

WNC Water and Wastewater Survey

Preliminary Findings

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Presentation Outline

1. WNC Water and Wastewater Survey Background

2. Demographics

3. Capacity

4. Funding

5. Human Resources

6. Water Literacy

**7. Comments &
Recommendations**

**8. Strategic
Planning**

1. WNC Water and Wastewater Survey Background: Purpose

- * “The purpose of a baseline study is to provide an information base against which to monitor and assess an activity’s progress and effectiveness during implementation and after the activity is completed”

(UN, <http://www.endvawnow.org/en/articles/959-baseline-studies.html?next=960>).

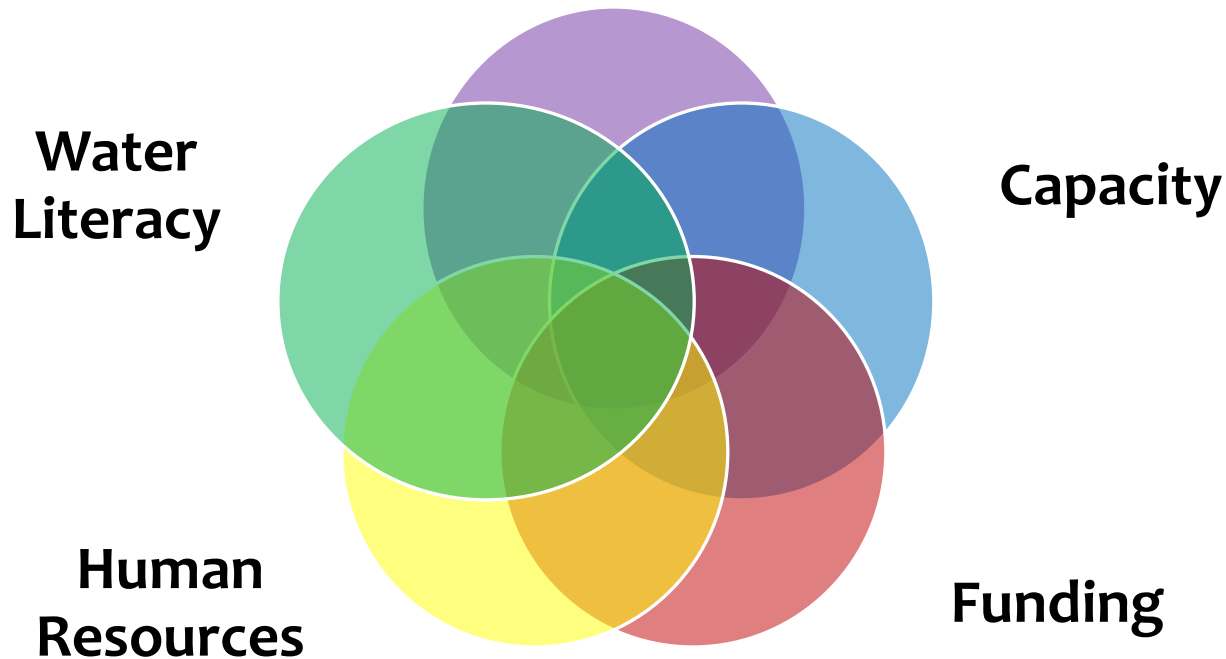
- * Starting point of a project
- * **Establish priorities and planning**
- * Attribution
- * Tool for evaluation

1a. WNC Water and Wastewater Survey Objectives

- * To understand the community / municipality's perspective of their current water / wastewater system; and
- * To assess the water /wastewater needs of northern Alberta communities within the NADC boundary in adherence to the WNC's mission.

1b. WNC Water and Wastewater Survey Focus

Demographics



1c. WNC Water and Wastewater Survey Process



Communities invited to participate

- Counties: 21
- Municipalities / towns: 34
- First Nations: 24
- Metis Settlements: 8



- * Survey goes live
- * Invitations were sent to all communities with an elected council



- * Data is gathered and analyzed



Communication *

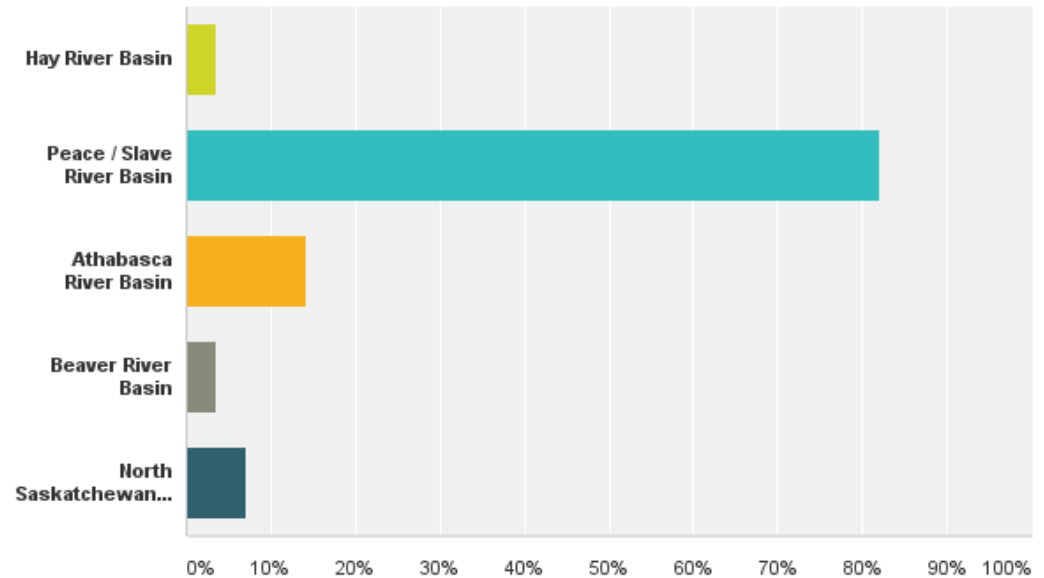
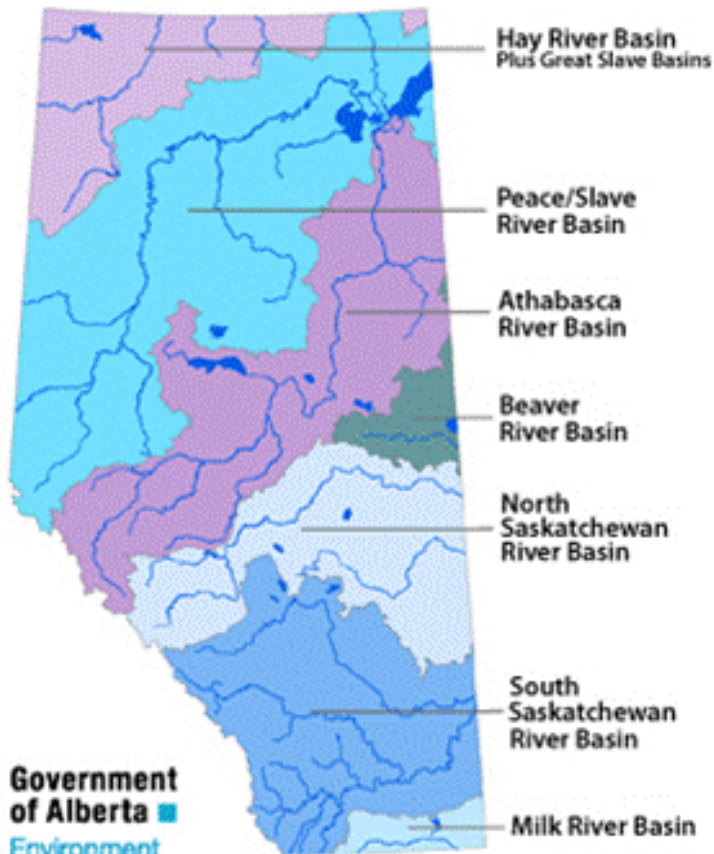
2. Demographics: Community Participation

- * 16 / 21 counties, 12/34 municipalities, and one Metis Settlements.
- * One First Nation community invited NADC to discuss the survey.
- * 16 counties provide water and wastewater service to:
 - * 60 hamlets,
 - * 3 towns,
 - * 5 First Nations and
 - * 1 Metis Settlements) and supporting services 10 First Nations and Metis Settlements.



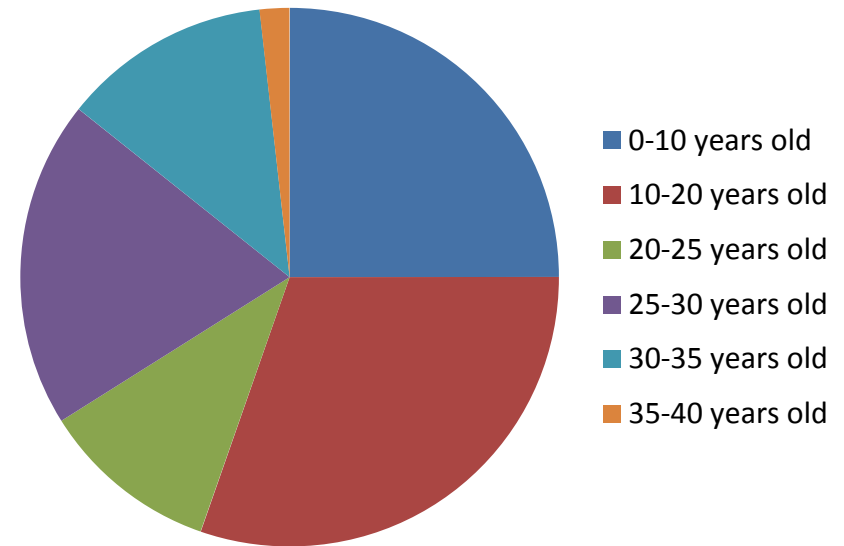
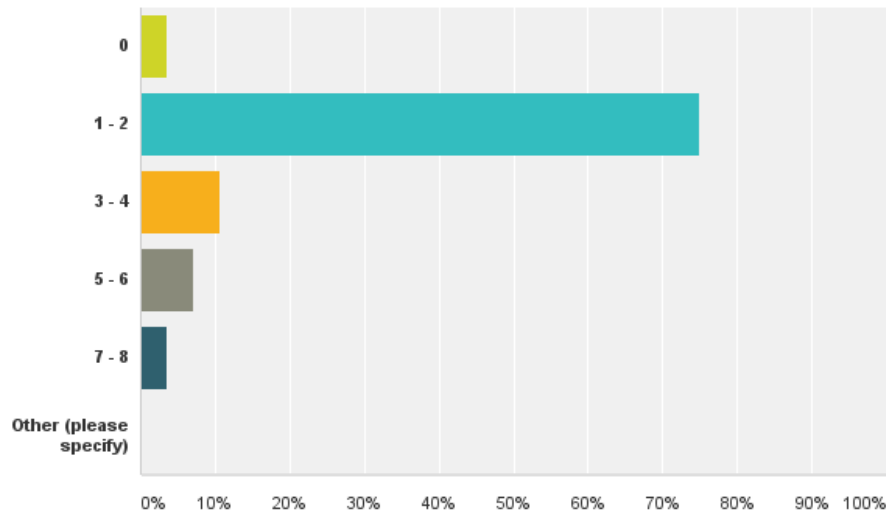
2a. Demographics: Watershed Representation

Alberta's Major River Basins



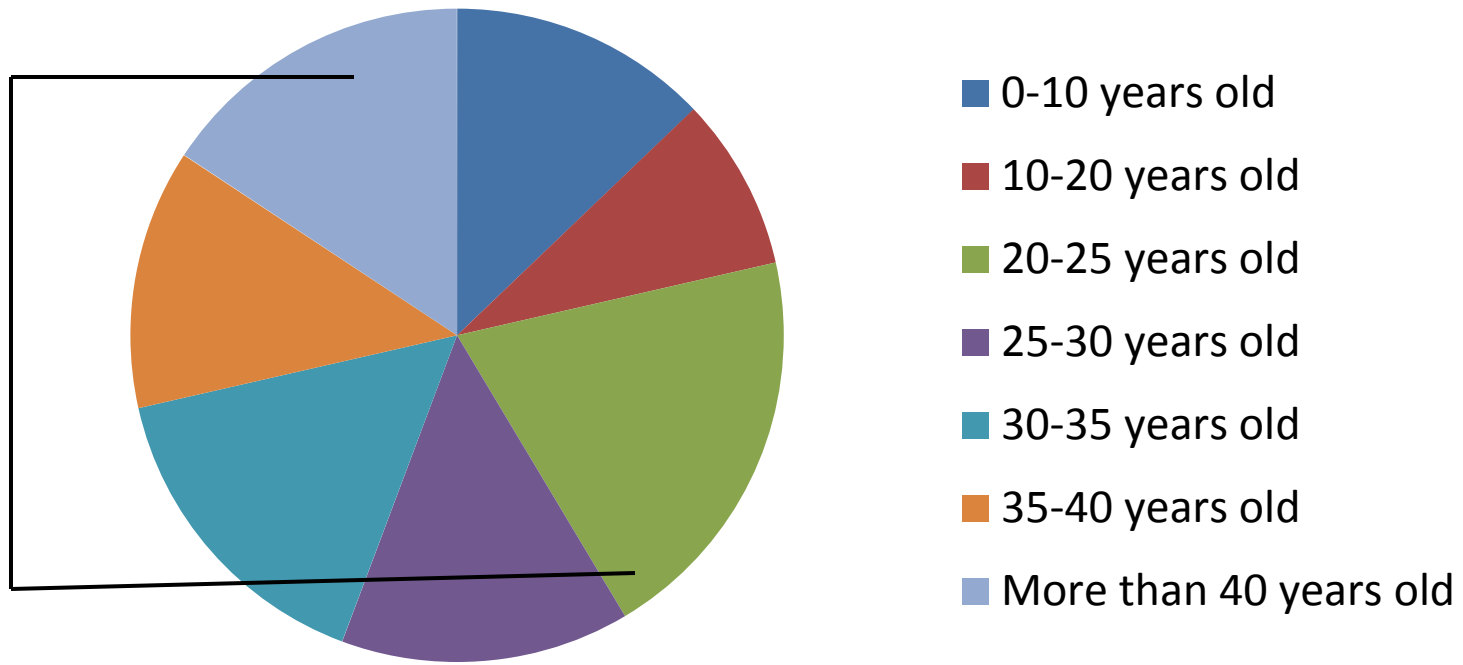
3. Capacity: Number and Age of Water Treatment Plants

Age of Treatment Plants



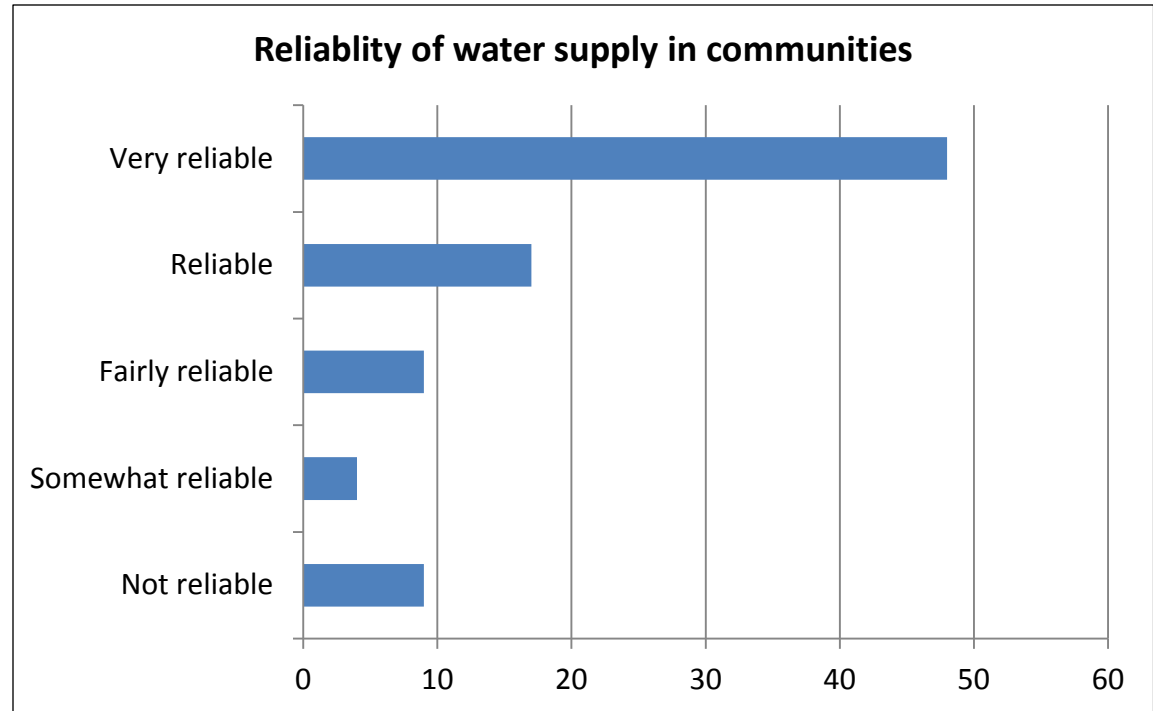
3a. Capacity: Age of Water Distribution Systems

Age of Water Distribution Systems



3b. Capacity: Water Source for Treatment Plants

Type of water	Treatment Plants Access Source
Surface	16
Ground	23



3c. Capacity: Reasons for Perceptions of Reliability

- * **Very Reliable: Trust**

- * Trusted provider
- * Trusted source of water: aquifer, lake, River, wells
- * Based on duration of time, relationship, technology implementation (generators), newness of the plants



- * **Reliable: Assessment (informal or formal)**

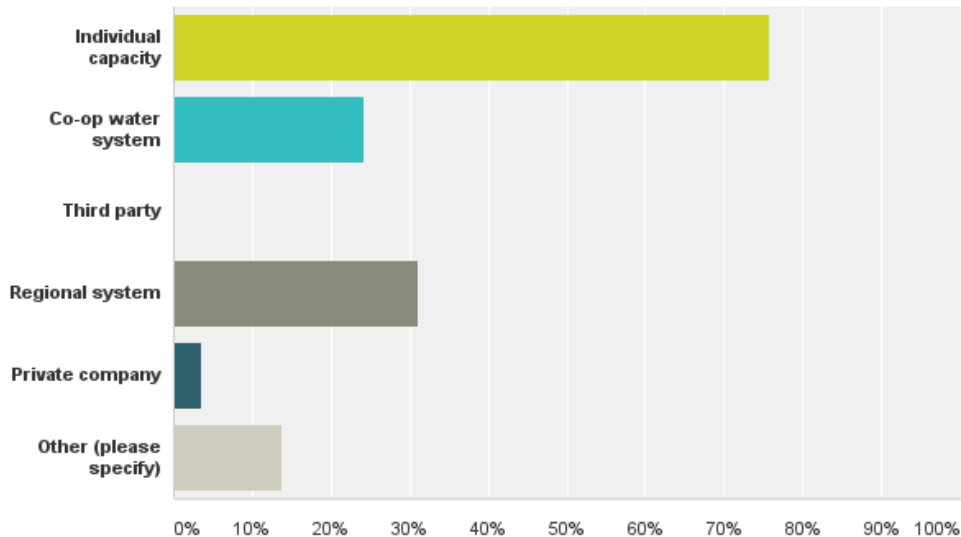
- * Study was conducted
- * Historical reliability / experience
- * Dependable system
- * Recognize limitations (depth of ground to water, run-off)

Continued: Reasons for Perceptions of Reliability

- * **Fairly Reliable: Limitations and History**
 - * Duration of raw water storage to provide reservoirs
 - * Reliability dependent on source
- * **Somewhat Reliable: Recognize Limitations**
 - * Single intake jams frequently in the spring
 - * Limited storage capacity
- * **Unreliable: Degradation of water source**
 - * Declining aquifer and old wells

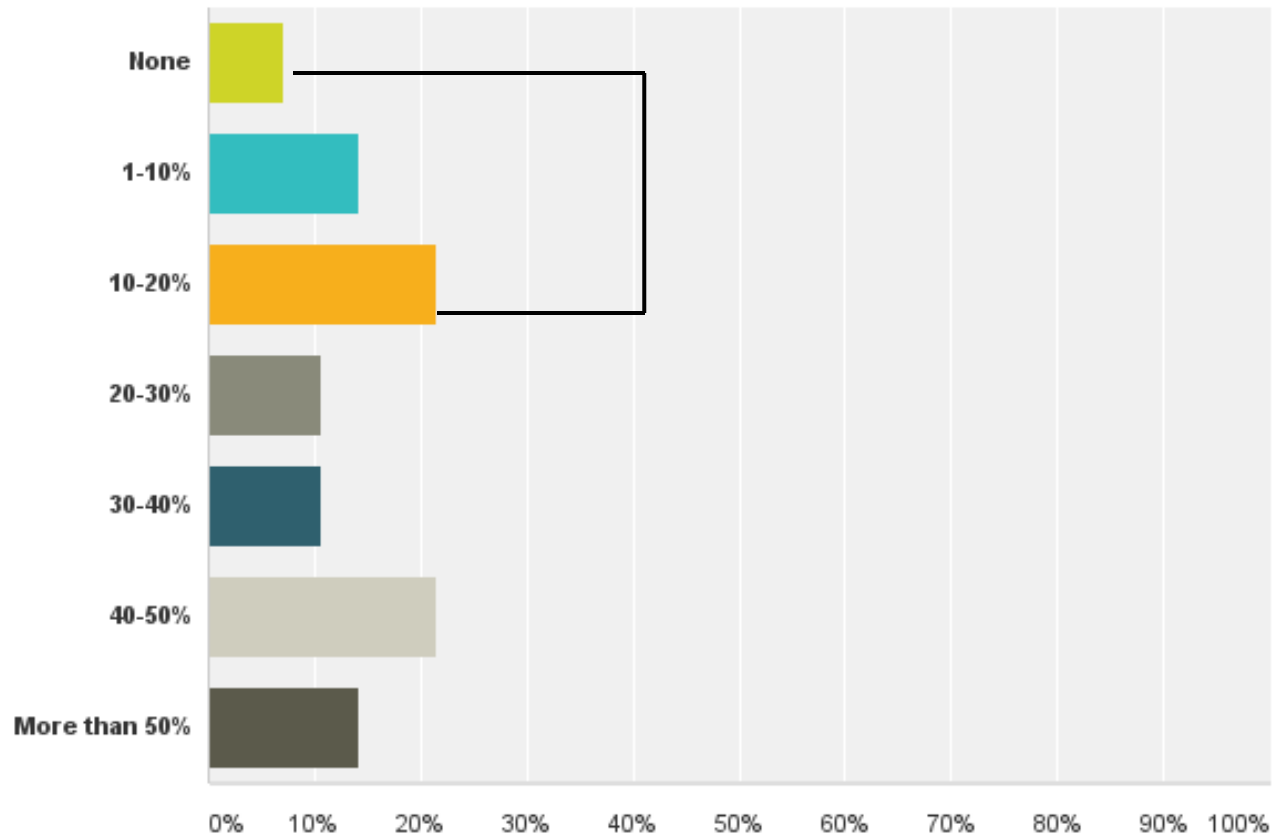


3d. Capacity: Type of Water Systems

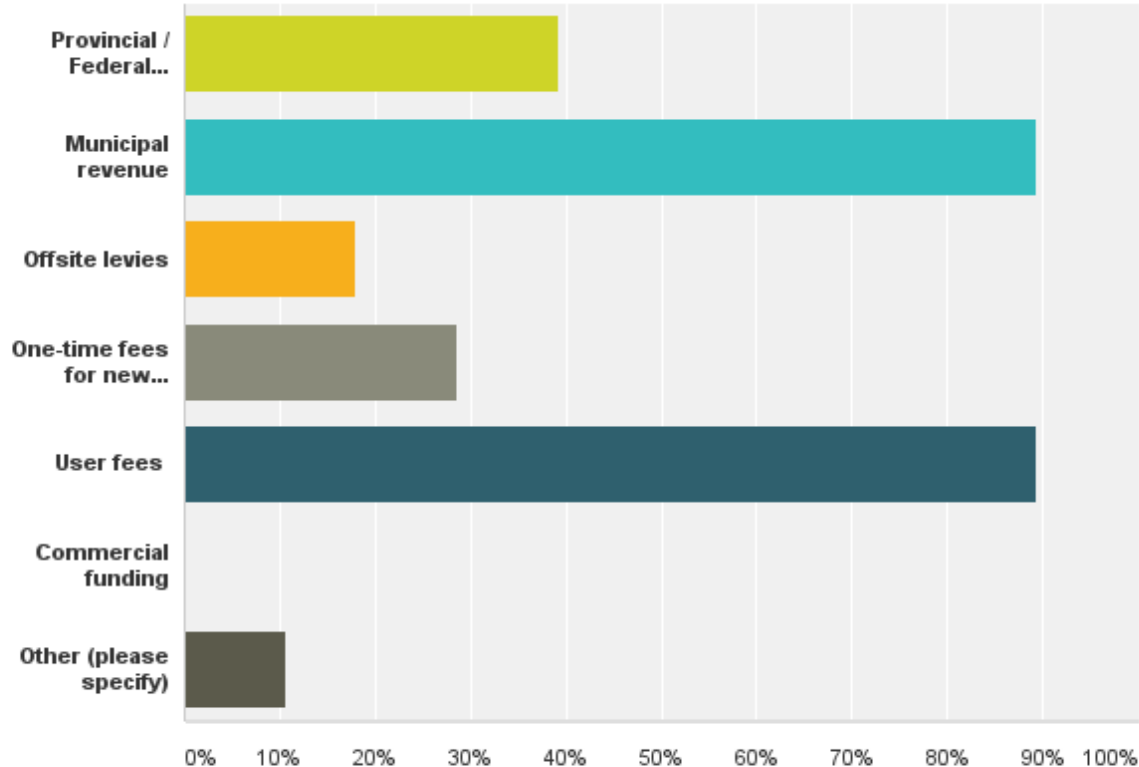


- * 53% of communities' water facilities served a population range between 1,000 – 10,000.
- 76% of participants have individual capacity water systems

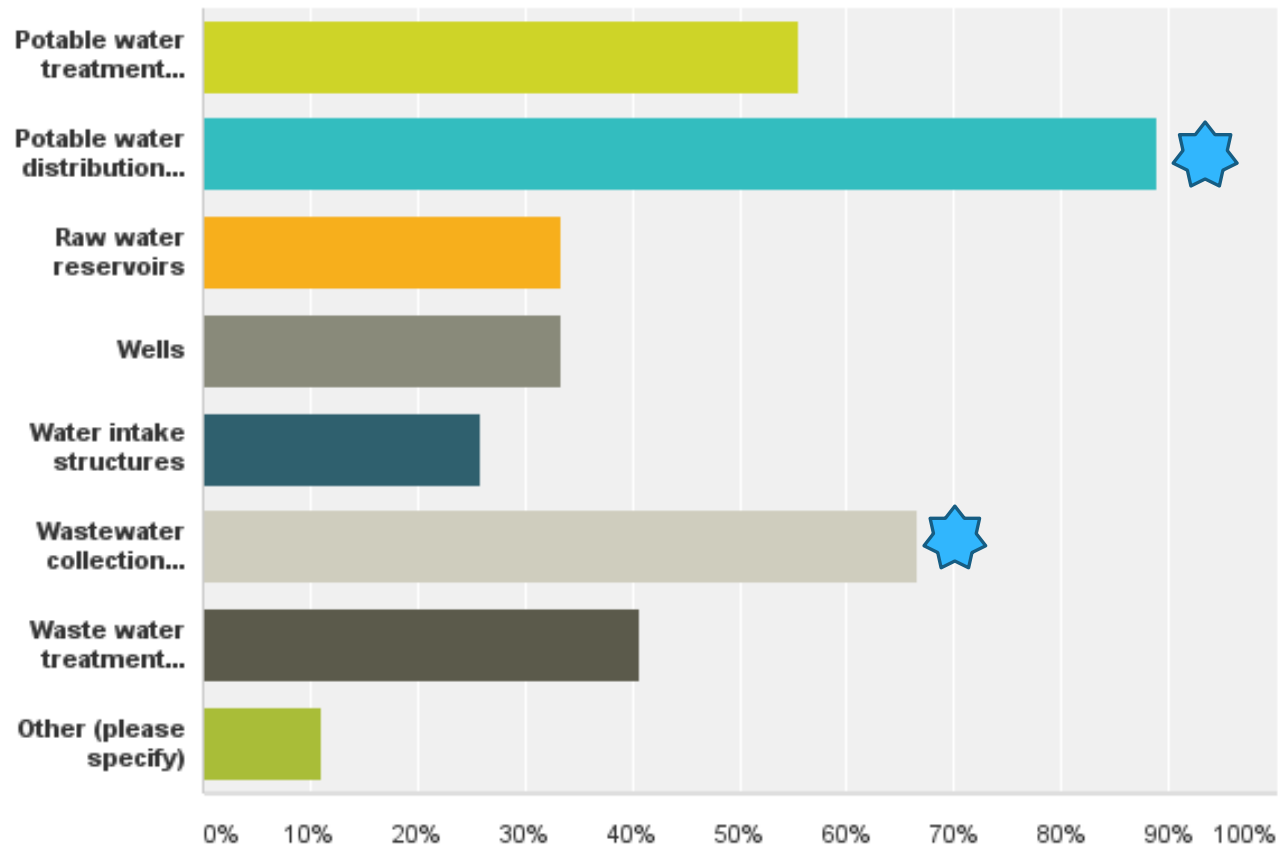
3e. Capacity: Extra Water Treatment Capacity



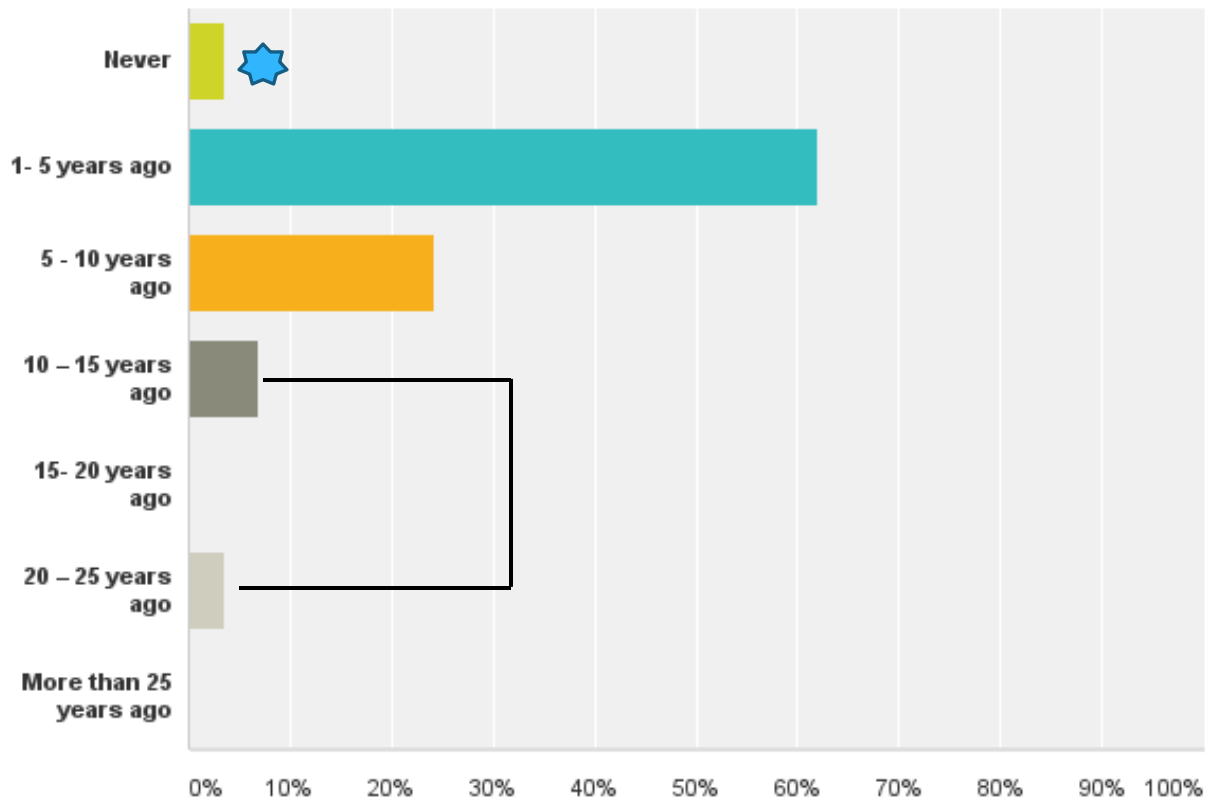
4. Funding for Water / Wastewater Systems: Operational Funding



4a. Funding: Areas of the Water System Requiring Upgrades

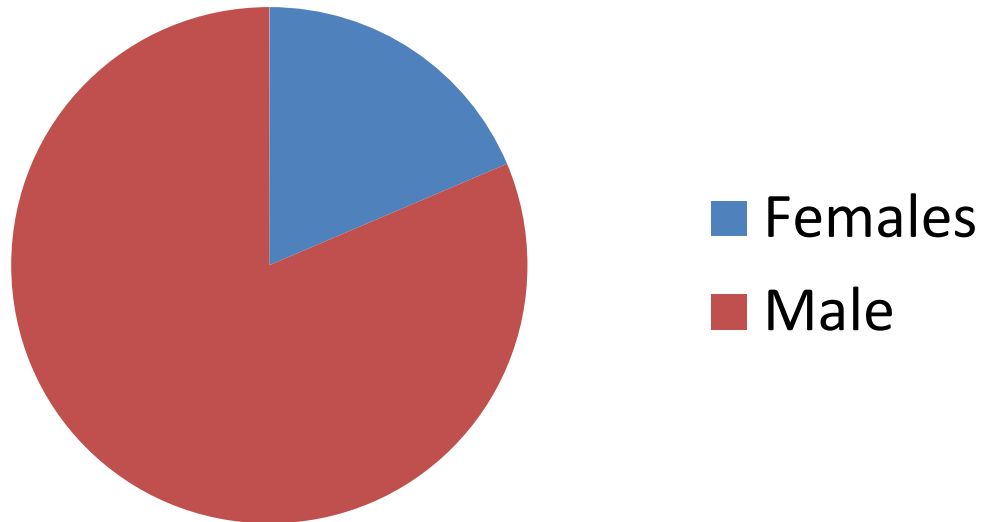


4b. Funding: Last Time Community Completed Water System Improvements

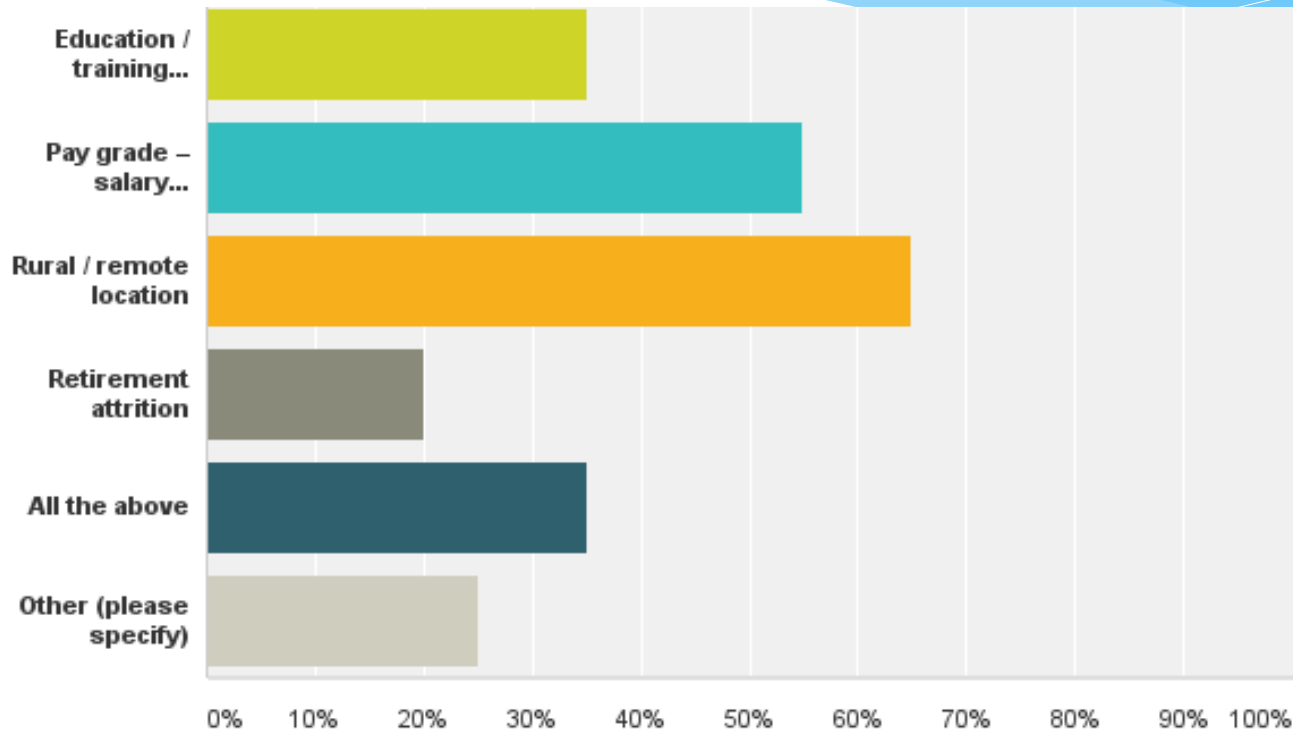


5. Human Resources: Gender of Operators Employed

Number of Operators



5a. Human Resources: Barriers to Retaining Qualified Operators

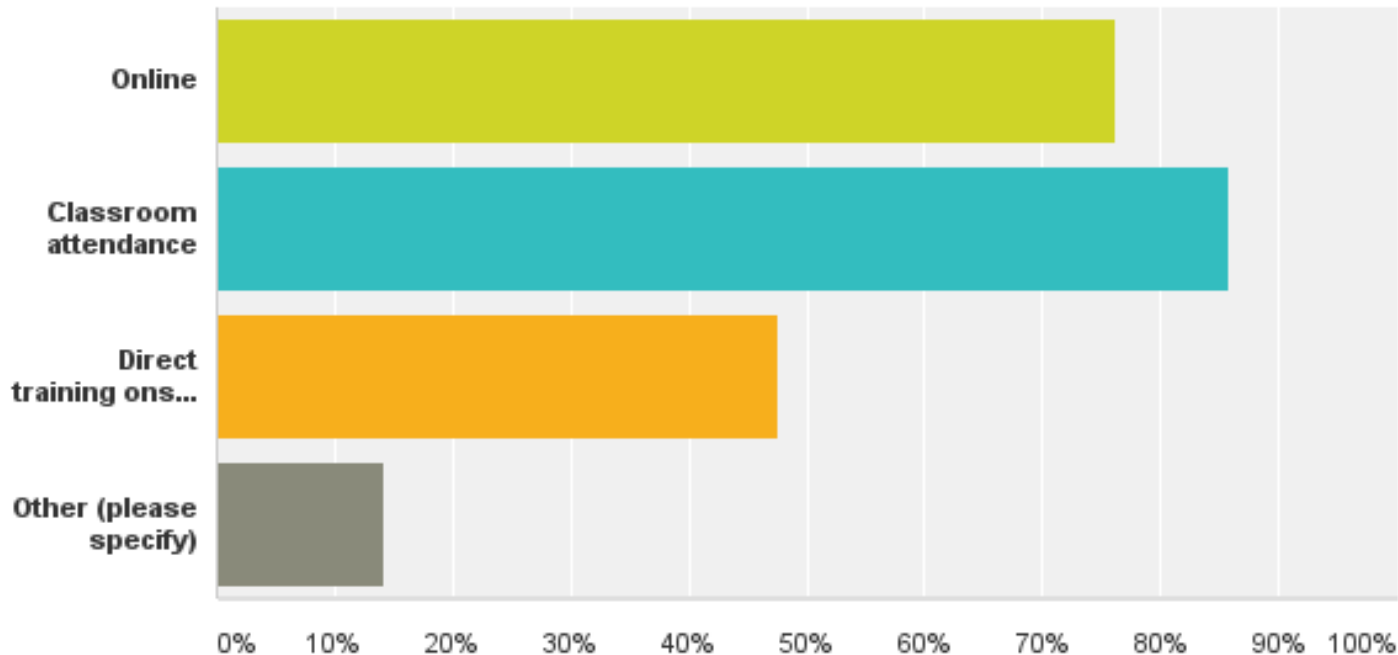


5b. Human Resources: Courses Requested for Operators

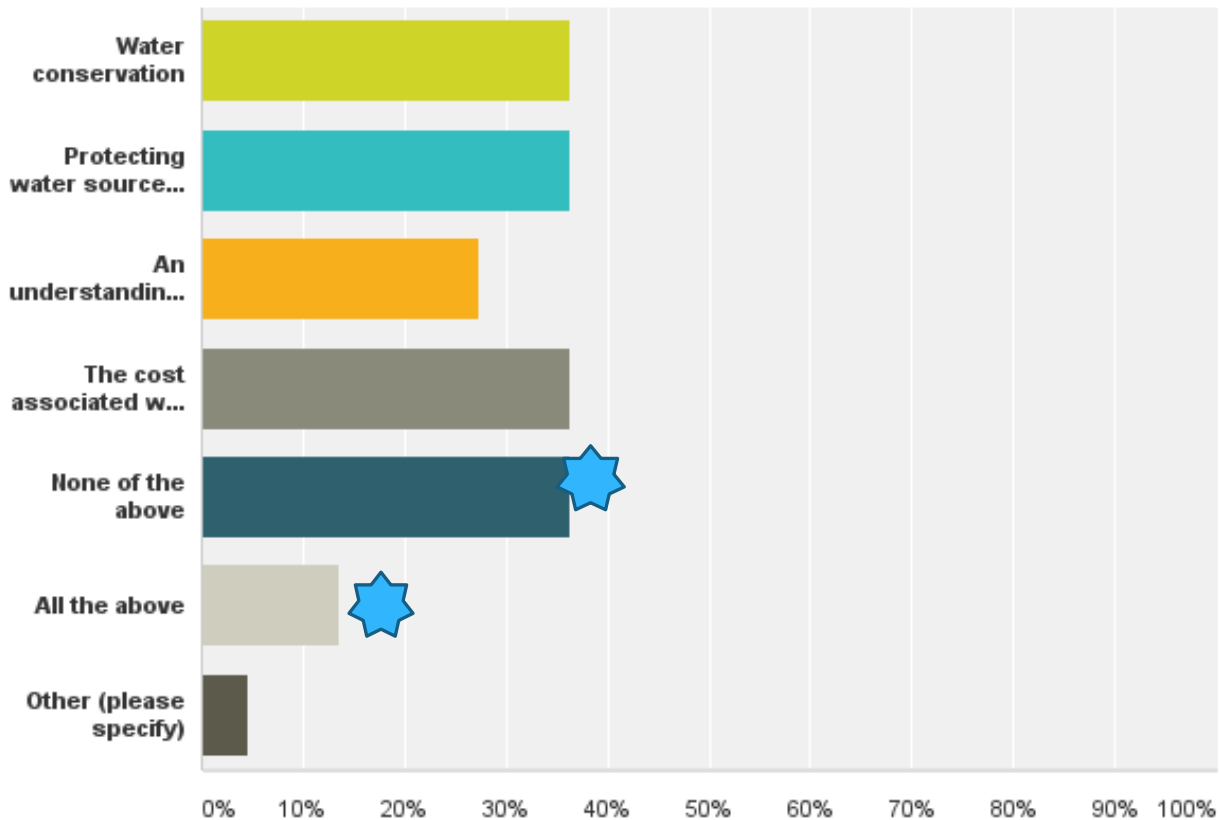


- * Water Treatment
 - * Activated sludge biological nutrient removal
 - * Disinfection: UV/ chorline (virus log), chloramination
- * CEU accredited courses for water treatment / distribution, wastewater collection, and wastewater treatment
- * Level 1 and small communities
- * Equipment and Repairs
 - * Courses on distribution and collection repairs & replacement
 - * Valve actuator and pump maintenance
 - * Equipment operation
 - * Water metering Lagoon monitoring

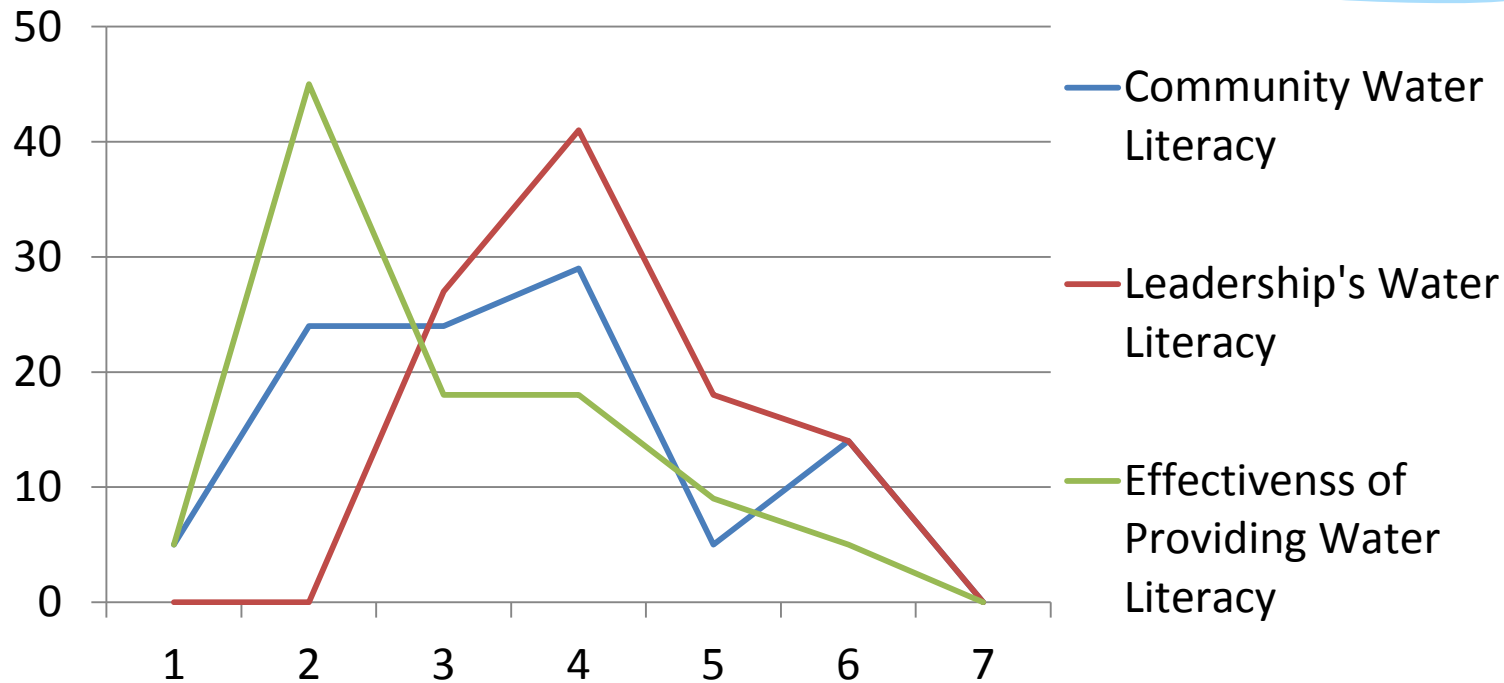
5c. Human Resources: Preferred Method of Course / Exam Delivery



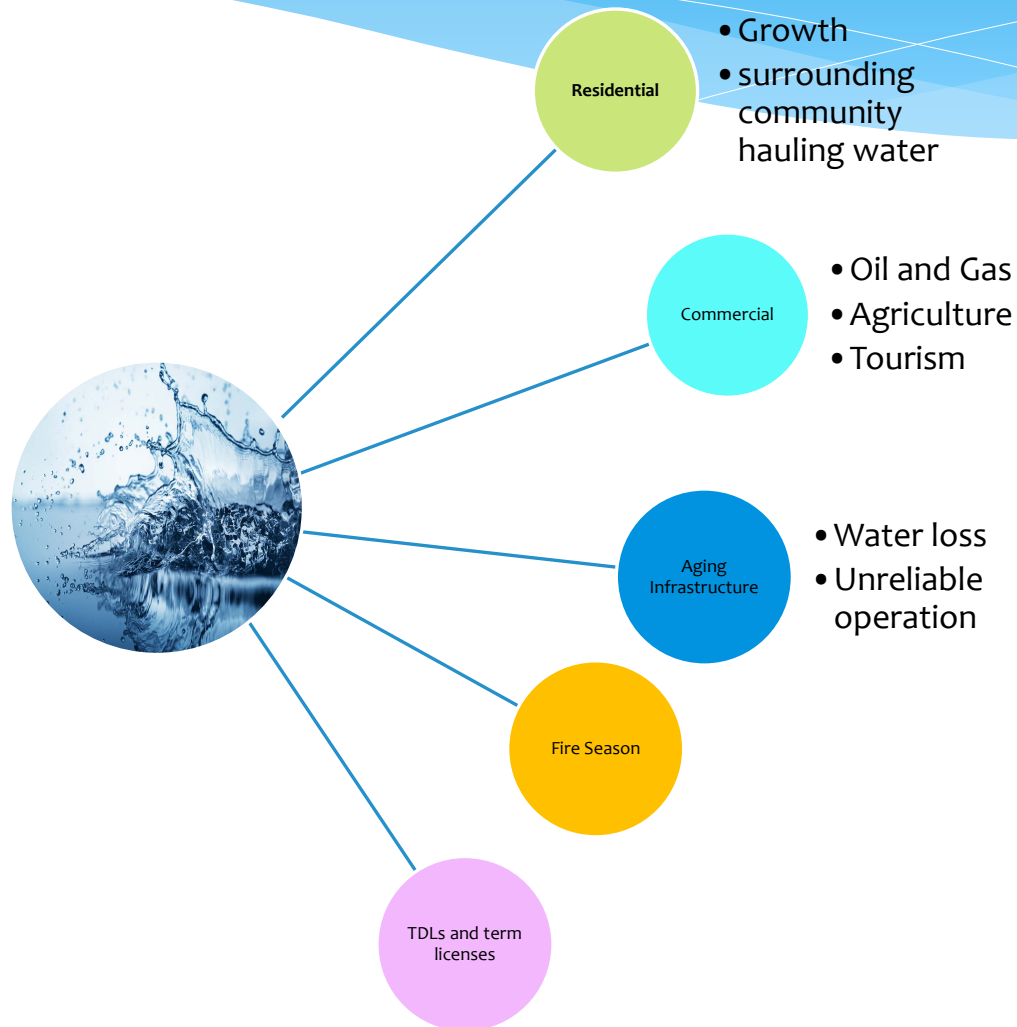
6. Water Literacy: Type of Water Literacy Activity



6a. Water Literacy: Perception of Water Literacy



6b. Water Literacy: Demands Placed on Water Source



7. Concluding Comments & Recommendations

1. **Human Resources:** In partnership, systematically focus on water operators (recruitment, diverse selection of courses and methods of delivery) aligns with TOR
2. **Water Literacy:** Develop partnership with AUMA to develop programs that are culturally specific to communities (ie. Not a one size fits all message)



7a. Recommendations...

3. Funding and Aging infrastructure is a huge challenge for municipalities that will require long term strategic planning

- * Collaborate with neighbors and partners to address common needs
- * Investigate full cost recovery and implementing water meters to address operational costs
- * Repair and maintenance
- * Funds available for municipal infrastructure?

Limitations of the Research

- * Preliminary results demonstrate no outliers
- * Limitations of the research:
 - * Focus of the survey was to gain community perspectives
 - * Provides a snapshot of what is occurring in the region, but no opportunity to interview and fully investigate the “why” aspect of answers
 - * Reminders were limited due to election
 - * Consider other research where needed ie. infrastructure evaluation and watershed evaluations for viability of supply.

Strategic Planning

“A systematic process of envisioning a desired future, and translating this vision into broadly defined goals or objectives and a sequence of steps to achieve them.”

(<http://www.businessdictionary.com/definition/strategic-planning.html>)

1. Where are we now?
2. What are our priorities?
3. What do we need to do?
4. Who is responsible?

WNC Terms of Reference