



# Is My Water Safe to Drink? Public Perceptions, Attitudes and Trusted Information Sources

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# Clean Water, Land and Legacy Amendment

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- **Constitutional Amendment**
  - Passed November 2008
  - 3/8ths of 1 percent sales tax
  - Ends in 2034
- **Clean Water Fund (33%)**
  - To protect, enhance, and restore water quality in lakes, rivers, streams, and groundwater.
  - 5% for drinking water protection



# Minnesota Department of Health

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## Clean Water Fund Initiatives



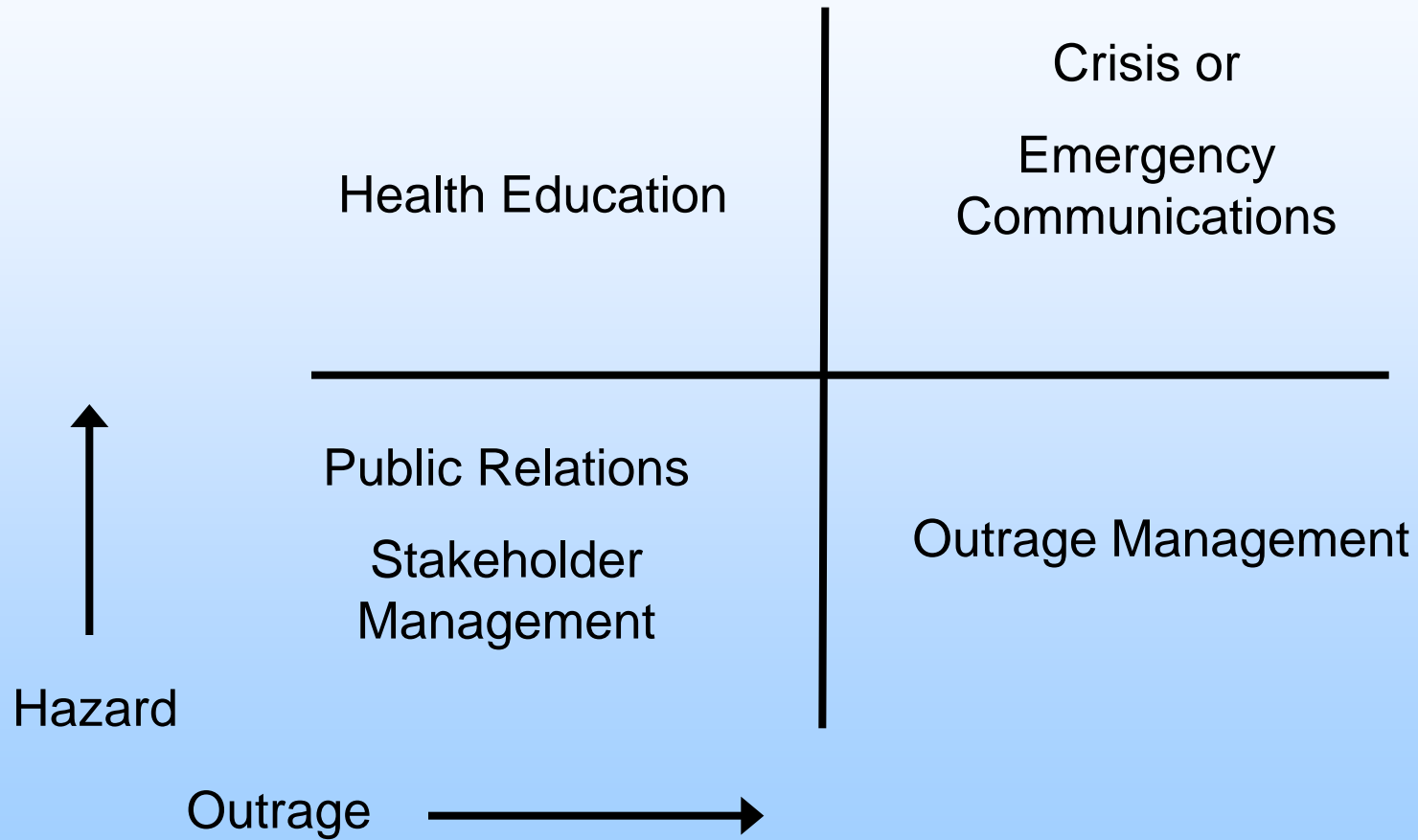
- Drinking Water Contaminants of Emerging Concern
  - Identify, investigate, and evaluate contaminants that have the potential to impact drinking water
  - Develop health-based guidance for specific contaminants
- Accelerated Source Water Protection
- County Well Index Enhancement
- Unused well sealing cost share

**I just cringe at the thought of going to a state (Web) site. They're not logical, it's almost like an engineer put it together, it's not very user friendly.**

*Quote from a focus group participant*



# Sandman's Paradigm



# Risk Perception

<b><u>More Acceptable</u></b>	<b><u>Less Acceptable</u></b>
<b>Voluntary</b>	<b>Involuntary</b>
<b>Controlled by individual</b>	<b>Controlled by others</b>
<b>Clear benefits</b>	<b>Little or no benefit</b>
<b>Fairly distributed</b>	<b>Unfairly distributed</b>
<b>Natural</b>	<b>Manmade</b>
<b>Generated by a trusted source</b>	<b>Generated by an untrusted source</b>
<b>Familiar</b>	<b>Exotic</b>
<b>Affects adults</b>	<b>Affects children</b>



(Fischhoff, et al. 1981)

# Needs Assessment Project

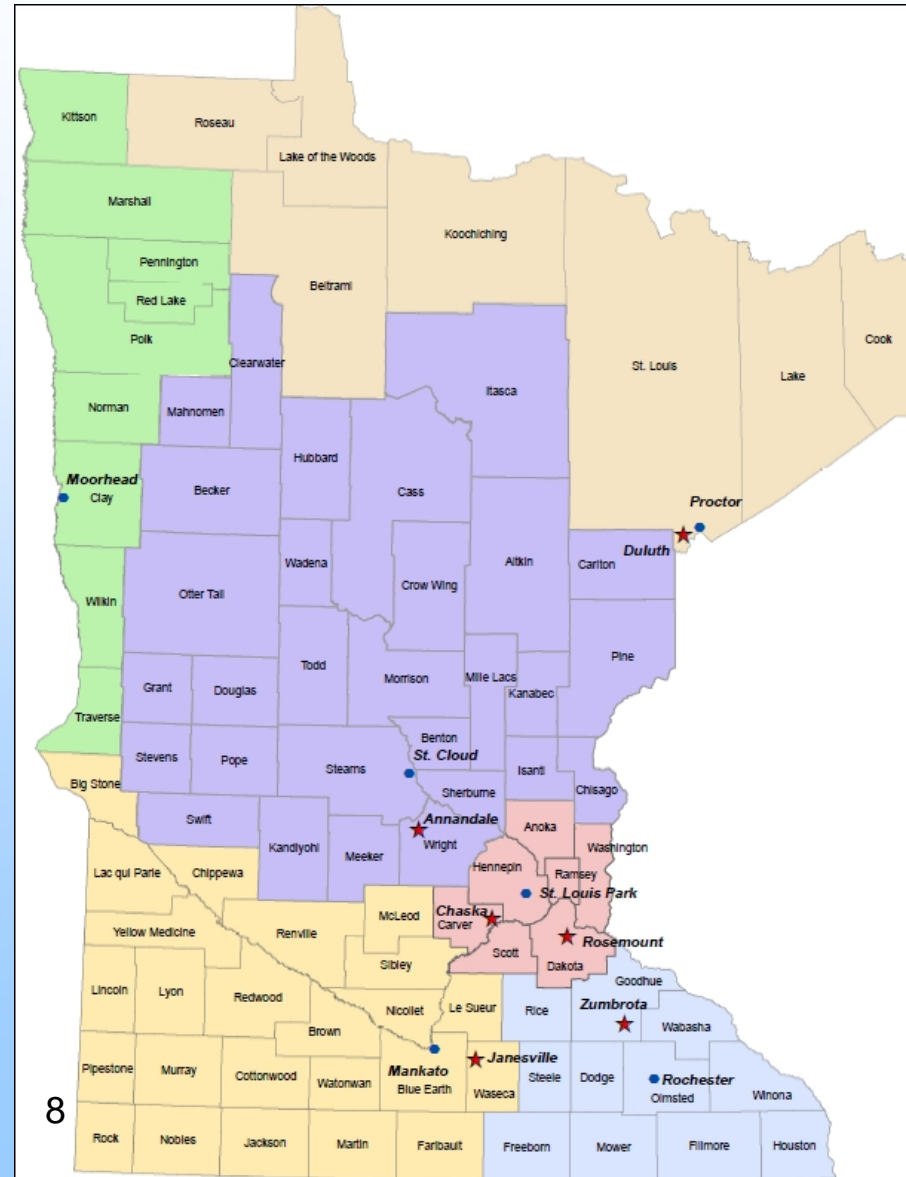
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- **Focused on drinking water and contaminants**
- **Goal of project was to learn from the public, through a series of focus groups, their:**
  - General perception of water quality
  - Perceptions about contaminants
  - Credible sources of information



# Recruitment Methodology

- Recruited from six regions
- Areas without recent drinking water issues
- Target of 12 participants
- Random recruitment process proposed





# Focus Groups

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- **Average of 7 participants per focus group**
- **Additional recruitment methods needed**
- **Interviews included**



# Findings

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- **Perceptions:**

- Drinking water quality is associated with taste, temperature, odor, and clarity
- Water quality problems happen to other people
- Private well water is safer than treated public water
- Well depth and original well test is sufficient indicator of water quality



# Findings

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- **Credible Sources:**

- City/county entities
- Other local/regional governmental units
- Well drillers
- Community networks/leaders
- State/federal government
- Internet
- Media



# Report Recommendations

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- **For local/regional entities that the public turn to for information, MDH should:**
  - Provide key messages
  - Serve as central resource of good information
  - Support multi-pronged approaches to engagement/communication



# Communication Task Group

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- **Task Group comprised of city, county, and state agency staff as well as staff from non-profit organizations and academic institutions**
- **Charged with assisting MDH in developing outreach and communication plans**



# Communication Task Group

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- **Baseline education provided through local, trusted organizations**
- **Information for local organizations should:**
  - be tailored for specific situations
  - include where/how much of contaminant found
  - include MDH contact person for more info



# Mental Models

- **“whatever the goal of a communication, its designers need to address the mental models that recipients bring to it, that is, the pattern of knowledge gaps, overly general understandings, and outright misconceptions that can frustrate learning...One cannot rely on the intuition of technical experts regarding either what laypeople currently believe or what they need to know.”**

Atman, Bostrom, Fischhoff, and Morgan, 1990

# Mental Model (2)

- **prepare components of the expert model**  
**then**
- **consult real people**
  - current knowledge
  - incorrect knowledge, beliefs
  - knowledge gaps that need filling
  - focus on what people need to know



# Mental Model (3)

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## ■ Identify

### – Correct concepts

- Local well driller, water utility, public health can be trustworthy sources of information
- Information from the news media and Internet should be verified with a trustworthy source
- Water quality in Minnesota's public water supplies is good
- Flooding and septic tanks pose a risk to drinking water wells
- Agricultural practices and unsealed unused wells can affect drinking water quality



# Mental Model (4)

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## ■ Identify

### – Misconceptions

- Drinking water quality can be determined by taste, temperature, odor, or clarity.
- Water quality problems happen to other people.
- Private well water and bottled water are safer than public water supplies.
- Well depth and the original well test is a good indicator of water quality in a private well.
- There is an invisible, unlimited supply of groundwater.
- Any amount of a chemical in drinking water is dangerous.
- Well water is free.
- Fluoride causes cavities, bone cancer, obesity, etc.



# Mental Model (5)

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## ■ Identify

### — New concepts

- Not “safe” or “unsafe” dichotomy, the question is “How safe?”
- Balancing risks and benefits; chlorine, fluoride
- Regular testing of well water and proper maintenance are essential to safe drinking water
- Degree of protection afforded by public drinking water supplies
- Sources of drinking water require protection



# Conclusions

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- **Public perceptions of whether water is safe to drink are influenced by many factors.**
- **Assessing these factors is a critical step in developing communications.**
- **The Mental Model approach can identify key beliefs, concerns and knowledge gaps that should be addressed in risk communication.**



# Questions?

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# Implications for Risk Education

- **anticipate change**
  - new scientific developments may be perceived as past errors by public**
- **acknowledge uncertainty**
- **discuss the scientific method**
  - “active area of research**
- **explain differences in health guidelines**
- **serial/spiral health education**