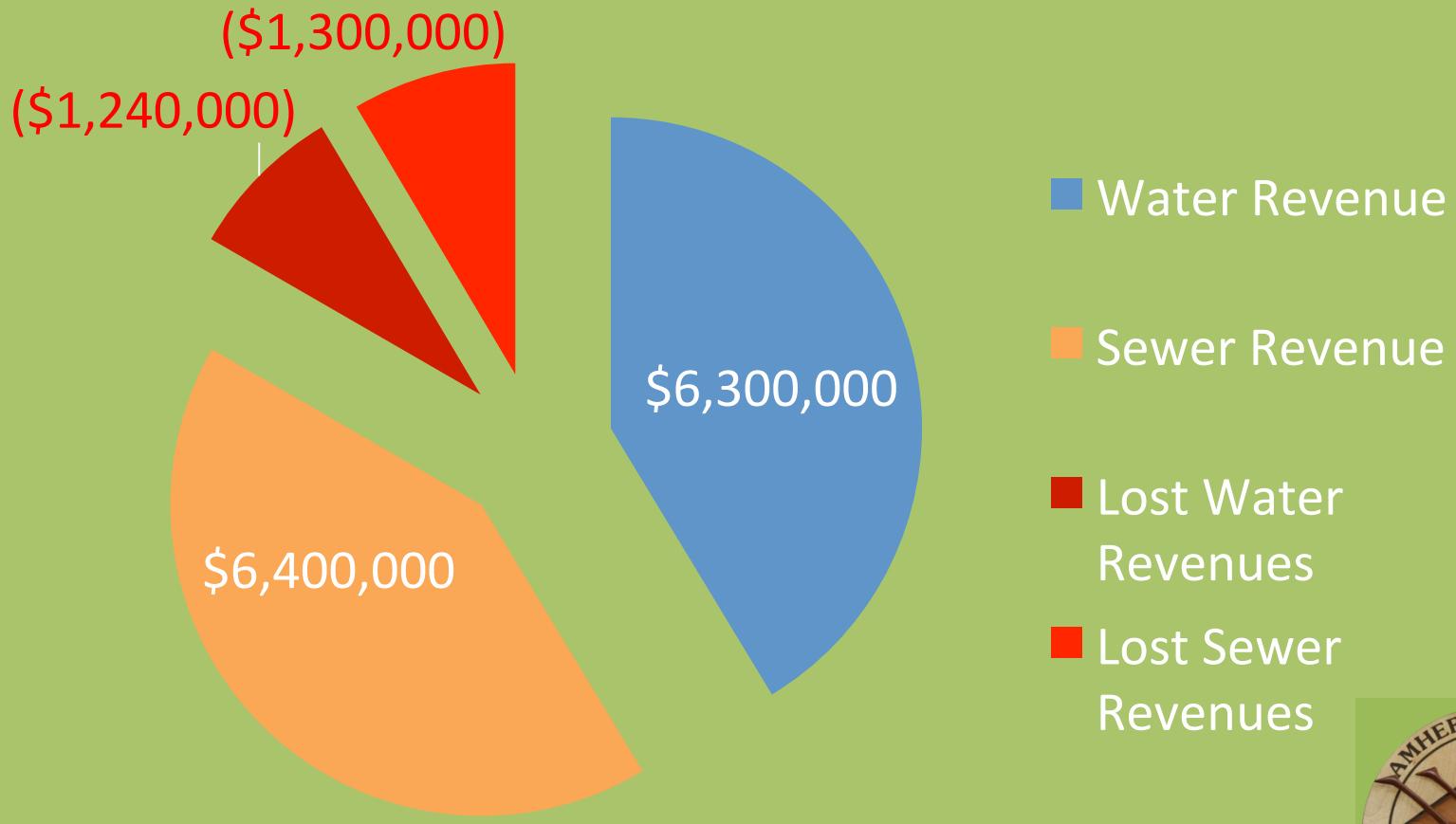
Proposed Impact from SWMI Framework

-SWMI will reduce our allocated withdrawal to 3.8 MGD

- A reduction of .75 MGD



Lost Revenue Capacity



To Regain .75 MGD Capacity

- Will need to do mitigations and offsets such as:
  - ✓Stormwater bylaw
  - ✓Low flow toilets, shower heads, faucets
  - ✓Smart dishwashers and washing machines
  - ✓Roof leader disconnects
  - ✓Infiltration & Inflow improvements (DPW has been reducing I&I for last 20 years)
  - ✓Water Reuse facility (expand existing system)

Based on SWMI Phase I Report

Capital Cost for Mitigations and Offsets

- Preliminary Estimate based on SWMI Phase I Report that averages cost per gallon of mitigation options.
  - Total Capital Cost averages $2.8 million for Town of Amherst
  - Equates to cost of $3.70/gallon

    One gallon of bottled water is $1.00
- Phase II Report has re-evaluated values of mitigation and offset credits. This will increase costs.
  - For example, cost impacts for water reuse facilities will be much higher…
    - Shrewsbury : $14 M for 0.3 MGD facility
    - UMass estimated costs $3.6 M for 0.12 MGD facility

Permitting Costs

- Minimization plan and demand management plan
  - Hire a consultant minimum $100,000
- Mitigation plan
  - Hire a consultant minimum $50,000
- Site specific study
  - $50,000- $100,000 per site?
  - Possibly 3 sites
- Consultation process costs (6-12 months of consultant work)
  - $????

Permit Implementation Costs

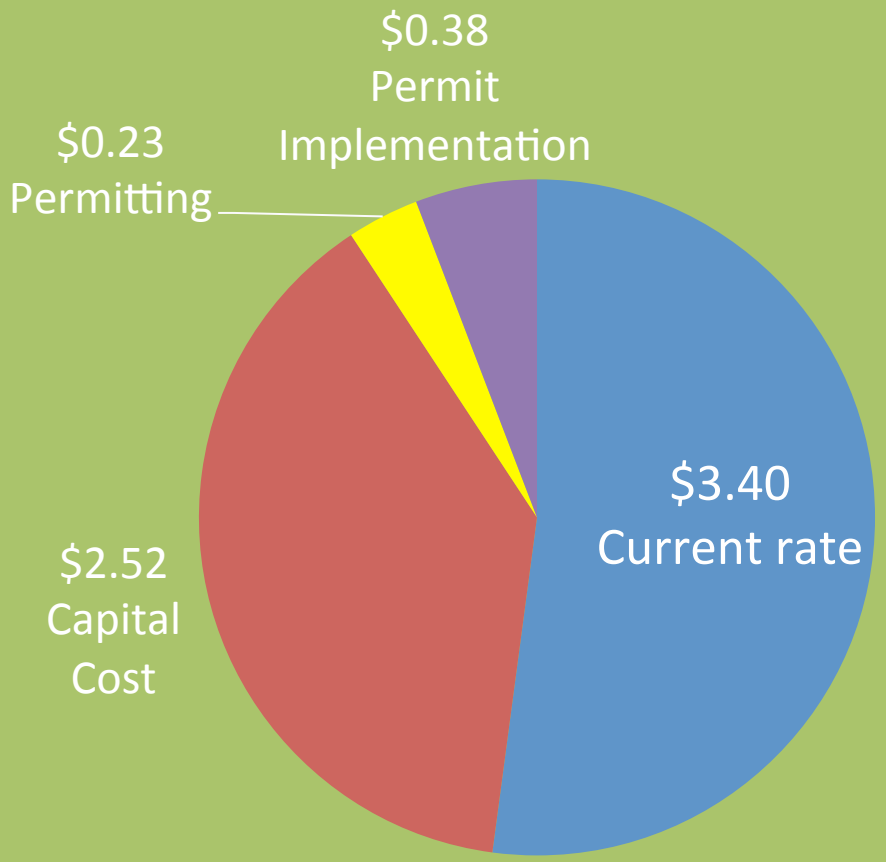
- 2-3 new staff members to do mitigation and offset verification
  - Staff needed: environmental technician, water data analyst, compliance inspection staff
  - $108,000 - $162,000
- Reuse water facility annual operating cost
  - $260,000
- Additional consultant support
  - $????

Summary of Potential Impacts to Water Ratepayers

- Capital $2.8 million (conservatively LOW estimate)
- Permitting $250,000
- Permitting implementation >= $422,000 / year

- Every $100,000 of system costs adds $0.09 to water rate

SWMI Could Nearly Double Water Bills



- New water rate **$6.52**/ 100cuft
- The avg. 4 person household using 65 gals/person/day will incur an **$827.20** annual bill
- This will be an increase of $**395.83** per year
- A 92% increase

Concerns with the Framework

- The SWMI Framework is too broad
- Applies statewide
- Does not consider Amherst's unique circumstances
  - Amherst's wells are in a semi-confined aquifer
  - Our peak water usage is not in August
  - We have worked to reduce consumption to ensure additional water in the future; SWMI negates those past efforts

Concerns with the Framework

- The Framework forces Amherst water system to address and correct for other environmental factors that impact fish communities beyond the specific impact caused by the Amherst utility's water withdrawals
- Water customers should be part of the environmental solution, but not shoulder 100% of costs for mitigating these impacts

Concerns with the Framework

What are these other environmental factors?

- Global warming
- Stream flow regime
- Water quality
- Stream temperature
- Habitat availability and connectivity
- Physical basin characteristics
- Anthropogenic changes, such as flow and water-quality alterations, dams and impoundments
- Urbanization, including altered streamflow through increased stormwater runoff and reduced recharge, and altered stream geomorphology through changes in sediment supply, erosion, and filling and piping of headwater channels.

Concerns with the Framework

- Local resources are *also* needed for investment in *existing* infrastructure
  - In 2012, the Water Infrastructure Finance Commission Report identified a $10.2 billion gap between existing funds and what is needed over the next 20 years to maintain and improve the Commonwealth's existing drinking water infrastructure.

Concerns with the Framework

- Permitting will be a longer process and there are economic development concerns if Amherst cannot quickly determine if water is available to accommodate new uses
  - UMass Amherst has adopted its own master plan that calls for continued growth over the next 10 years
    - UMass is a State entity that does not have to ask permission from the Town to expand
  - Hampers the implementation of the Town's smart growth-oriented Master Plan that increases open space protection and encourages infill development in existing village centers

Amherst SWMI Pilot Feedback

- SWMI Framework is complex
- Local compliance with inflexible regulations will not guarantee environmental improvement
- Amherst does not fit into a "one size fits all" statewide framework well because of our unique watershed characteristics
- Process has moved very quickly and our concerns have not yet been fully addressed
- There are a lot of policy decisions that still need to be made including:
  - How much is feasible/acceptable for Amherst ratepayers to spend to comply?
  - What is "commensurate with impact" and who determines this?
  - How to determine the impact of the Amherst's water withdrawals on streams?
  - How will environmental benefits be measured?
  - How to deal with impacts from outside outside community bou

Amherst SWMI Pilot Feedback

- SWMI regulations should be phased in over several more years to better work out issues in the science and process
- A method to quantify the environmental improvements needs to be developed
- The state needs to provide meaningful financial assistance; no unfunded mandates

Amherst SWMI Pilot Feedback

- All water systems need to learn about SWMI and make comments on the pending final regulations
- SWMI rules will eventually apply to all systems
  - MWRA communities
  - Surface supply communities
  - Small systems without water management permits