How to Prepare Your Small System for Future Regulatory Requirements

Clean and Safe Drinking Water Workshop - Gander, Newfoundland

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André Proulx, P.Eng.

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Focus of Presentation

- Wide View of Water Industry Trends and how these Affect Small Water Systems
- Impacts of the Walkerton Inquiry on Small Systems
- Current and Future Regulatory Issues facing Small Water Systems
- Strategies to Prepare your system to meet the Regulatory requirements

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Water Industry Trends

2001 AWWARF Report 2604 "Strategic Assessment of the Future of Water Utilities"

- Consortium of over 40 Utility Managers from the US, Europe, Australia and Canada
- 7 trends Identified

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Future Water Utility Trends

Trend No. 1

Infrastructure Management will be critical

- 1950 to 2000 $50B US
- 2000 to 2020 $60B US

Source: USEPA 1997 (all in 1997 $)

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Canadian Trends

CWWA Database

- 75% of Municipalities in database are small (<10,000 population)
- 95% of Municipalities in database have a Population of <50,000
- There were 3927 Mun. in Canada in 2001
- Based on Length of Watermains only, Small & Medium size Mun. account for 54% of Water infrastructure in Canada

Source: National Guide PW-1 Best Practice survey results

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Strategies for Infrastructure Management

- Good Database(s), preferably electronic and computerized
- Prioritize your infrastructure Rehab and Renewal (short & long term plans)
  - Backbone Infrastructure
  - Critical Watermains
  - Critical Customers
  - Vulnerable Areas

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Strategies for Infrastructure Management

- Prioritize your Infrastructure Maintenance activities
  - Critical Facility components
  - increasing the life of infrastructure (Cathodic Protection Program)
- Partnerships
  - ACWWA, CWWA
  - Other Water Utilities
  - Private Sector

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Future Water Utility Trends

Trend No. 2

Regulations will become increasingly stringent

- Water quality sampling & monitoring
- Source Water Protection
- Water System Accreditation
- Regulatory Policing

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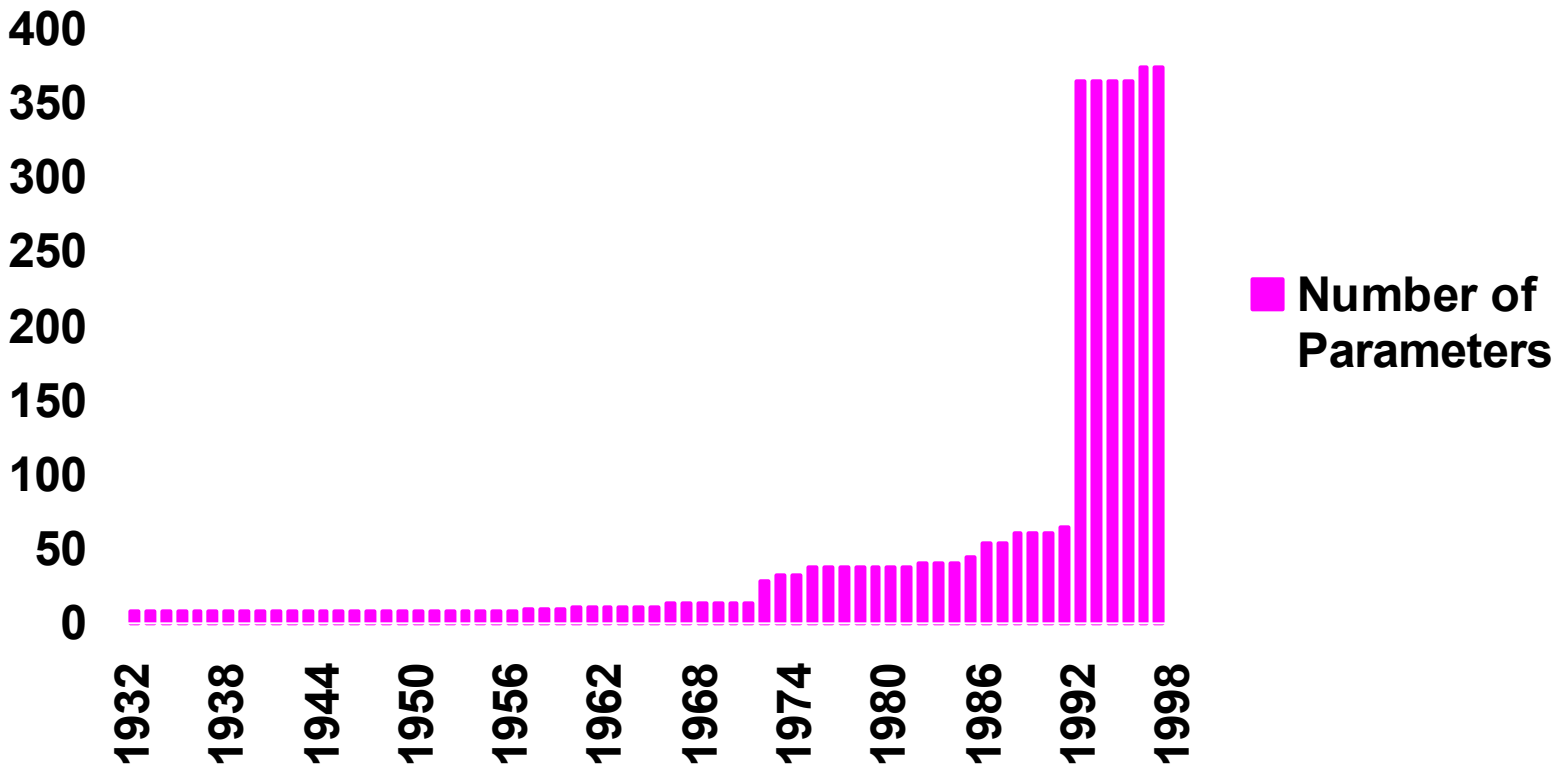
Future Water Utility Trends

Growth in Water Quality Parameters (1932-2000)



Source: City of Ottawa

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Strategies to Regulatory Impacts

Partnerships on Regulations

- National Regulations: CWWA
- Provincial Regulations
  - ACWWA
  - Provincial Dept. of Environment (Water Resources)
  - Local Municipalities
- Holistic approach to Source water protection

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Strategies to Regulatory Impacts

Amherst, NS Source Water Protection Plan

- The definition of protection zones is based on delay or travel time for groundwater in roughly concentric circles around the pumping wells. This includes 3 Zones:
  - Zone 1: 10 Year Delay (600ha)
  - Zone 2: 50 Year Delay (1000ha)
  - Zone 3: Total Recharge (2100ha)

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Strategies to Regulatory Impacts

Amherst Restrictions Apply to:

- open fires
- forestry operations
- pest control products
- waste disposal
- vehicle usage in Zone I
- pits, mines or quarries, transmission lines
- highway salting and ice control
- agricultural operations
- motor vehicles in Zone I

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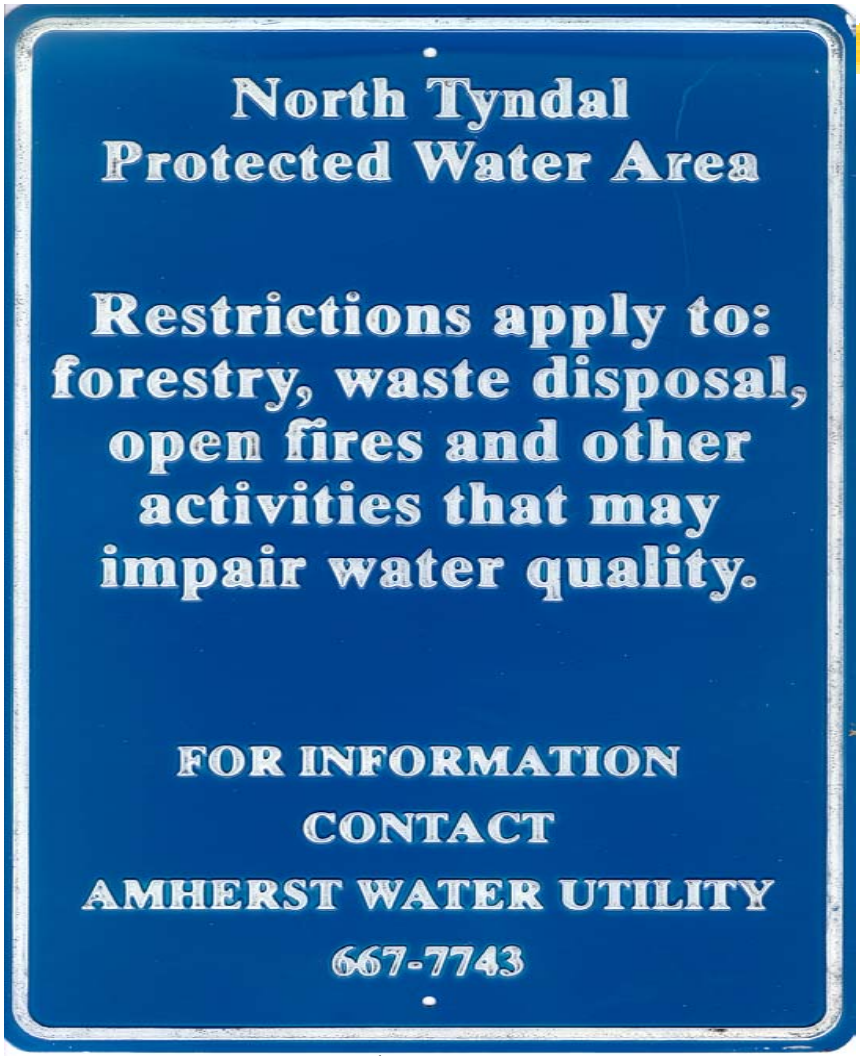
Strategies to Regulatory Impacts



Courtesy: Amherst, NS

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Future Water Utility Trends

Trend No. 3

Water Utilities will continue to restructure

- Utility restructuring is driven by Politics/local restructuring
- Ontario (45% Reduction in 5 years)
  - 1996: 815 Municipalities
  - 2001: 447 Municipalities

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Strategies to Utility Restructuring

Consider Options to address Major Gaps

- Consolidation/Regionalization
- Contract Management (Privatization)
- Outsourcing of non-core activities

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Future Water Utility Trends

Trend No. 4

Good Stakeholder Relations will be Critical

- Factors affecting relations
  - Water Quality concerns
  - Rising rates
  - Media attention

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Future Water Utility Trends

Perception of Public Sources of Information

Source	% of Info	% Trust of Info
News Reporters	27	27
Environmental Groups	21	40
Friends/Relatives	7	34
Local Government	5	11
Federal Government	4	12
Chemical Industry Reps	3	8
Doctors	3	46

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Strategies for Stakeholder Relations

- Be open, honest, transparent
- Make information readily available
- Involve stakeholders in setting goals
- Increase public understanding of issues
- Focus on customer service
- When possible, work with local MOH and Env. groups

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Future Water Utility Trends

Trend No. 5

Application of Technology will continue to grow

- Treatment technology (membranes, UV, process control)
- Data management systems (CMMS, SCADA, GIS)
- Use of the Internet

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Strategies for Applying Technologies

- Plant Automation
  - Reduce labour costs
  - Reduce chemical costs
  - Reduce energy costs
- Maximize Internet Use
  - Transactions with suppliers/contractors
  - Information sharing

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Future Water Utility Trends

Trend No. 6

Work environment will be transformed

- Fewer, more highly-skilled staff
- Staff Reductions through attrition (loss of institutional memory)
  - Region of Waterloo - 43 to 32 staff (25% reduction from 1996 - 2002
  - City of Ottawa 340 to 280 staff (17% reduction from 1994 - 2000

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Strategies to Address Work Environment Changes

- Computerized Data Management System and other automation systems
- Cross-trained staff
- New Compensation/Retention Strategies
- Staff training programs

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Future Water Utility Trends

Trend No. 7

Adoption of Total Watershed Management

- Conflicts with Regulation
  - Right to farm vs Environmental protection
  - Property rights vs Environmental protection
- Increased Emphasis on Source Water Protection
- Increased Emphasis on overall Watershed

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Strategies for Total Watershed Management

- Implement appropriate demand management programs
- Implement appropriate source water protection program (with appropriate partners)

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Walkerton Part 2 Impacts

- 93 overall Recommendations
- 17 related to source water protection
- 12 related to water quality standards
- 8 related to Quality Management
- 7 related to small systems
- 6 related to Training
- 6 related to First Nation

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Walkerton Part 2 Impacts

"Perhaps the most significant recommendations in this report address the need for quality management through mandatory accreditation and operational planning."

Walkerton Part 2 Report, page 11.

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Relevant Walkerton Part 2 Report Recommendations

- No. 45 - Council or committee of Council should be held to a statutory standard of care.
- No. 47 - Municipalities should submit a financial plan for their water system, in accordance with provincial standards, as a condition of licence (e.g. Full cost accounting).

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Relevant Walkerton Part 2 Report Recommendations

- No. 51 – Owners should have an accredited operating agency
- No. 52 – Accreditation should be based on Independent audits
- No. 55 – Water systems should be accredited within specific time frames (see table 11.2, p. 362)
- No. 58 – Emergency response should be an essential element of mandatory accreditation

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ISO Accreditation

- ISO 9000 Series – Quality Mngt
- ISO 14000 Series – Environmental Mngt
- ISO recognized that neither is directly related to Water/Wastewater industry
- ISO TC 224

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ISO TC 224

- Intention is to develop an ISO standard for Water/Wastewater Utilities
- Led by French
- Views are quite different among Countries involved
- Canada is represented

ISO TC 224 in Canada

- Led by Canadian Advisory Council
- Referred to as Can/ISO/224
- Approx. 20 members
- CWWA Executive Director is the Chair of this committee
- ISO 224 Standard is still 3 to 5 years away

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Water Industry Quality Management Programs

- AWWA
  - QualServe (AWWA & WEF)
  - International Water Treatment Alliance (IWTA) & Partnership for Safe Water
- Ontario MOE is moving on developing their own Standard(s)

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Relevant Walkerton Part 2 Report Recommendations

- No. 82 - Owners of small Communal systems should be able to apply for a variance from Provincial regulations
- No. 83 - Government should not approve water systems that are not economically viable

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Relevant Walkerton Part 2 Report Recommendations

- No. 84 - Approved systems that are not economically viable should be required to explore all options to find the most economical way of providing safe drinking water. If the system is still too expensive, the provincial government should make assistance available to lower the cost per household.

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Next Steps for Small Systems

- Understand the condition of your infrastructure
- Set up appropriate and sustainable financing mechanisms
- Use technology to reduce your costs
- Take care of your staff (training, compensation)

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Next Steps for Small Systems

- Partnerships with Associations (ACWWA, CWWA) other utilities, other levels of government and the private sector will benefit you and the Industry
- Use of Best Practices being developed by the National Guide to Sustainable Municipal Infrastructure

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Quality Management System

Prepare yourself now

- Good updated manuals (O&M)
- Good documentation of infrastructure
- Standard Operating Procedures for all basic activities

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Implementation Issues

- What has to be done – normally well understood by all staff
- Implementation – most difficult
  - Pilot projects
  - Staff involvement
  - Trial & error with strong focus on H&S of employees and best interest of the community

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