

# Don't Drink the Water!

## Communicating About Health in Water Contamination Events



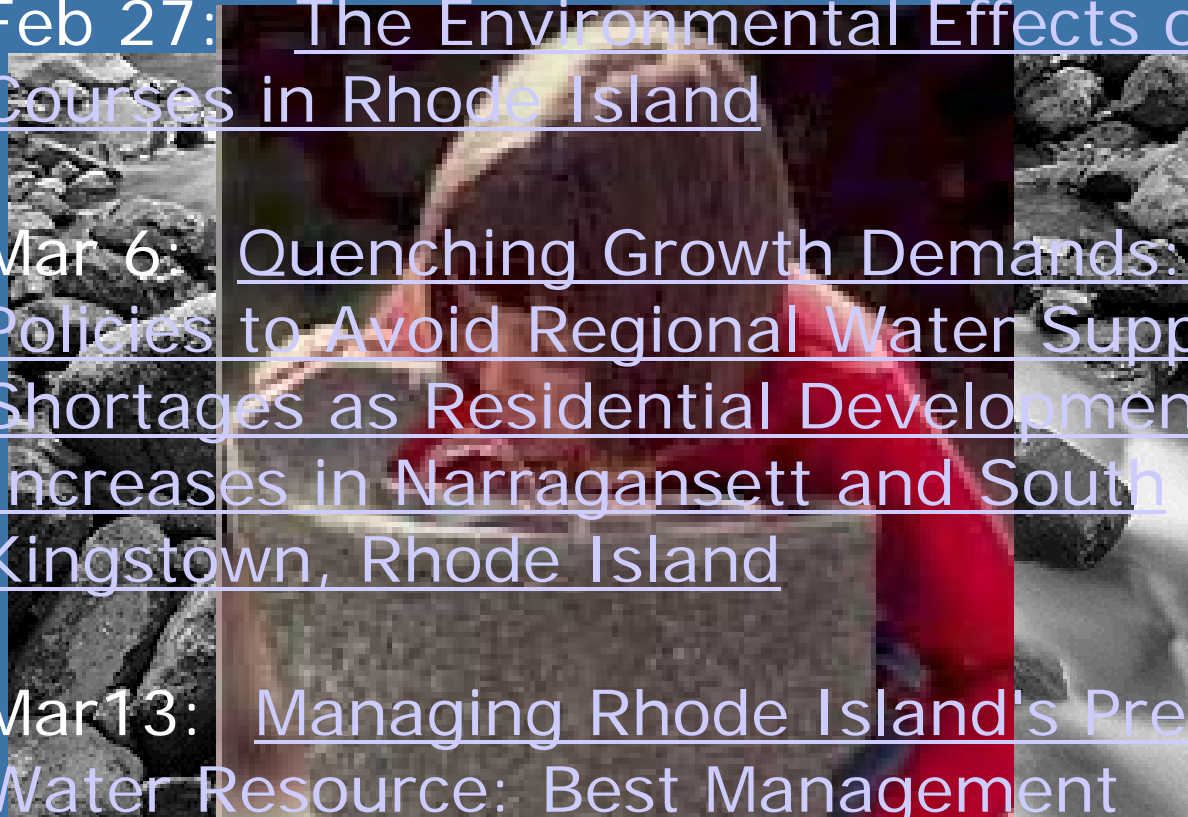
Jessica Galante  
Thesis Presentation  
February 20, 2003

# Why Study Water?

Feb 27: The Environmental Effects of Golf Courses in Rhode Island

Mar 6: Quenching Growth Demands: Policies to Avoid Regional Water Supply Shortages as Residential Development Increases in Narragansett and South Kingstown, Rhode Island

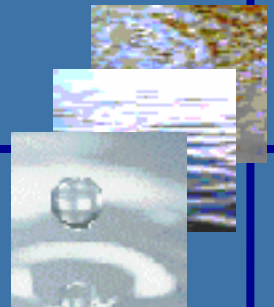
Mar 13: Managing Rhode Island's Precious Water Resource: Best Management Practices and Water Efficiency Standards for Turf Farming and Residential Outdoor Use in the Pawcatuck Watershed



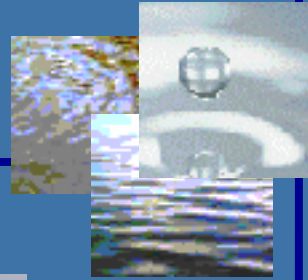
# Why Study Water Contamination?



- Not unusual
- Different types
  - Bacterial
  - Chemical
  - Other

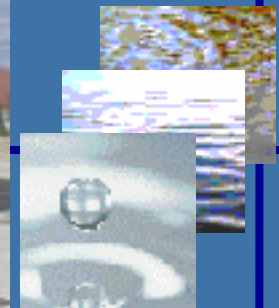
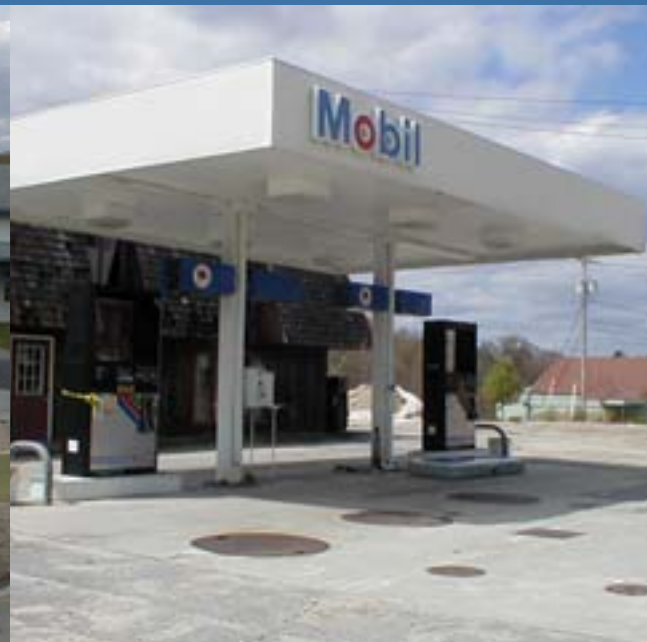


# Pascoag, RI



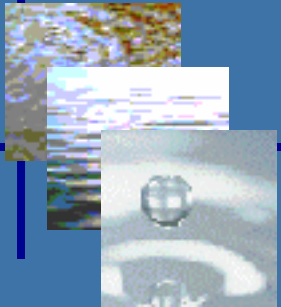
# Background

- Fall of 2001
- Small village in northern RI
- 5,000 people with municipal water
- Municipal water contaminated with chemical MTBE



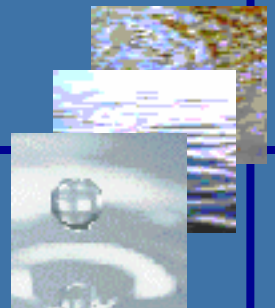
# What is MTBE?

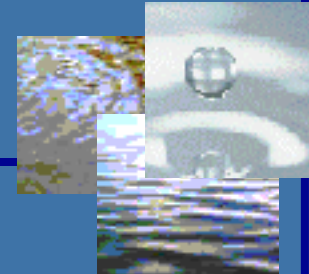
- Methyl tertiary-butyl ether
- Gasoline additive
- Used to decrease emissions
- 1990 Clean Air Amendments
- Widespread use



# Why is MTBE a Problem?

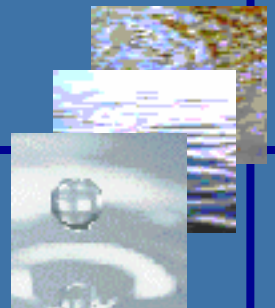
- Leaking underground storage tanks





# Why is MTBE a Problem?

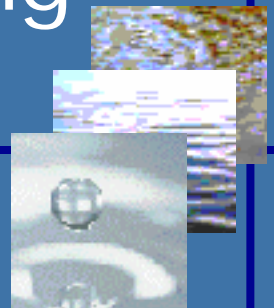
- Leaking underground storage tanks
- Water soluble
- Fast-moving
- Scientific controversy regarding health



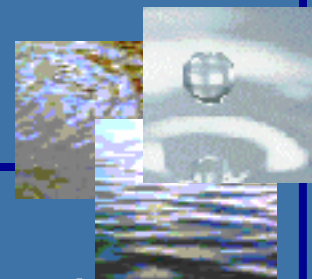
# Contamination in Pascoag



- September 1, 2001: Notified
- September 25: Public meeting
- October – December: Addressing the problem
- January 19, 2002: Clean water



# HEALTH Advisories



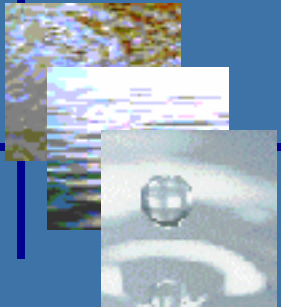
**Use bottled water** for drinking, cooking, infant formula, ice, preparing food or beverages, toothbrushing and bathing children who may swallow the water.

**Reduce exposure to MTBE fumes:** use good ventilation or fans when bathing, showering, washing dishes, or other similar activities. Keep bathing times brief or take sponge baths.

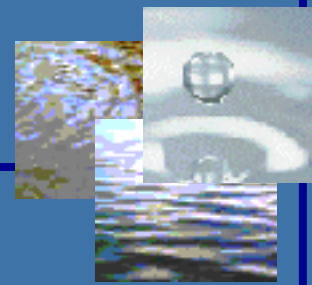
**Reduce overall water use:** use laundromats, stop all outdoor water use, use water conservation devices, take brief showers or sponge baths, use paper plates and cups.

# Study Components

- ES 126 study
- UTRA with Jessica Spiegel
- Thesis research



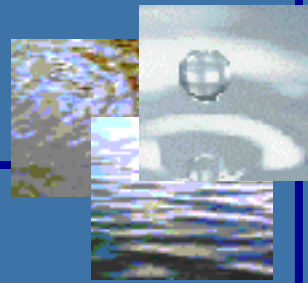
# Resident Study



- ATSDR involvement
- ES 126
- Spring 2002
- 100 interviews
- Investigating resident perceptions and experiences regarding the event



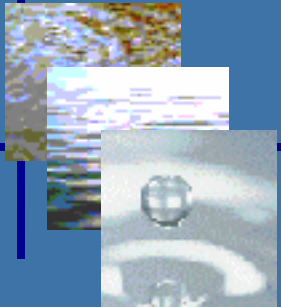
# Why study perceptions?



- Drive actions
- Help to craft policy
- Define stakeholder groups
- Describe an event in terms of people, not numbers



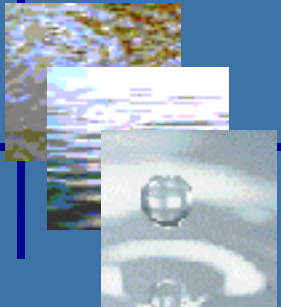
# Resident Study



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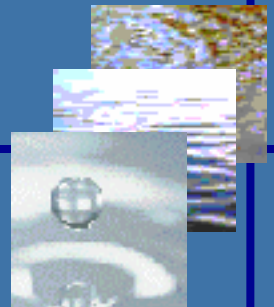


# Resident Study



# Results

- Presented in May, 2002
- Six main topic areas
  - Communication, Water Use, Concerns, Official Response, Community, Future



# Focusing In

## Official Response and Communication

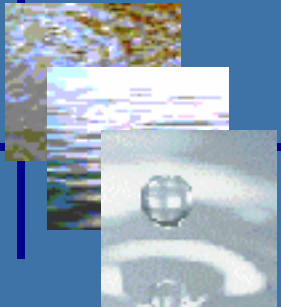
- 78% attended at least one meeting
- many found these meetings frustrating; left with unanswered questions



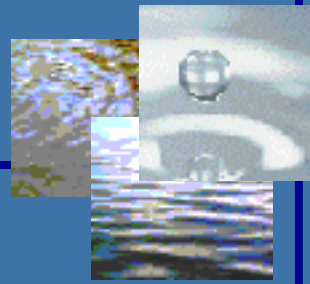
# Focusing In

## Official Response and Communication

- Frustration with official action
- Not only from lack of concrete answers about health effects, but from perception of officials' dismissal of their concerns



# Resulting Questions



- What elements of crisis were important in affecting perceptions?
- What elements of communication and response made them ineffective?
- What could be done differently next time?

# Thesis Question

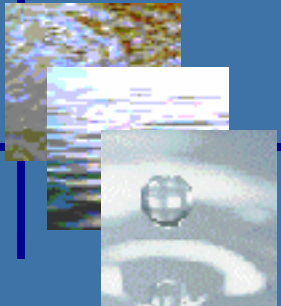


How can the public's perception of drinking water contamination be used to inform communications in water contamination events?



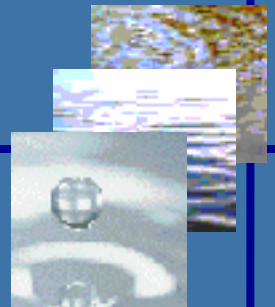
# Communication Models

- Risk communication
  - Slovic: Dread, unknown risk
  - Sandman: Hazard + Outrage
- Health education; public health messages
  - Knowledge, attitudes, and behavior
  - Social Marketing
- Emergency communication
  - Emergency management agencies
  - bioterrorism

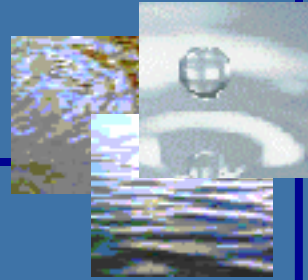


# Building From the Research

- Community involvement
- Investigating whether communications are satisfactory or unsatisfactory
- Determining what makes communication effective or ineffective



# Why is this important?

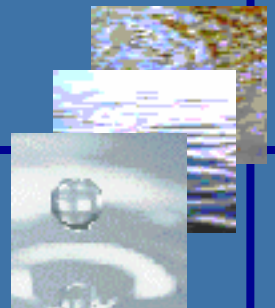


- Likelihood of a similar event
- Limited information sources in such an event
- Public health mission: includes education and communication

# Back to Pascoag

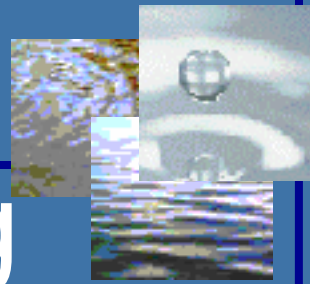


- Example of health communications regarding water contamination
- Known effect
- Use to examine responses in other communities



# Methodology 1:

## Communication in Pascoag

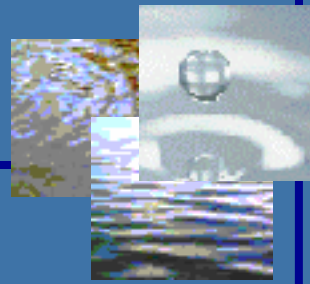


- Public meeting and handout

Exposure to MTBE in your water does not exceed federal risk levels.

Federal guidance on MTBE exposure using studies is not consistent. One federal agency, the ATSDR, provides guidelines for safe exposures that last up to one year-including individuals who are known to be sensitive to chemicals. The levels of MTBE in your drinking water do not exceed these federal guidance levels-studies do not indicate that there are health effects at these levels.

# Communication in Pascoag



- Public meeting and handout
- Department of Health mailings

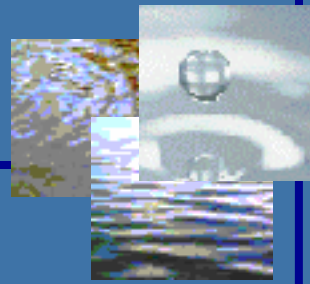
Current status:

On October 30th, the concentration of MTBE at Well #3 was 1100 ppb.

On November 5th, the concentration was 1000 ppb.

Concentrations of MTBE have increased from 400 ppb on September 2nd to the present level during the last 10 weeks.

# Communication in Pascoag



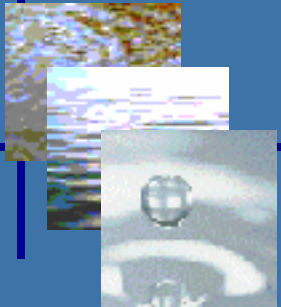
- Public meeting and handout
- Department of Health mailings
- Media coverage

The Environmental Protection Agency lists 92 contaminants that can taint water in sufficient quantities to make it unsafe for drinking. MTBE, the chemical that recently fouled the public water supply for the homes and businesses in Pascoag, is not even on that EPA list because nobody knows how toxic it is to humans.

*Providence Journal, Sept 2001*

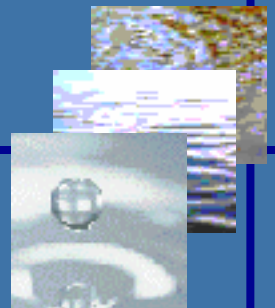
# Analysis of Materials

- Difficult to read—high reading level
- Unclear message
- Occasional contradictory info
- New question: does it respond to resident concerns?



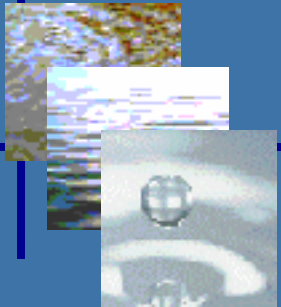
# Methodology 2: Qualitative Component

- Focus Groups
  - Residents in unaffected communities
- Semi-structured interviews
  - Residents
  - Officials



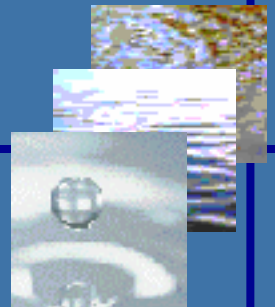
# Preliminary Results: Focus Group 1

- Similarities with Pascoag: health effects, duration and source of contamination, convenience
- Concern about bioterrorism
- Lack of trust in source
- Displayed willingness to seek other info

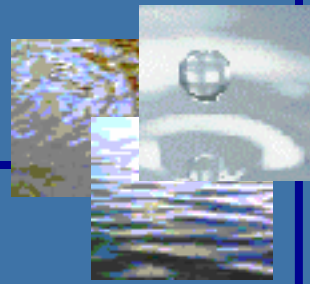


# How Does This Relate?

- Supports Pascoag findings
- Emphasizes importance of good communications
- Highlights similarity of community needs
- Gives additional ideas for better communication in future

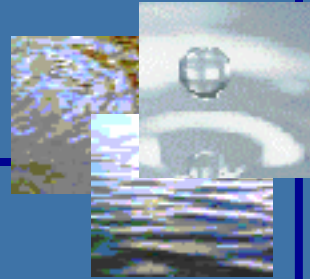


# What's Important For New Materials?



- Easy to read
- Clear message
- Taking concerns seriously
- Conveying uncertainty
- Promoting trust

# Next Steps



- Subsequent focus groups and interviews
- New materials construction and field-testing
- Sharing data with health officials

# Acknowledgements

- Chris Zarcadoolas
- The faculty, staff, and students of the CES
- ES 126
- Jessica Spiegel
- The residents of Pascoag
- RIDOH
- Participants
- 68 John Street
- Mock trial team
- Alec
- The Galante clan: Mom, Dad, Danny, Matt, and Sarah

