

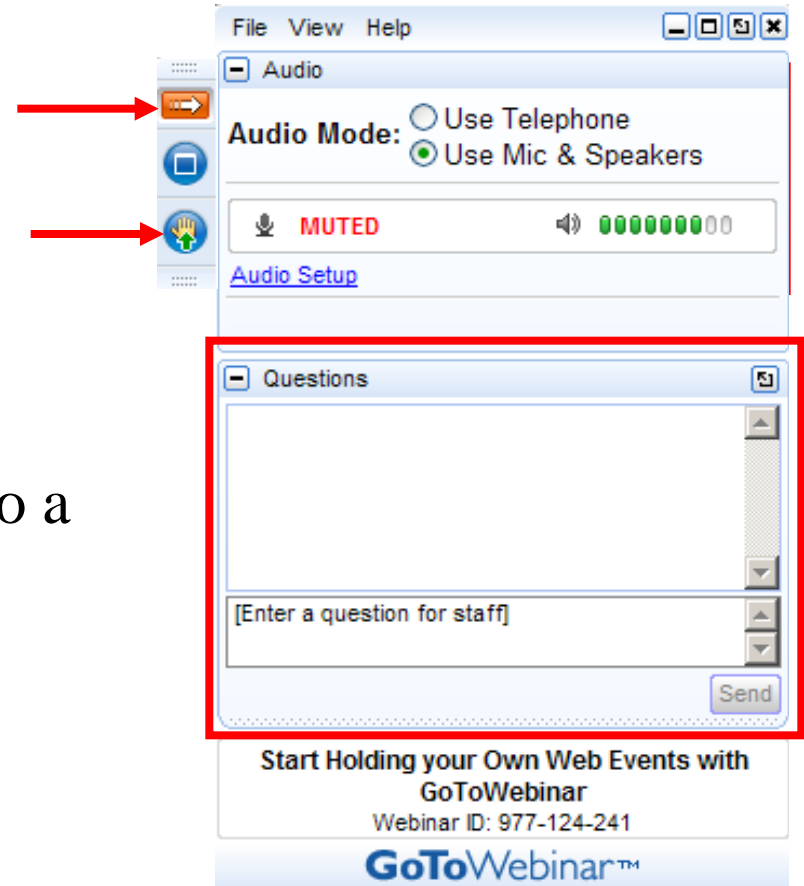
# Public Input Sessions: Meeting the MtBE Challenge in New Hampshire

Gary Lynn, P.E.



# How to Participate Today

- Open and close your Panel
- Submit text questions
- Q&A addressed at the end of today's session
- Raise your hand in *response* to a question



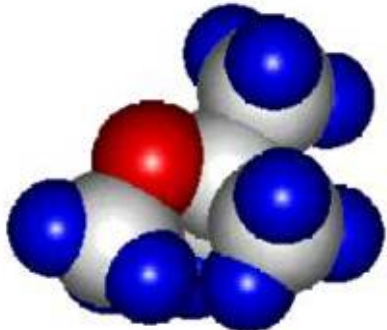


# What is MtBE?

- Gasoline Additive
  - Used in New Hampshire gasoline supply from 1979 thru 2006
  - Oxygenate for Clean Air Act Program Reformulated Gasoline (Up to 11% by volume of gas from 1995 thru 1997 and up to 15% from 1998 to 2006)
  - Banned from NH gas since 1/1/2007

# MtBE's Properties

- Ether with t-butyl and methyl group
- Very water soluble and mobile
  - Travels farther than other gasoline components
  - Recalcitrant to biodegradation
  - Contaminant levels higher due to high water solubility
- Spreads Faster
  - No retardation (prefers water over soil)
- Harder to Treat Than Other Gasoline Contaminants





# Why is MtBE a Problem?

- Harmful

- Tastes and smells like turpentine
- Carcinogenic in animals (liver, kidney, testicle tumors) and breaks down into formaldehyde and TBA
- Most common contaminant in NH drinking water that is not naturally occurring





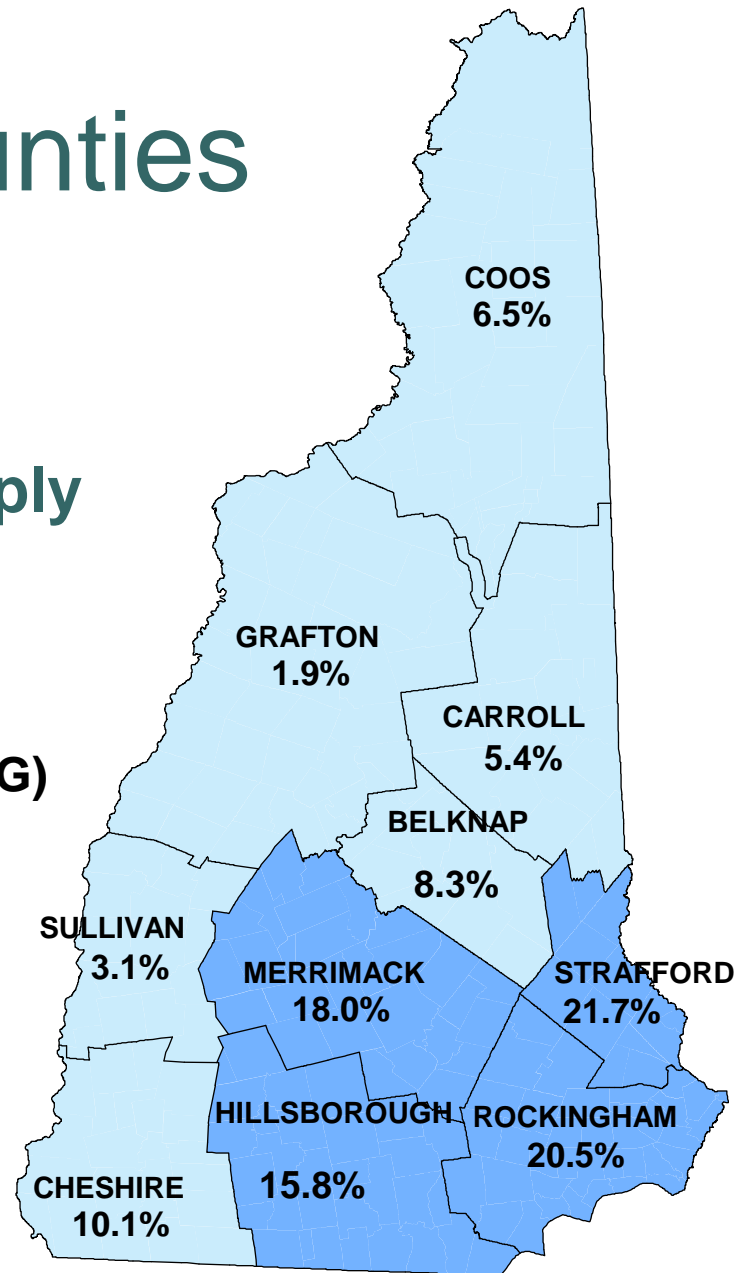
# Magnitude of Problem

- Over 600 Known MtBE contaminated sites
- Most common synthetic contaminant in NH drinking water (over 100 water supplies being treated)
- Detected 3 to 4 times more often than benzene
- Detected in 415 drinking water systems serving 500,000 NH citizens
- Estimated present in 12,500 to 32,900 private wells in NH

# MTBE in NH Counties

Percent of public water supply wells containing MTBE > 0.5 ug/L (2001)

-  Reformulated Gasoline (RFG) Counties
-  Non-RFG Counties (State-wide 13.2%)



Data and graphic provided by USGS



# NH Responses

- Gasoline Remediation and Elimination of Ether Fund (GREE), established 2001
- Litigation
  - Settlements Reached with Multiple Petroleum Refiners and Marketers in 2013
    - \$81.6 million available for MtBE investigation and remediation
  - ExxonMobil Trial, also in 2013
    - State won four month trial, verdict is in the appeals process





# G&C and Fiscal Committee Actions

- \$22.3 million budget authorized for the current biennium
- MtBE Bureau creation authorized
- Categories of eligible assistance activities approved
- Six year duration estimated



# Types of Eligible Activities

- Public Water Supply Infrastructure
  - Significant MtBE contamination present
- Investigation and remediation of MtBE sites
  - Where private well impacts are present
- Testing Private Wells
  - Near contamination sites
- MtBE contamination prevention measures

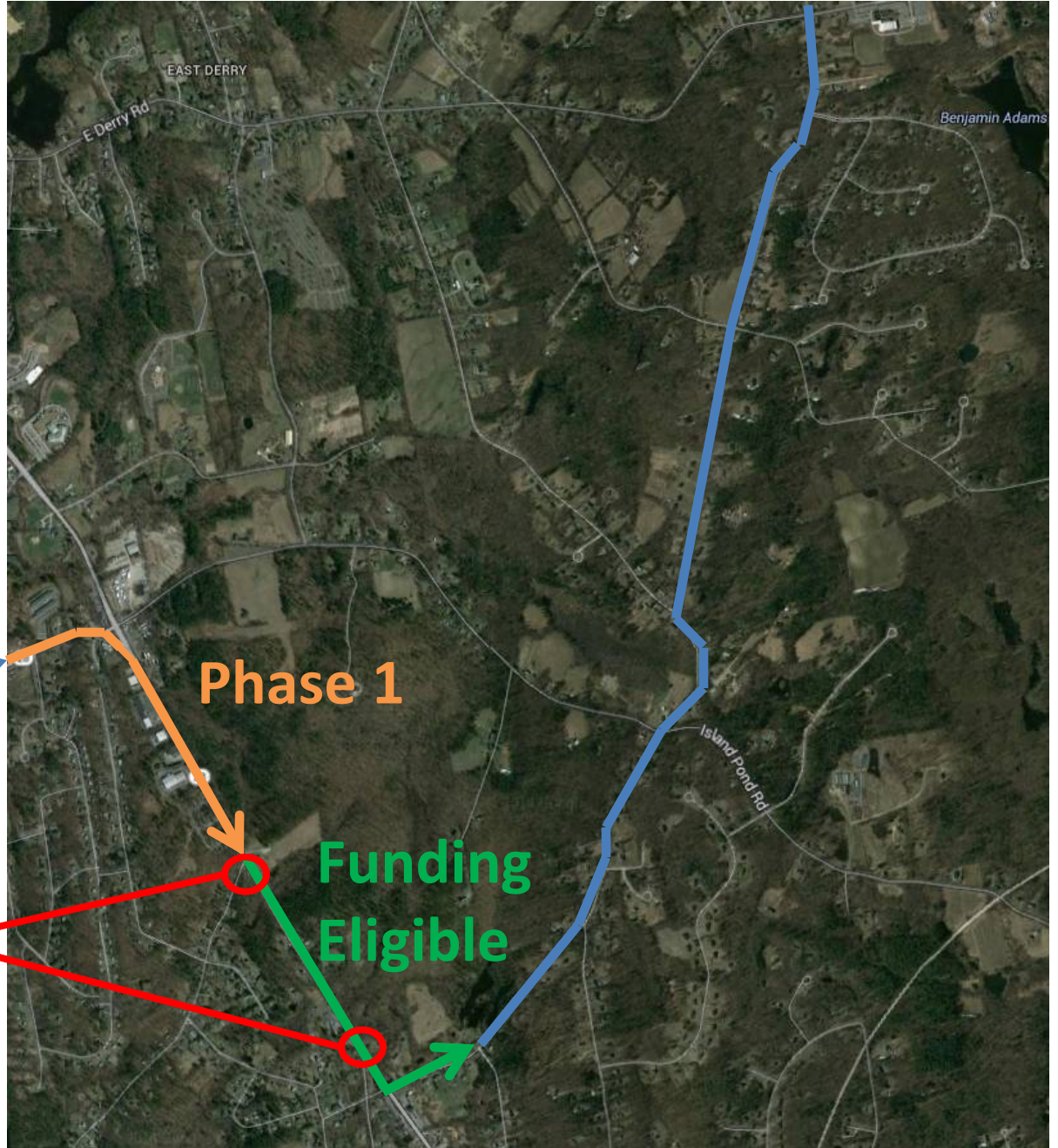
# Water Line Dead Ends

## Example Potential Municipal Project

**MtBE Sites**

**Phase 1**

**Funding  
Eligible**



# Remediation – Plaistow Lido Example



Soil Excavation

Typical Chemical Oxidant Injection Location



# Tank Removals

- Gasoline tanks
- MtBE source or potential source
- Financial test



Art Work provided by  
LUSTline

# Junkyard Release Prevention



**Gasoline in  
vehicles**

**Gasoline storage  
and transfer**



# Private Water Well Testing Program

- DES sampling crews
- Focus on high risk sites (228 known sites)
- Set Radius around high risk sites
- Follow up on contaminated wells
- Expandable if additional funding received



# How Can You Help?

- Spending and new program plan under development, public input wanted
- Public Input Topics
  - Site Nomination Process
  - Project Prioritization Criteria
  - Project Procedures
  - Private Well Testing Program







# How Can You Help

- Site Nomination Process Input

- Frequency

- Informal or Application (rolling, annual or set period)

- Screening Criteria

- Significant MtBE impacts (>AGQS, dw wells contaminated, potential dw impact)
    - Eligible prevention activities (tanks, junkyard BMPs, etc)

# How Can You Help?

- Prioritization of Eligible Projects
  - Screening criteria met
  - Reduction of risks to human health
  - Cost effectiveness/implementability
  - Community support
  - Ancillary benefits? (concurrent arsenic risk reduction, for example)





# How Can You Help?

- Process Input

- Options – reimburse or direct services
- Reimbursement
  - Preapproval of work scopes and budgets
  - Claim submittal and payment
  - Similar to existing petroleum reimbursement funds (over 20 years of experience)
- Direct Services
  - Existing DES contractors, good for orphan sites and smaller projects

# How Can You Help?

- Private Well Testing Program Input
  - Testing radius
  - Other analytes such as arsenic or radon offered for a fee?
  - Prioritization
    - Existing well impacts
    - Density and proximity of private wells





# Next Steps - Logistics

- Bureau staffing
- Public input and plan development
  - End of May target
- DOJ approval of implementation plan
  - June target
- Project identification/pipeline initiation
  - June target
- State contract modifications or procurements
- Reimbursement and payment process development, etc.
- Project implementations



# Outreach Activities

- Completed
  - Public informational sessions (Concord, Portsmouth and Lancaster)
  - Source Water Protection Conference
  - Regional Planning Commission Meetings (SWRPC, NCC, LRPC more to come)
  - Municipal meetings (Derry, Dover and Plaistow)
  - DES town meetings
  - Municipal Association Webinar
  - Total audience > 500

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