BCWWA
BC WATER & WASTE ASSOCIATION

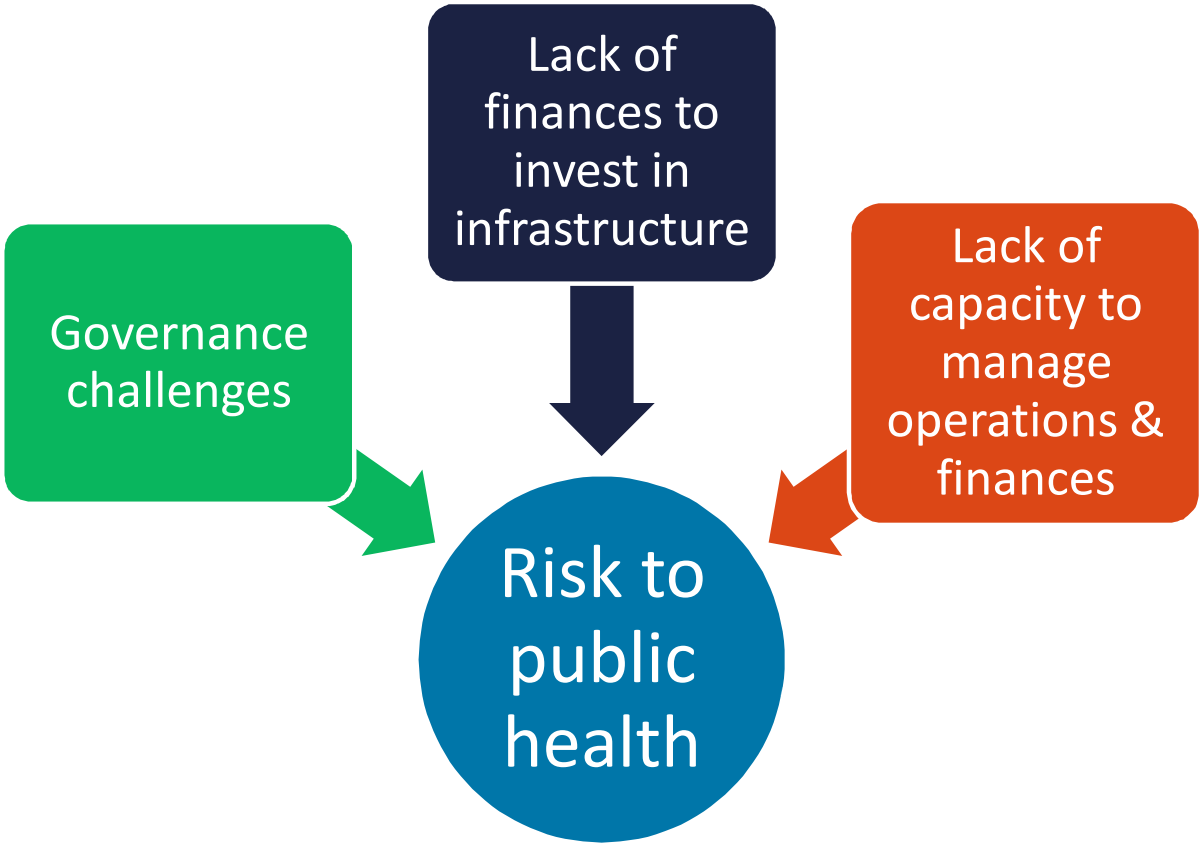
SUPPORTING THE WATER INDUSTRY

BUILDING CAPACITY OF SMALL WATER SYSTEMS IN BC

Drinking Water Workshop

April 17, 2018

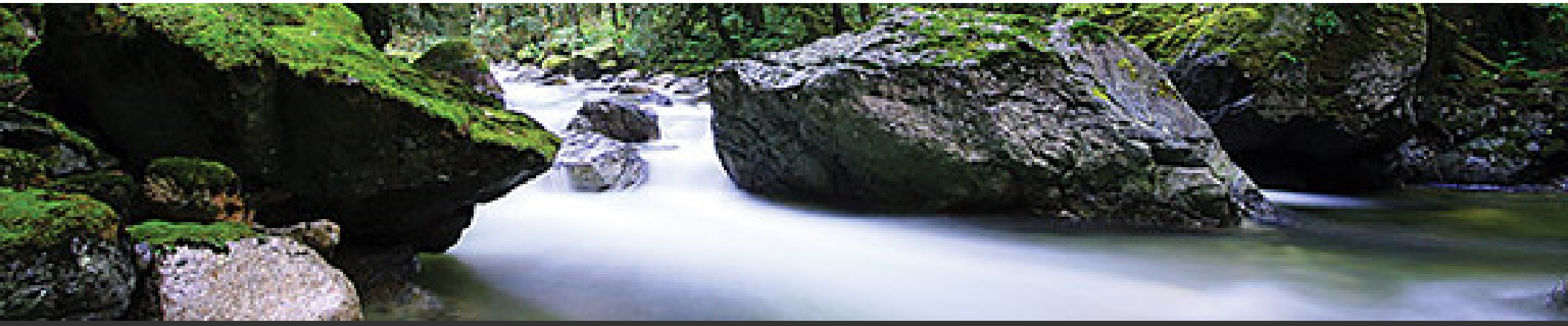
WHAT WAS THE PROBLEM?



GOAL

» Build **financial and managerial capacity** among small water systems owners and operators so that:

- Water system owners and operators **make informed decisions**
- **Health risks** to small water system users **are reduced**




INFORMED
DECISIONS
END 1:
Water users, regulators and elected officials make informed decisions about water services

OUTCOMES

» Establish an ongoing **structure to deliver information and resources** to small water systems.

» Seed a "**culture change**" among small water system owners and their users.

CONTRIBUTORS

- Small Water Users Association of BC
- Lidstone & Company
- Res'eau WaterNet

TODAY'S PRESENTATION

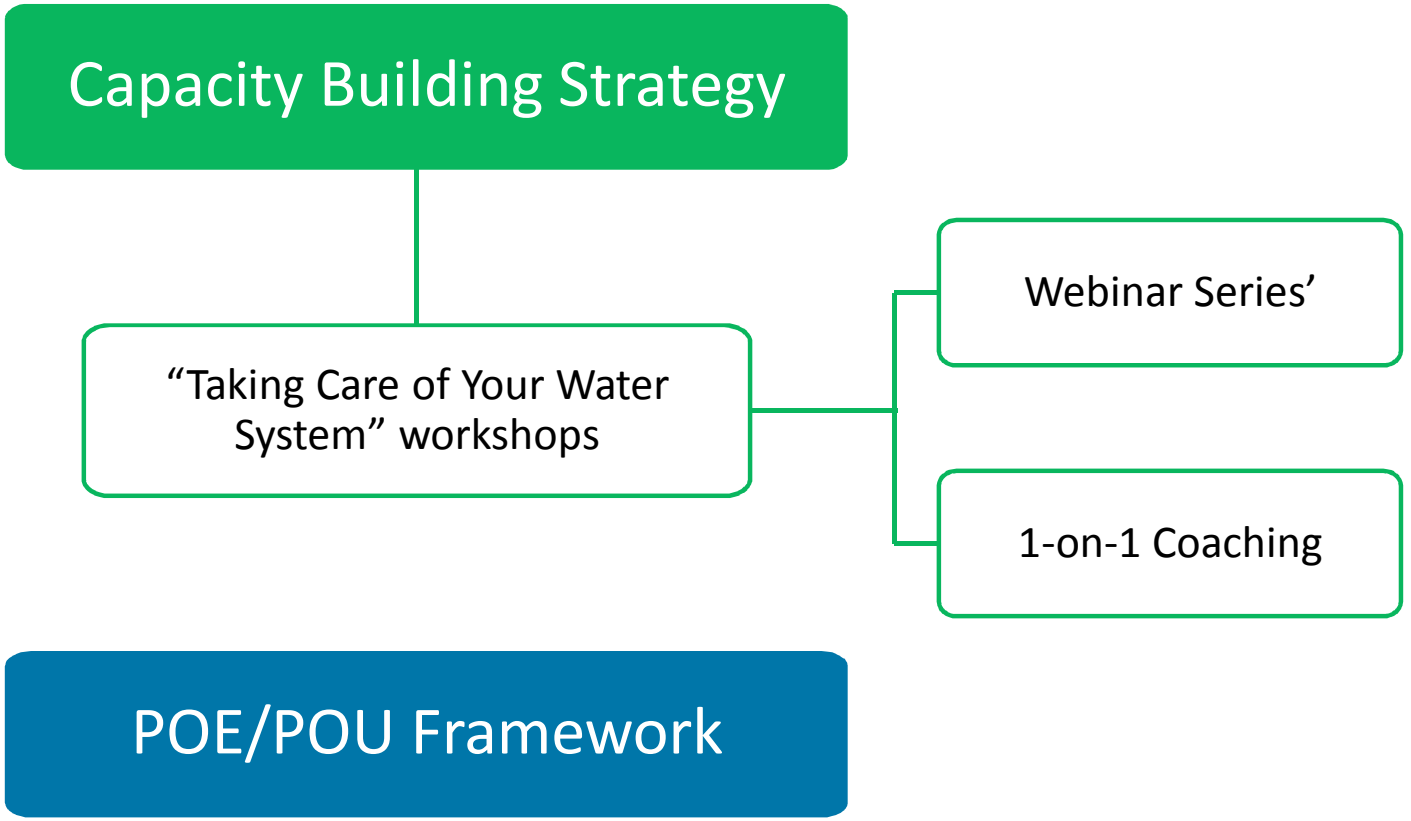
» GOAL & OUTCOMES

» PROJECT COMPONENTS

» CAPACITY TRENDS & WORKSHOP OUTCOMES

» FINDINGS & SUCCESSES

PROJECT COMPONENTS



“TAKING CARE OF YOUR WATER SYSTEM” WORKSHOPS

» Introduce owners to their **responsibilities and risks**

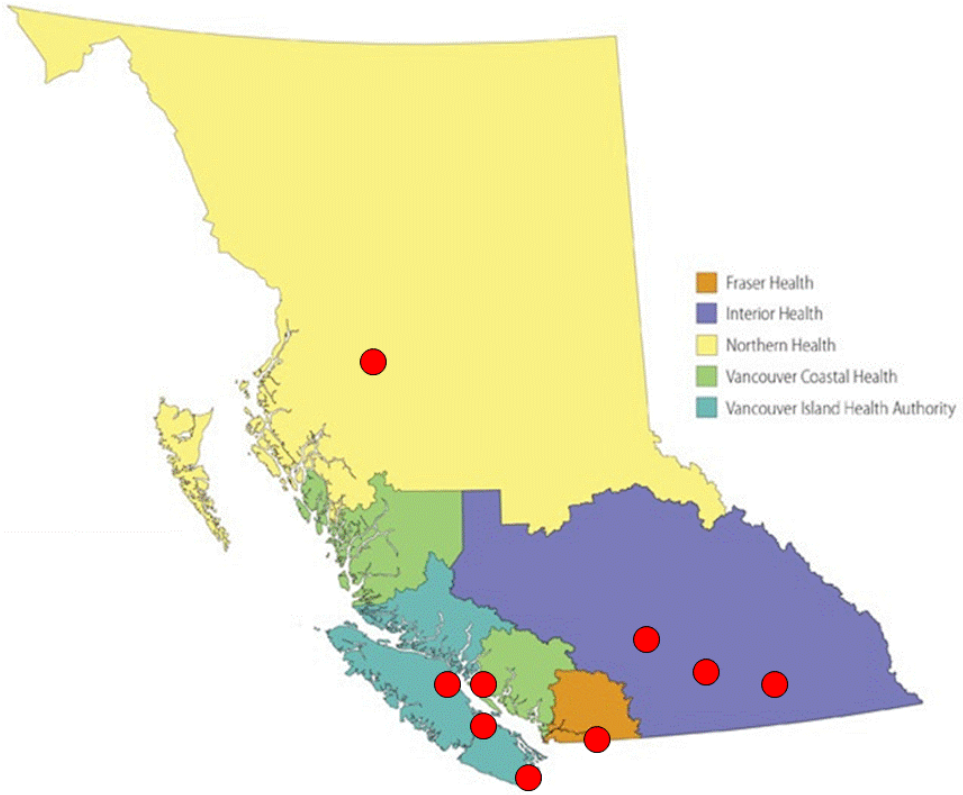
» Help owners **self-assess** potential areas of risk

» Provide **tools and resources** to address risks

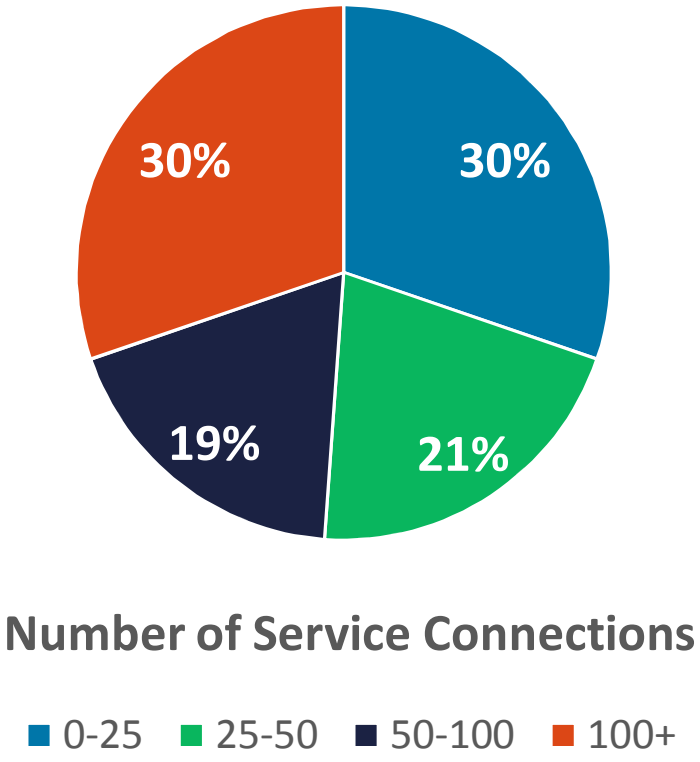
SELF-ASSESSMENTS

COMPONENT	DESIRED OUTCOME	ADEQUACY ASSESSMENT RATING						VALUE	PRIORITY
TECHNICAL CAPACITY	Technical Capacity: Physical ability of a water system to meet regulatory requirements and customer satisfaction, including the adequacy of physical infrastructure (e.g., treatment, distribution, and facilities), and the adequacy of the source water.	0 Don't Know	1 Very Poor	2 Poor	3 Fair	4 Good	5 Very Good	Input Number	Rating (A, B, C, D)
(A) Source Protection	Source is adequately protected from contamination	( )	( )	( )	( )	( )	( )	[ ]	[ ]
(B) Source Quantity	Have sufficient quantity to meet current & future demands (*Average day, Peak day, Fire flow*)	( )	( )	( )	( )	( )	( )	[ ]	[ ]
(C) Source Quality	Best available water quality source being used - one with limited treatment challenges. *(VG = source with no health related parameters of concern ; VP = source with many health related parameters of concern)*	( )	( )	( )	( )	( )	( )	[ ]	[ ]
(D) Treatment Infrastructure	Treatment in place that removes and/or neutralize hazards, that is in good condition & has not exceeded its useful life. *(Need in place chemical conditioning, filtration & disinfection barriers are appropriate for both health & non-health related parameters).*	( )	( )	( )	( )	( )	( )	[ ]	[ ]
(E) Distribution Infrastructure	Distribution system (*piping, pumping & storage*) that is: (1) in good condition, (2) has not exceeded its useful life, (3) prevents recontamination & water quality degradation after treatment, and (4) delivers sufficient water quantity and pressure. *(i.e. Desire: stable water quality & pressure; backflow & cross contamination prevention means & safeguards; minimal water loss)*	( )	( )	( )	( )	( )	( )	[ ]	[ ]
(F) Alarming & Security Devices.	Real time pressure, level & water quality monitoring & illegal entry alarming	( )	( )	( )	( )	( )	( )	[ ]	[ ]
		(G) Point Total *(out of 30 maximum possible)*							
		(H) Percentage Tally = (Point Total / 30) X 100%							
OPERATIONAL CAPACITY	Operational Capacity: Operational and maintenance management ability of a water system to meet regulatory requirements including knowledge and capability of personnel, routine aspects of system operation (e.g., testing, monitoring, and routine maintenance adequacy), and procedures in place to allow consistent and safe operation of the system and ability to handle non-routine situations.	0 Don't Know	1 Very Poor	2 Poor	3 Fair	4 Good	5 Very Good	Input Number	Rating (A, B, C, D)
(A) Operating Staff	Have operators with appropriate knowledge, skills & training to operate the system. *(1= Volunteer with No training; 2= Volunteer with some Training 3= Trained volunteer with DRC oversight by Certified Operator, 4= Have DRC certified operator - part time availability, 5 - Have DRC certified operator - full time availability*	( )	( )	( )	( )	( )	( )	[ ]	[ ]
(B) Water testing & Monitoring	Water quality testing & monitoring in accordance with regulatory requirements & best practices	( )	( )	( )	( )	( )	( )		
(C) Data Recording and Logging	Detailed monitoring & recording of operating conditions (water quality, daily production, repairs or maintenance undertaken, chemical usage, storage tank levels, water pressure, pump run hours, instrumentation readings, customer complaints)	( )	( )	( )	( )	( )	( )	[ ]	[ ]
(D) Routine checks, adjustments, maintenance & calibration	Thorough checks to assess condition & ensure system is operating properly. Make operational adjustments as needed to ensure effective operation. Maintain inventories (treatment chemicals, testing equipment supplies etc.). Inspect clean, maintain, calibrate and adjust chemical feed equipment and instrumentation as needed.	( )	( )	( )	( )	( )	( )	[ ]	[ ]
(E) Facility Maintenance	Facilities & grounds kept clean and equipment accessibility maintained at all times	( )	( )	( )	( )	( )	( )	[ ]	[ ]
(F) On-going Training	Receive ongoing up-to-date training to stay current on regulations, standards and best practices	( )	( )	( )	( )	( )	( )	[ ]	[ ]
		(G) Point Total *(out of 30 maximum possible)*							
		(H) Percentage Tally = (Point Total / 30) X 100%							

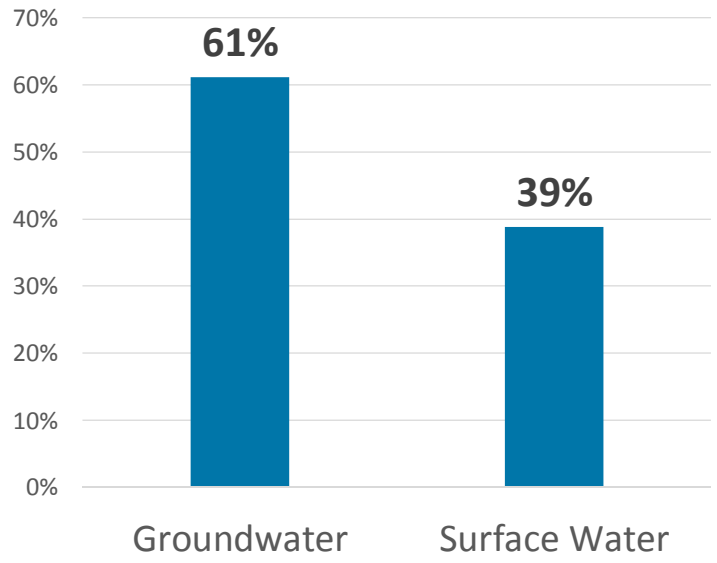
WORKSHOP LOCATIONS



SYSTEM SIZE & SOURCE

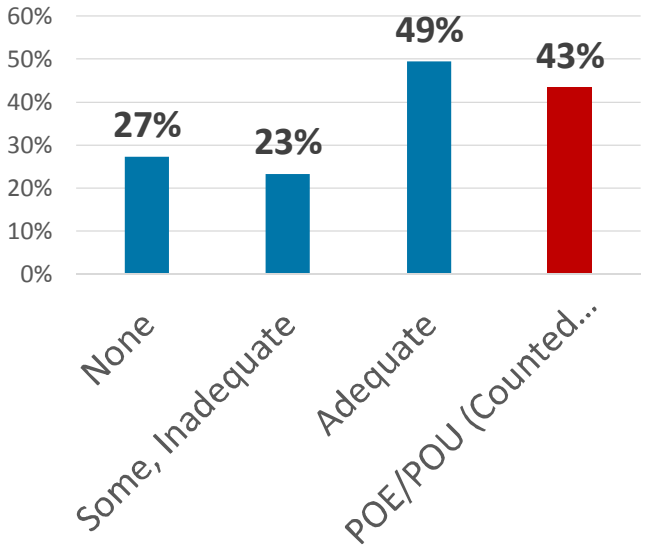


Number of Service Connections

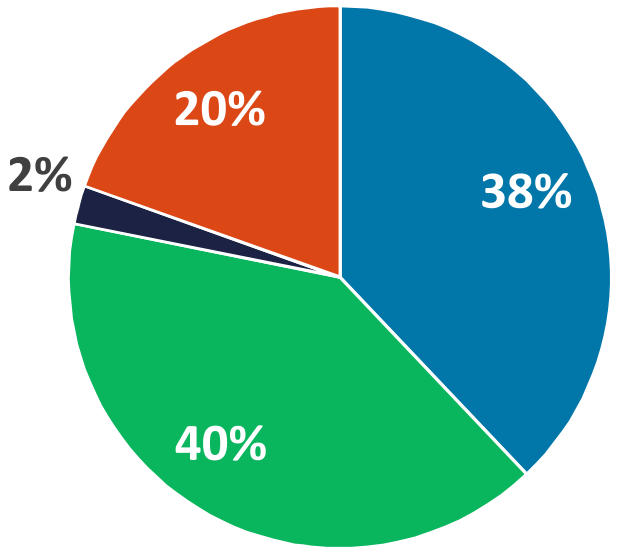


Source Type

TREATMENT & USE OF OPERATORS



Treatment



Operators

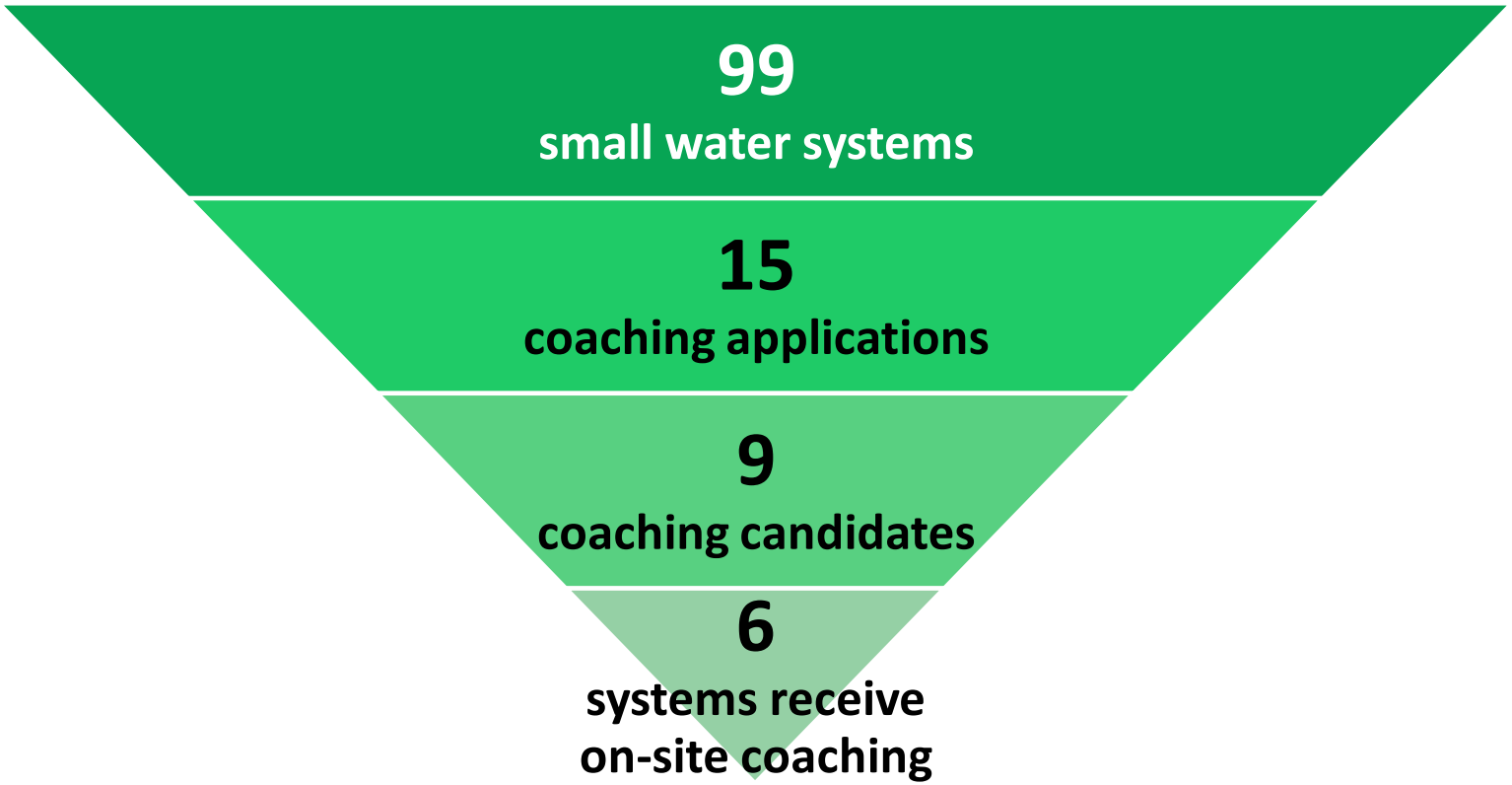
Paid Volunteer None Unknown

WEBINARS

» Regulations and Guidelines for Small Water Systems in British Columbia
  - 4 videos

» Financial Best Management Practices
  - 8 videos

1-ON-1 COACHING

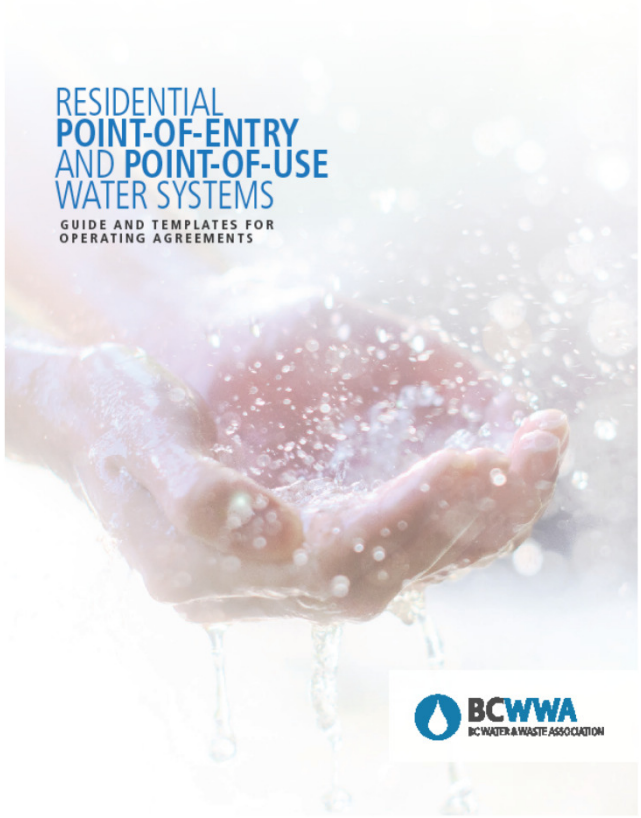


POE/POU RESOURCES

» POE/POU **Guide**

» **Term Sheet** describes and considers:

- Roles and responsibilities of the parties;
- Legal requirements of the *Drinking Water Protection Act*; and
- Liability risks of the parties.



TODAY'S PRESENTATION

» GOAL & OUTCOMES

» PROJECT COMPONENTS

» CAPACITY TRENDS & WORKSHOP OUTCOMES

» FINDINGS & SUCCESSES

CAPACITY TRENDS

Operational

Financial

- Incomplete asset inventories
- Lack of long-term financial planning
- Rate structures don't cover future expenses
- Inadequate fiscal management tools

Managerial

- Lack of standard, documented procedures
- Poor linkages with community re: system improvements

Technical

- Inadequate treatment infrastructure
- Lack of security and real-time monitoring equipment

WORKSHOP OUTCOMES

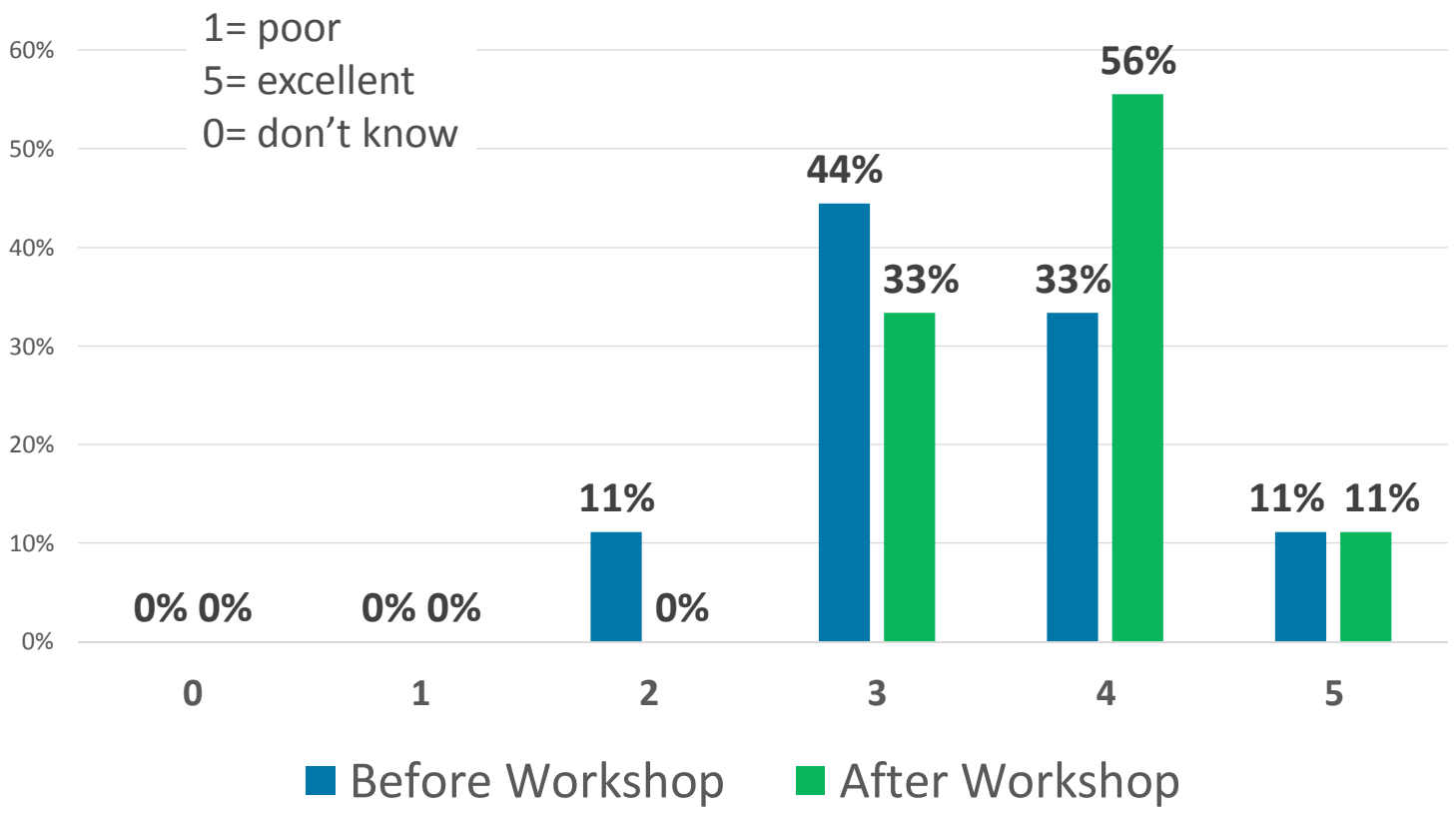
» Added a monitoring **log book** and moved paid operator from part-time to full-time

» Hired a contractor to develop **asset inventory list** and **capital improvement plan**

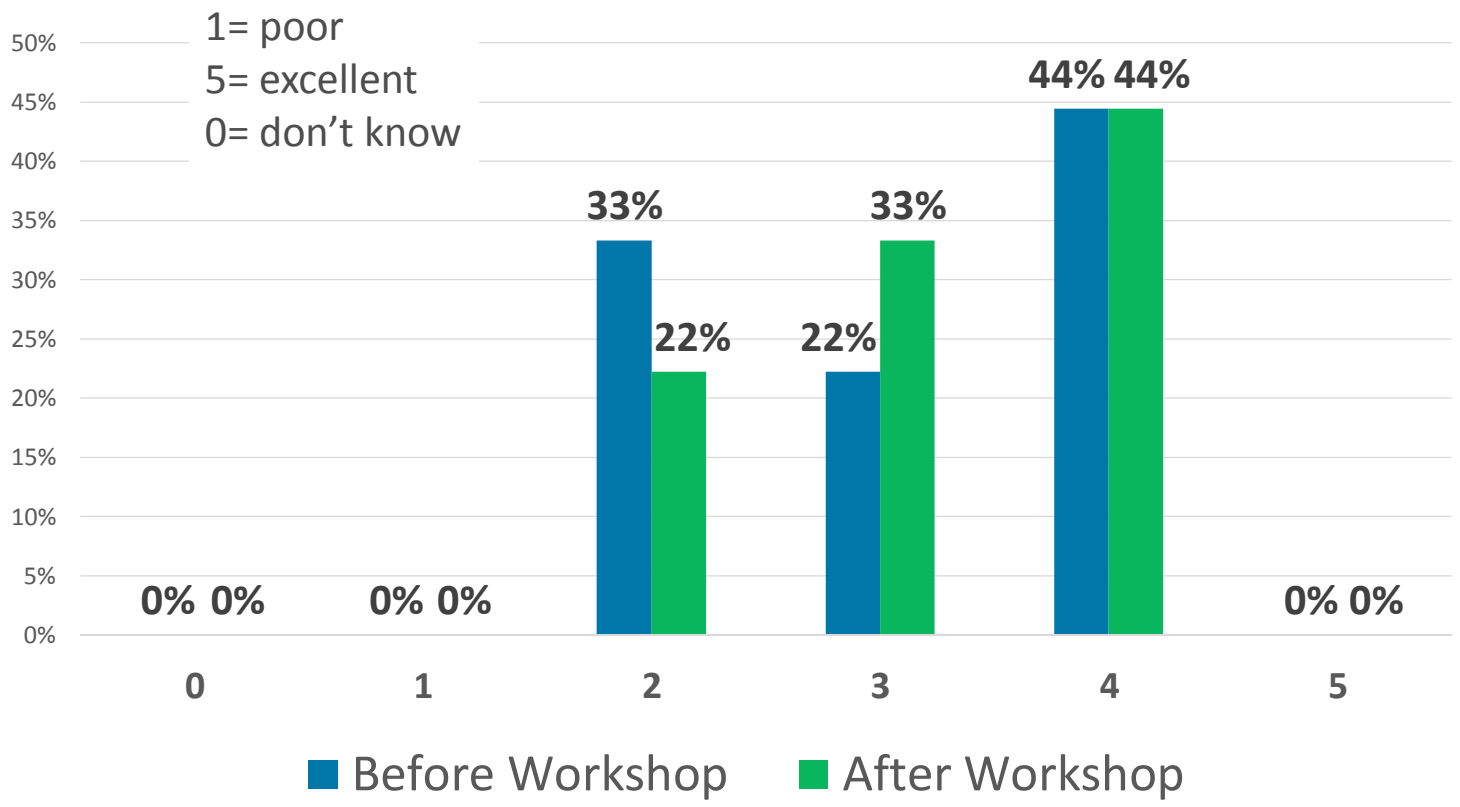
» Began drafting instructions for **daily maintenance procedures**

» Logged water quality data and piloted **UV treatment** system

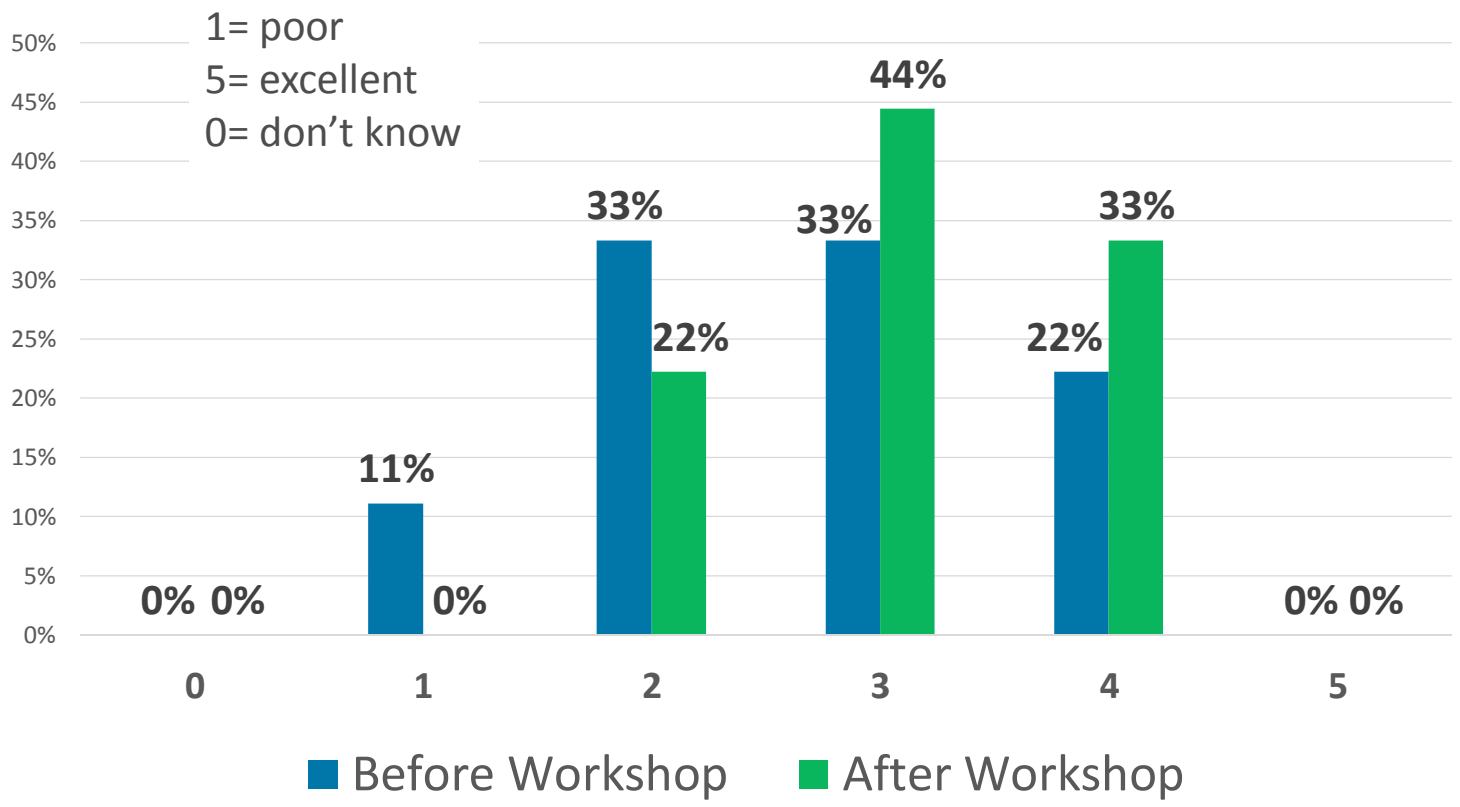
CHANGE IN OPERATIONAL CAPACITY



CHANGE IN MANAGERIAL CAPACITY



CHANGE IN FINANCIAL CAPACITY



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AREAS OF VULNERABILITY

» Majority have inadequate or no **centralized treatment**

» Automate and improve **alarming** and **security**

» Document **processes** and **procedures**

» **Poor communication** with users in areas requiring increase in water rates

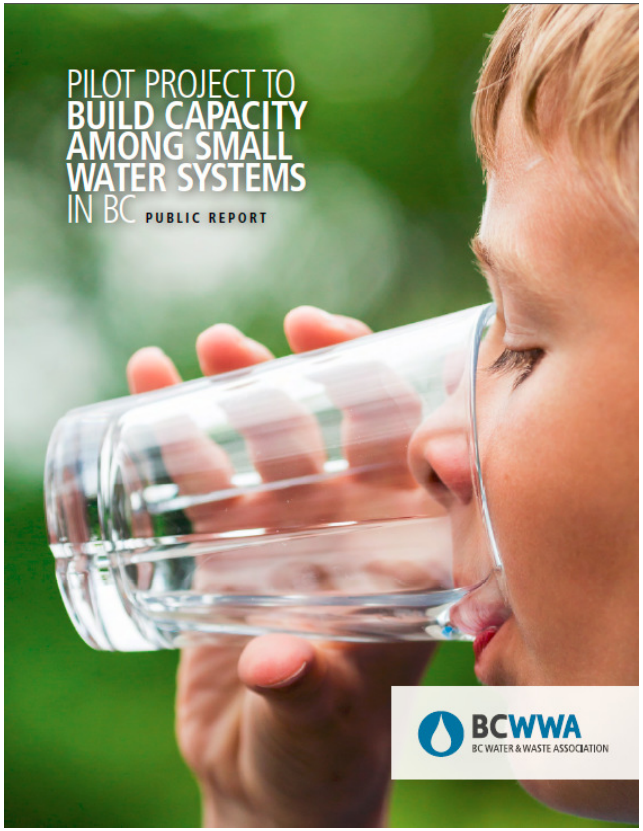
» Lack of **asset management plan**

KEY SUCCESSES

» **Support Networks**

» **Understanding Responsibility**

» **Access to Insurance**



PROJECT EXTENSION

» Small water system owners **make informed decisions** about the long-term management and sustainability of their system

AND

» Small water system owners and operators **improve** the financial, operational, technical, and managerial **capacity** of their system

SO THAT:

- **Safe, cost-effective and sustainable water services** are provided to residents/users in BC

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