



# **Rural Drinking Water in Newfoundland and Labrador**

***Exploring Solutions for Sustainable Rural Drinking  
Water Systems***



**Corner Brook Pulp and Paper  
Public Advisory Committee**

**Sarah Minnes, PhD Student  
Project Coordinator**

# Partnerships



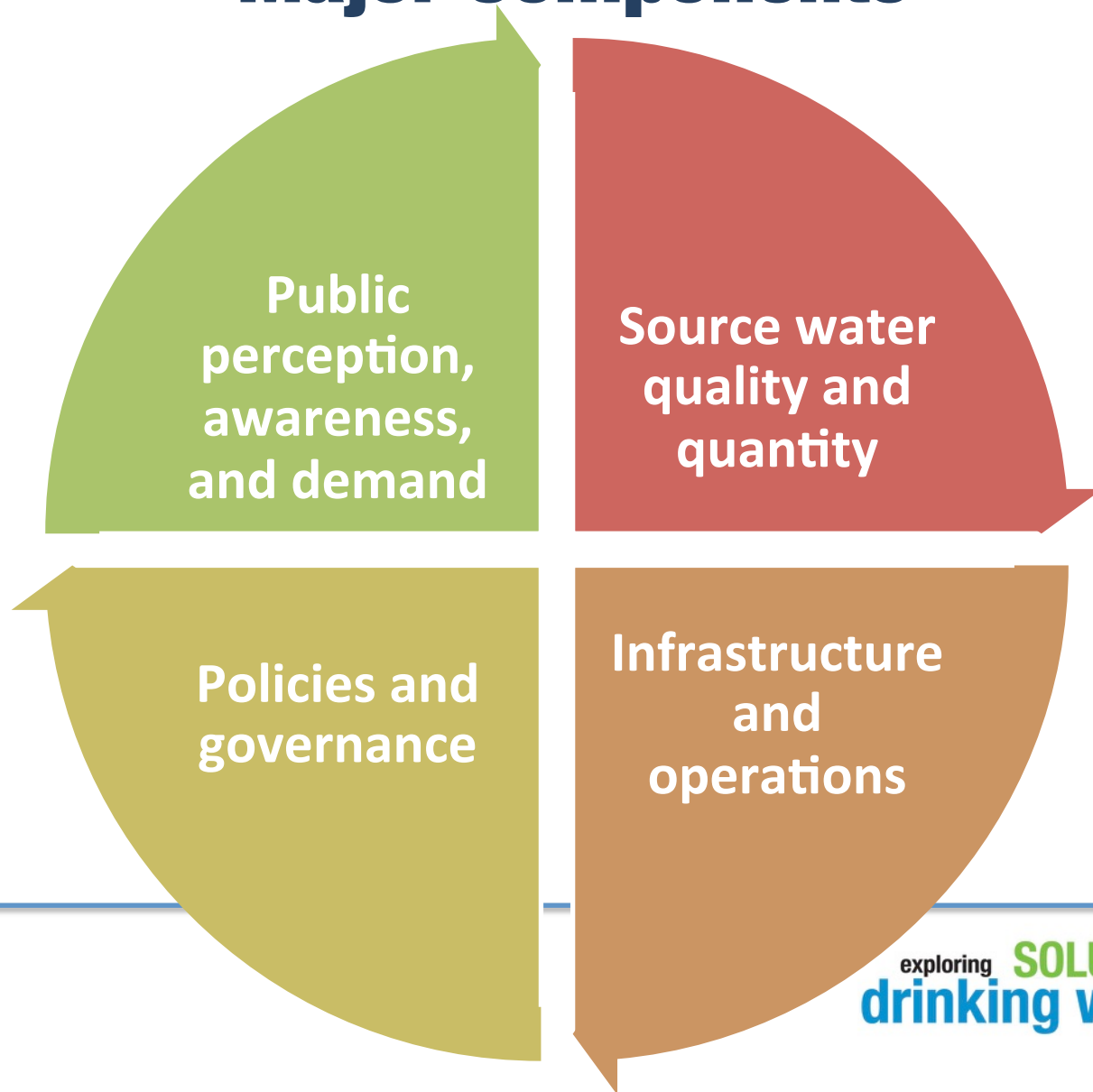
GRENFELL  
CAMPUS

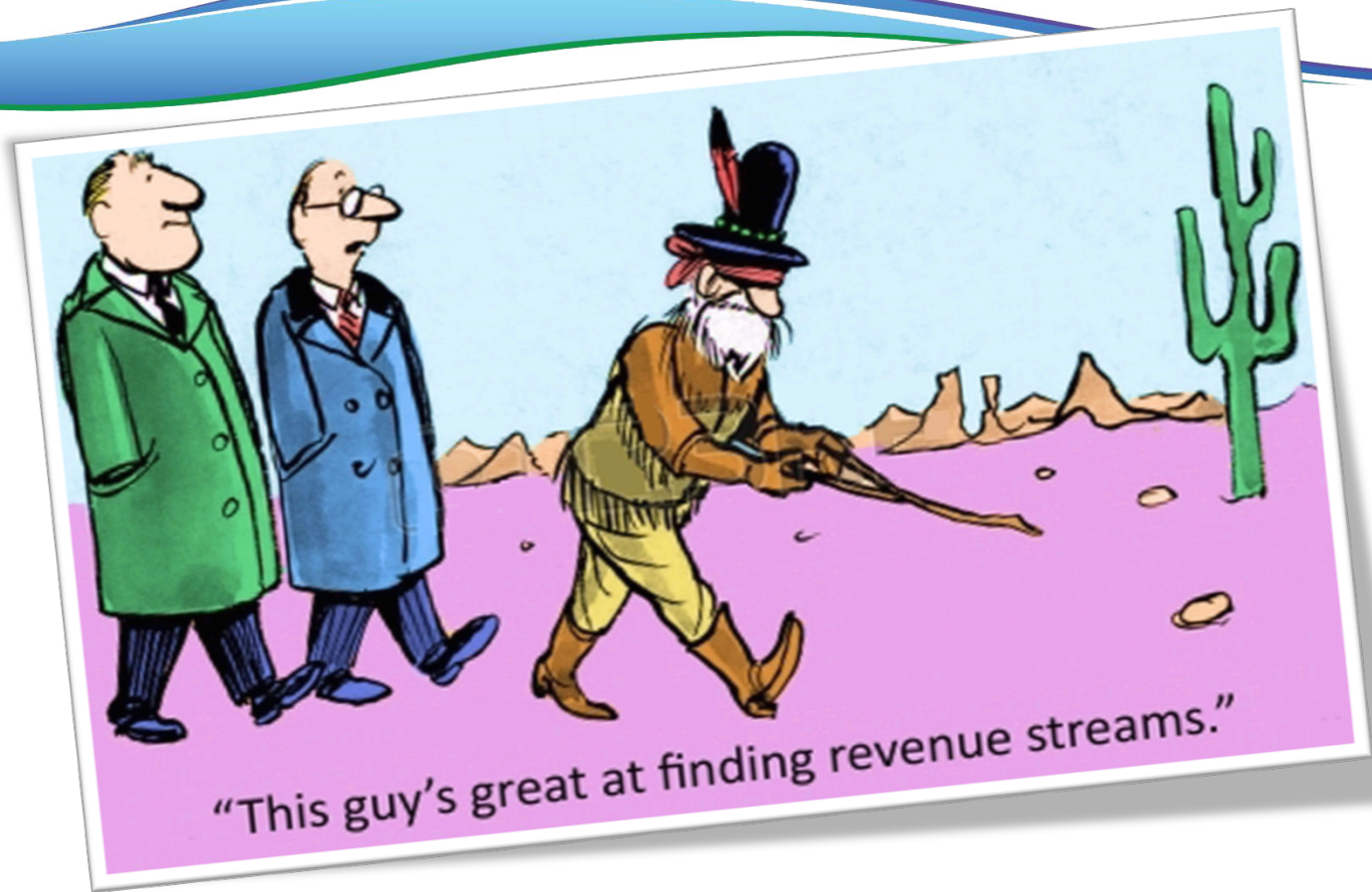


exploring **SOLUTIONS** for rural  
**drinking water SYSTEMS**



# Major Components





finding solutions that

**WORK**

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**drinking water SYSTEMS**

# Concerns:



- X Aging Infrastructure**
- X No Leak Detection Systems**
- X Little Physical Asset Knowledge**
- X Limited Human Resources**
- X Lack of Succession Planning**

# Asset Management



**Preventive  
Maintenance**

**Before it Breaks...**

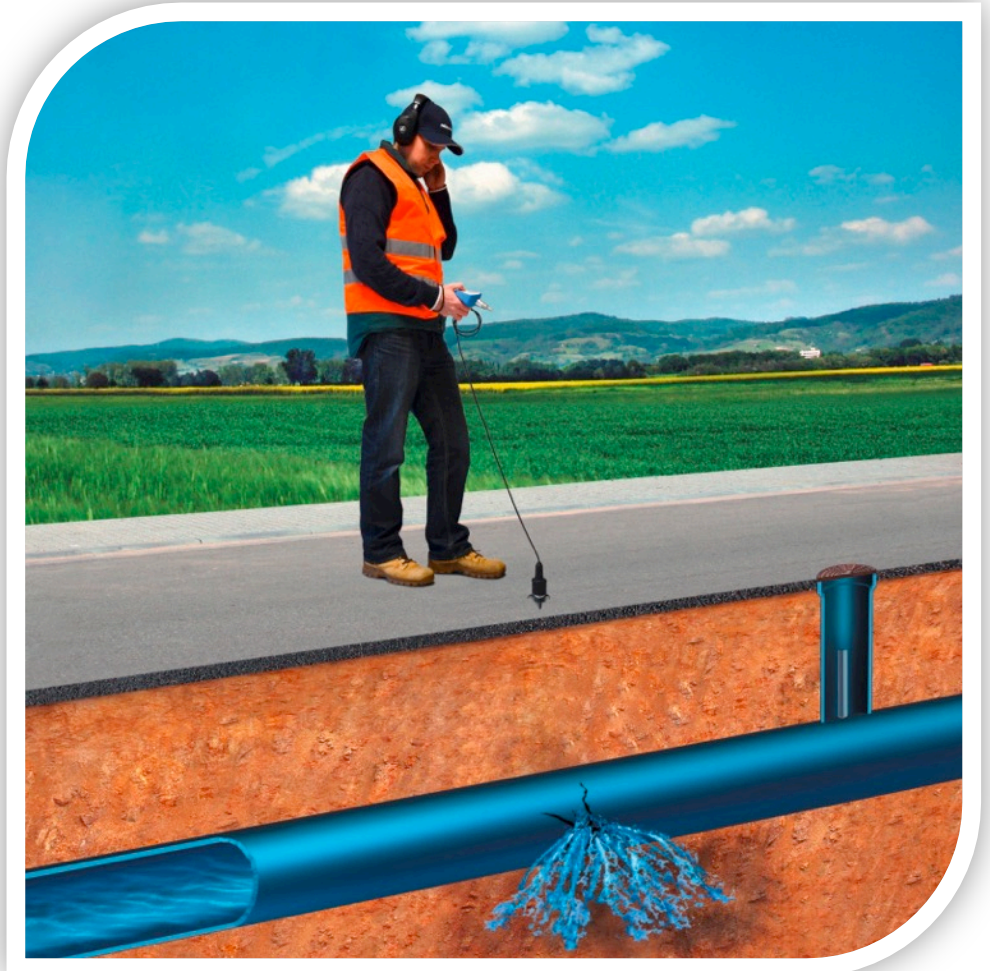
# Solutions:



- ☒ **Effectively Charge for Service**
- ☒ **Develop Leak Detection Plan**
- ☒ **Improve Overall Knowledge**
- ☒ **Explore Regional Approaches**
- ☒ **Maintenance Assurance Manuals**



# Formalized Leak Detection Plans





# BRITISH COLUMBIA

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Columbia Basin  
**Water**  
*Smart*



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BRITISH  
COLUMBIA

Columbia Basin  
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# The Program:

- **Water Loss Management Training**
- **Water Metering Assessment and Support**
- **Water Smart Ambassador Educational Program**
- **Other Learning Opportunities**





BRITISH  
COLUMBIA

Columbia Basin  
**Water**  
*Smart*



### **Sparwood, BC**

- **Used water meter data to identify highest water users**
- **Focused on leak repair and irrigation reductions**
- **22% reduction in peak demand**

### **Trail, BC**

- **City found some homes not complying with watering bylaws**
- **Friendly letters from City resulted in 100% compliance**

# Certification

## Certified Water Operators



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# Concerns:



- ☒ Higher # of BWAs
- ☒ No Maintenance Plan
- ☒ Limited Chlorine Residual Testing
- ☒ Incomplete Mapping

# Solutions:



- ☒ **OETC Program**
- ☒ **FREE Seminars/Workshops**
- ☒ **Mobile Training Units**
- ☒ **On-Site Training**
- ☒ **Regional Water Operators**

# 3 Mobile Training Classrooms

Department of Environment and Conservation, Newfoundland and Labrador



- Used to train municipal water and wastewater operators.
- Portable units provide on-site training.

# Regional Water Operators

**Save Money**



**Reduce BWAs**



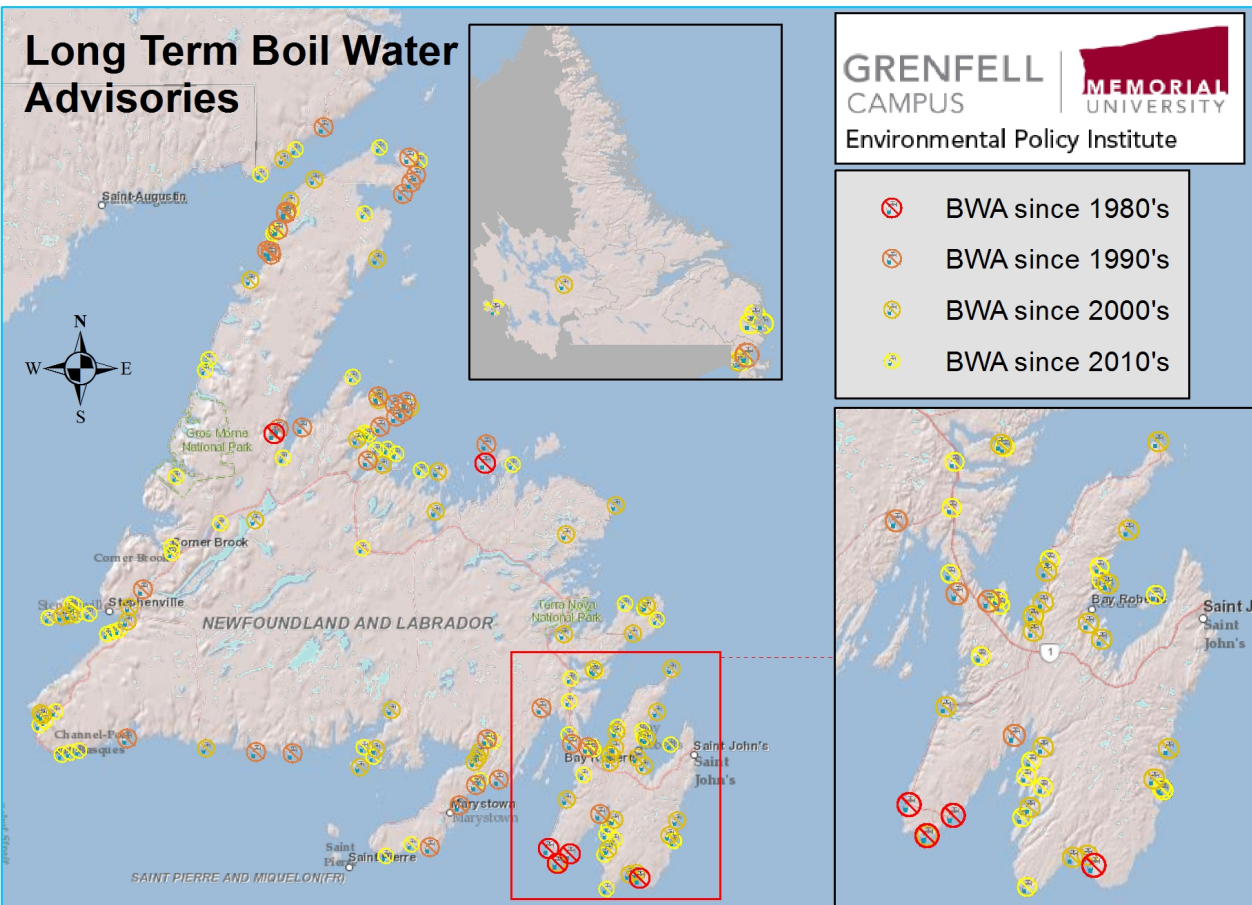
**Qualified Staff**





# 238 BWAs

In Newfoundland and Labrador on November 25, 2014



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# Concerns:



- ☒ Public Desensitization
- ☒ Lack of Education
- ☒ Measuring Quality
- ☒ Long Term Ranking
- ☒ Hard to Lift BWA



# Solutions:

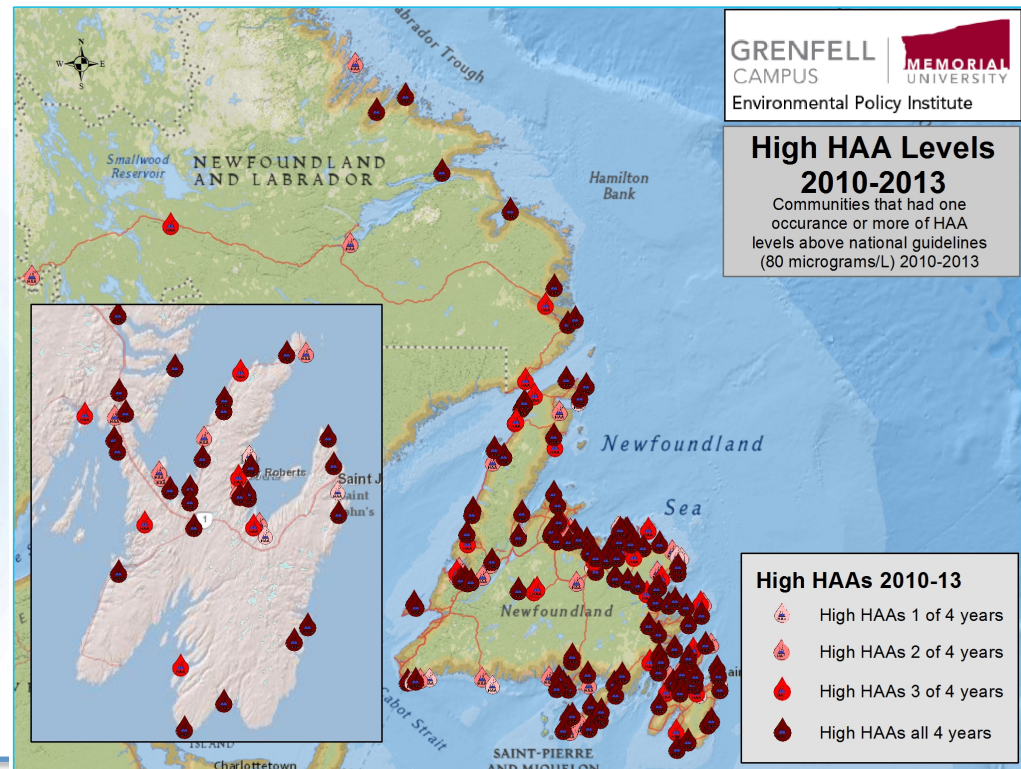


- ☒ **Communication**
- ☒ **Chlorination**
- ☒ **Lobby For Change**
- ☒ **New Ranking System**
- ☒ **Fast Action**

# Contamination



## Disinfectant By-Products (DBPs) (THMs and HAAs))



# Concerns:



- X Health Risks**
- X Type of Disinfectants**
- X Water Policies**
- X Old Technologies**
- X Communication**

# Solutions:



- ☒ **Household Treatments**
- ☒ **Alternative Disinfectants**
- ☒ **New Legislation**
- ☒ **More Research**
- ☒ **Public Education**



# Source Water Protection



*Safe Drinking Water Starts at the Source!*

# Concerns:



- X** Voluntary / Unenforced
- X** Few Management Plans
- X** Poor Policies
- X** Lack of Support
- X** Public Awareness

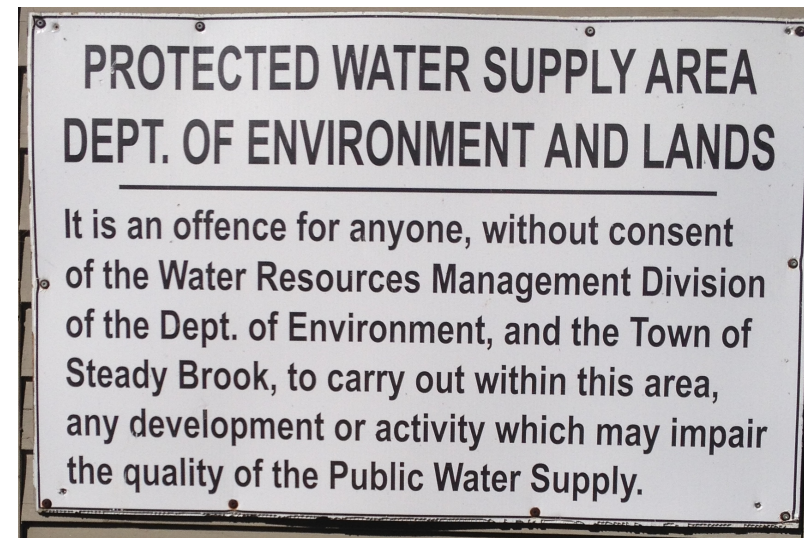
# Solutions:



- ☒ **Mandatory Protection**
- ☒ **Enforce Regulations**
- ☒ **More Research Needed**
- ☒ **Increase Levels of Support**
- ☒ **Improve Awareness**

# Source Water Protection in Steady Brook, NL

- **Created a watershed management plan**
- **Active watershed monitoring committee**
- **Allows logging in PWSA**





# Concerns with Logging in a PWSA


- **Sediment**
- **Nutrients**
- **Petroleum Products**
- **Chlorination by-products from organic loading**



# CBPPL's Operations in a PWSA

- **Regulatory requirements**
  - **Buffer zones, fuel storage**
- **Negotiated additional requirements**
  - **Winter roads**





**“We can get the best of both worlds in there so they can do their cutting but not allow access for recreation. So that’s my shining star of a success as to why we have plans and why we have source water protection in general.”**

**- Provincial Representative**



# Monitoring

- **Internal monitoring audits**
  - **Monthly environmental inspections**
  - **Intensive inspections every 4 months**
  - **Final inspection**
- **Municipal inspections**
- **Department of Environment and Conservation**



# Fieldtrips



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# Outside Environmental Standards

- **ISO 14001:2004 Environmental Management Standard (ISO)**
- **CAN/CSA Z809:2008 Sustainable Forest Management (CSA)**
- **Forest Stewardship Council National Boreal Standard (FSC)**





# Relationship with Steady Brook

**“I would say they were excellent to work with. They were very good corporate people. I would have no complaints and no hesitation recommending that they could go into their water supply because I am sure they would protect it safely.”**

**- Municipal Representative**



# Lessons Learned

- **Proactive/committed local government**
- **Active presence of the Department of Environment and Conservation**
- **Funding for watershed management plan**
- **Transparency and open communication with commercial users**
- **Responding immediately and expediently to concerns**
- **Starting small**





# MOVING FORWARD



# Questions?