# Regulating Ground Water – A Town Level Approach

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January 13, 2006 – Meeting of Ground Water Regulations Work Group

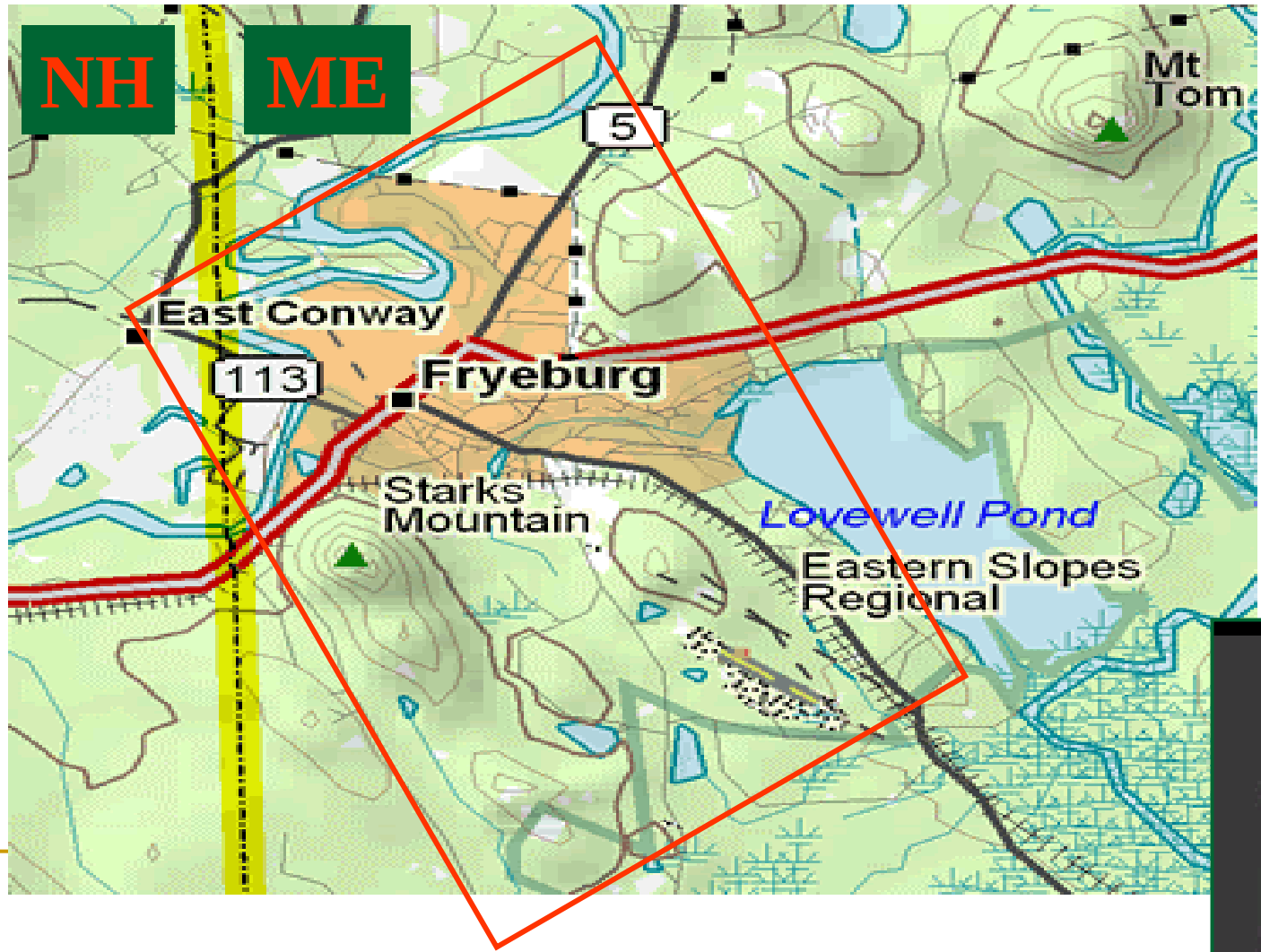
# Overview

- The Fryeburg Situation
- Current Regulatory Authority
- Objectives for New Ordinance
- General Approach
- Issues and Challenges

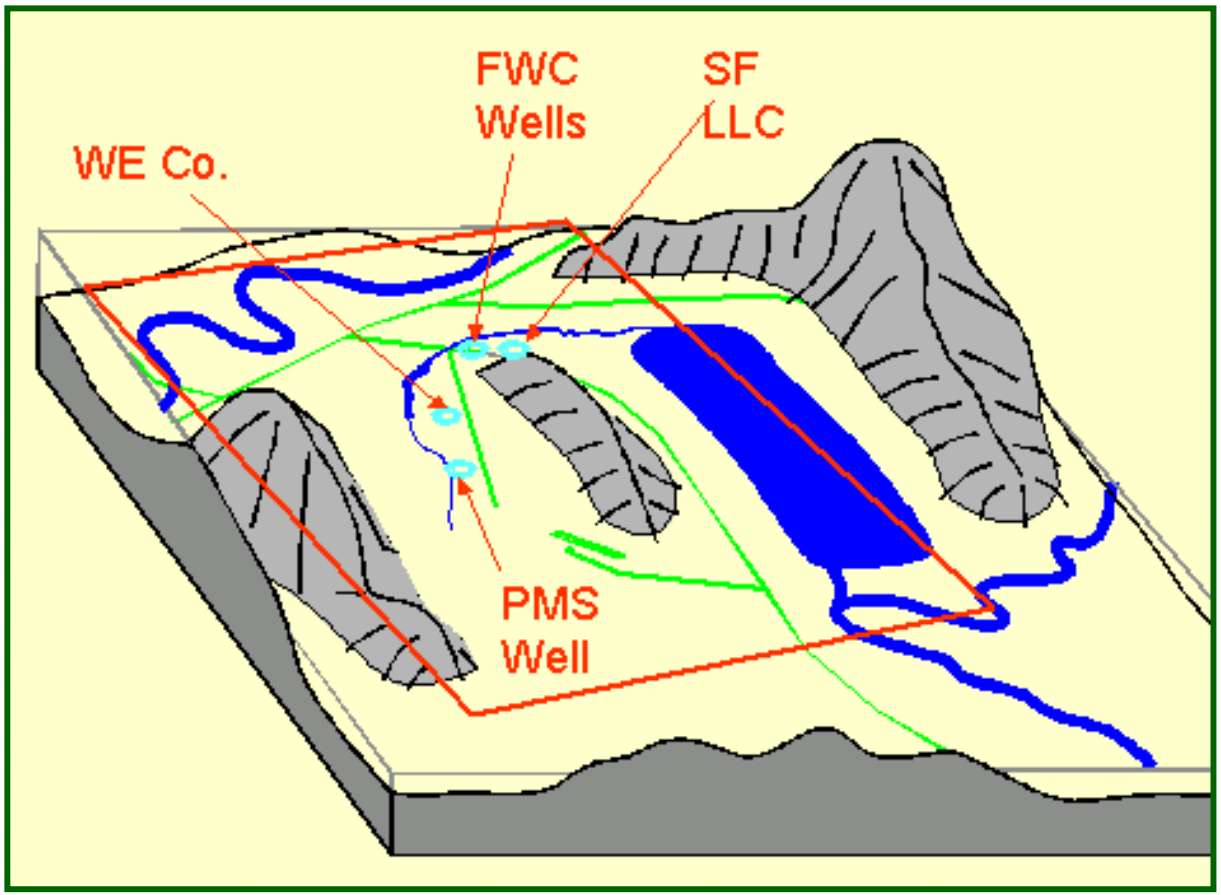
# The Fryeburg Situation

- In 2004, Nestle announced interest in a bottling plant in Fryeburg
  - Local group, *Fryeburg Aquifer Resource Committee,* formed to determine impacts, including environmental and water related
    - Water supply concerns
    - Wards Brook and Lovewell Pond impacts
- Current permitting process led to another permit for withdrawal
  - Applicant provided its own model, based on very limited information (few test and monitoring wells)
  - Emery and Garrett commissioned by Planning Board for peer review
  - Report included recommendation for “independent and comprehensive review of aquifer”
  - Permit granted for withdrawals, based on current ordinance, with potential reduction of withdrawals if new information developed
- Emery and Garrett then retained to develop a model of the entire aquifer
- Findings
  - Current production wells in place could pump aquifer dry
  - Potential impacts on Wards Brook and Lovewell Pond need to be defined

# Location in Maine

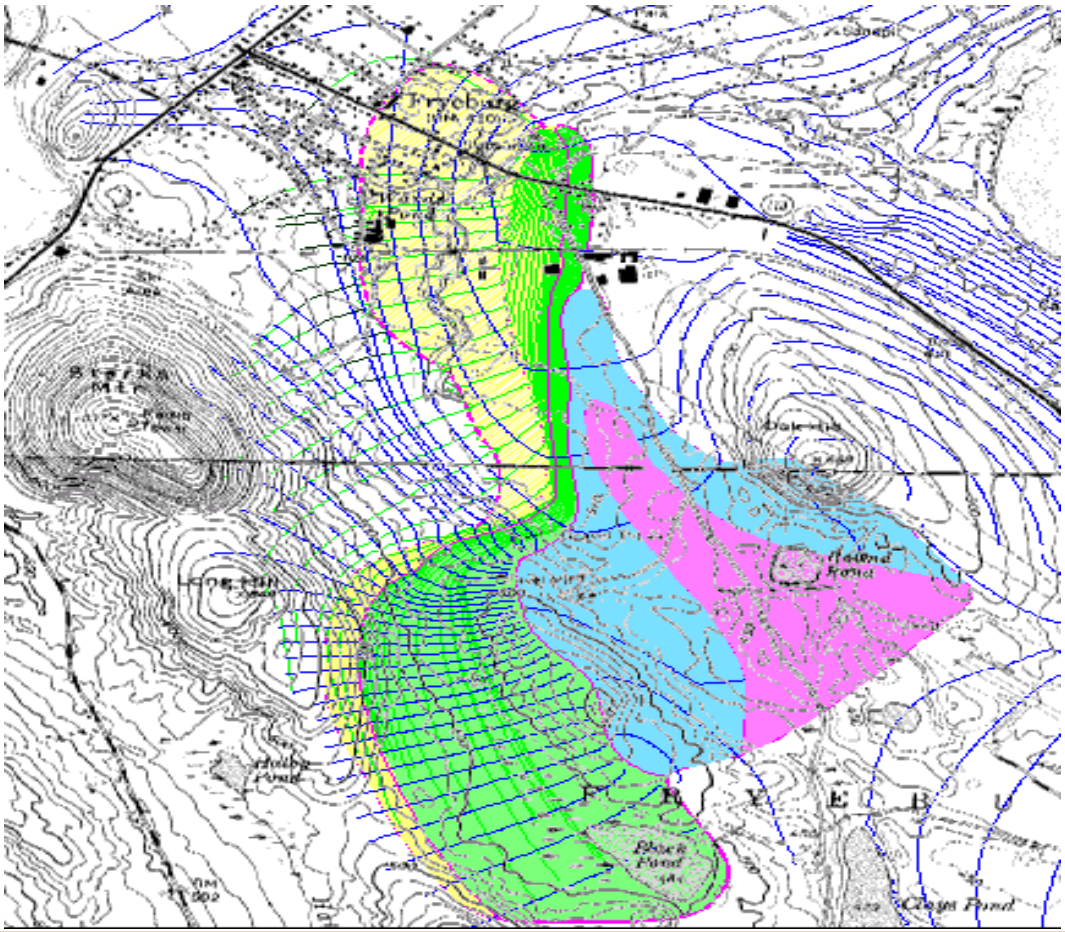


# Production Wells

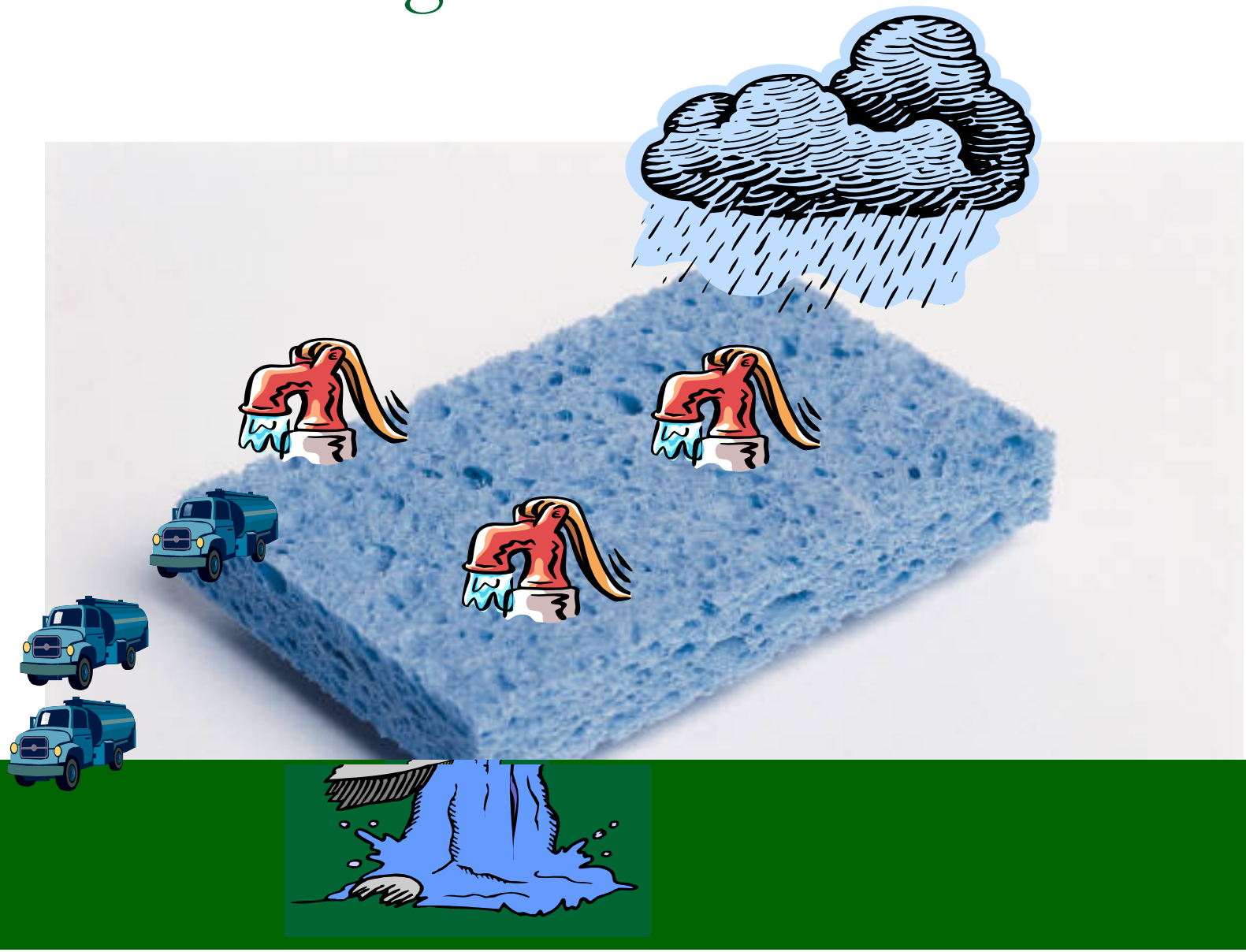


# Environmental Concerns

# Wellhead Protection Concerns

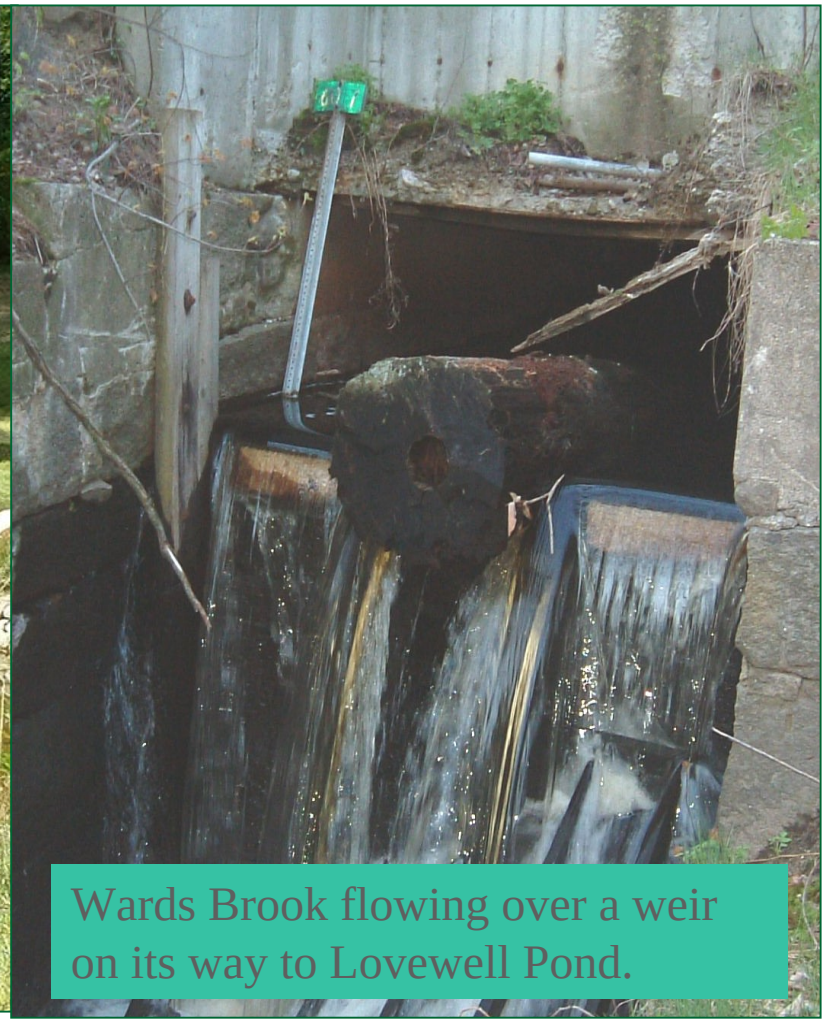


# Basic Balancing Act

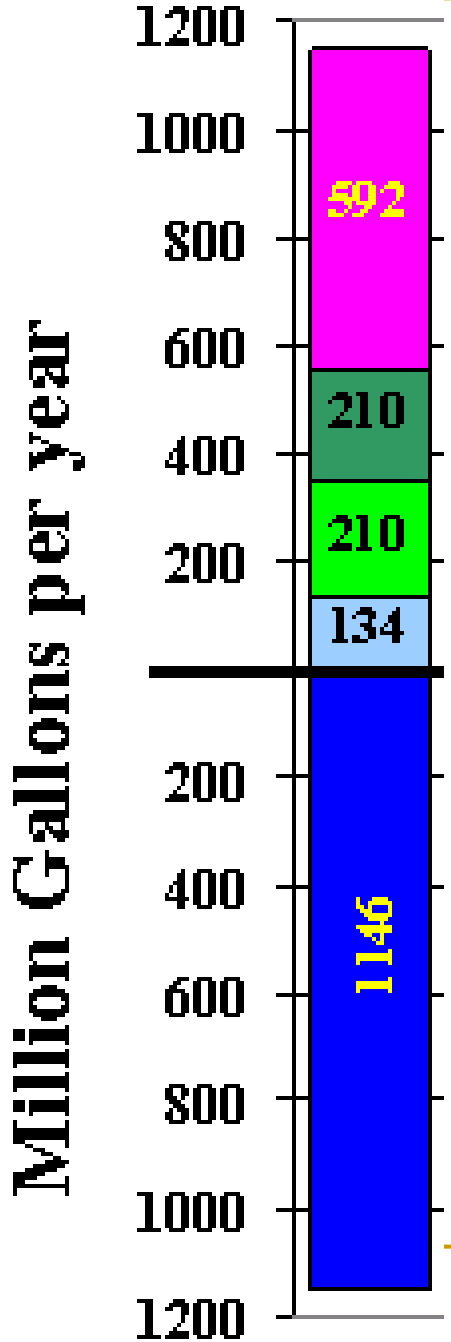


# Establishing the Balance: Withdrawal versus Streamflow

Fryeburg Water Company Well #1, used by Poland Spring Bottling Co.



Wards Brook flowing over a weir on its way to Lovewell Pond.




Other GW Discharges
(Bottled Water, Springs etc above Minimum) = Discretionary Expense

Downstream of Rte 113 = Fixed Expense

Upstream of Rte 113

FWC (Town) = Fixed Expense

Recharge = Income

# Assessing Sustainable Yield

# Current Regulatory Authority

- Permit Required for removal of 10,000 gallons or more per day
  - Applicant files site plan, with a written report of a hydrogeologic investigation, to include
    - "calculation of sustained yield during a drought with probability of one in ten years, and estimate of interactions with other aquifers"
    - Impacts on other private or public wells within 1000 feet
  - Performance standards, including acceptable impacts on ground water table, quality, public water supply, and reporting of withdrawals
- Current authority has provided a reasonably good basis for overseeing the existing withdrawals by recent permittees

# Objectives for New Ordinance

- Strengthen and specify Planning Board Authority to
  - Assure sustainability of Wards Brook Aquifer
  - Provide basis for assuring acceptable impacts on Wards Brook and Lovewell Pond
  - Provide wellhead protection for town water use
- Strengthen Planning Board's authority to deal with aquifers (sand and gravel and bedrock) outside of Wards Brook, including impacts on other natural resource
- Integrate and provide consistency of town water protection authority
- Protect resources in a way that does not discourage appropriate commercial use

# General Approach of New Ordinance

- Strong oversight of Wards Brook Aquifer
  - Two-staged approach for new permits, with Preliminary Permit to facilitate investigation prior to formal submission
  - New permits will require modeling, in relation to current Emery and Garrett Model
  - Detailed criteria for Board decision process
    - Quality and ground impacts
    - Other natural resource impacts
    - Sustainability
      - Eventually based on Ward Brook flows
      - Total quantity based (for all current and future permittees) in the interim
      - Strong reliance on hydrogeological analyses
  - Wellhead Protection Zone based on Emery and Garrett Model Results

# General Approach of New Ordinance

- For Areas outside the Ward Brook Aquifer, a less complex approach
  - Rationale:  other aquifers are not as significant, and potential impacts not as great
- Permit threshold raised to 50,000 gallons per day
- “Fast Track” if applicant can demonstrate at the outset that there are no significant adverse impacts
- Peer review is still an option for the Planning Board if it feels (reasonable uncertainty) that impacts of a withdrawal could have an adverse impact.
- Permits for both Wards Brook and elsewhere are subject to a three to five year “sunset” or review before renewal

# Issues and Challenges

- Sustainability definitions
  - For Wards Brook Aquifer, it will take time to install a measuring system (flumes and/or weirs) to gage appropriate flows
- Other Resource Impacts
  - Premise of Wards Brook Sustainability is maintaining flows to protect the brook, other resources and Lovewell Pond
  - A study of these impacts is being commissioned by the Fryeburg Aquifer Resource Committee, but will take at least a year to set the baseline for future use
- Local Concerns
  - Current Poland Springs and Fryeburg Water Company withdrawals not under formal permit
  - Potential of Water District taking over the contract relationship could bring all Wards Brook Aquifer users under the Planning Board “umbrella”
- Complexity and sensitivity of groundwater use is a challenge in achieving consensus and public understanding