

# **THE WALKERTON INQUIRY**

Notes from the Expert Meeting on:  
**Drinking Water Providers in Ontario**

June 13, 14, 15, 2001

19<sup>th</sup> Floor Boardroom  
180 Dundas Street West  
Toronto, Ontario

Chair: Steve Hrudehy

## **Topics of Discussion:**

### **1. The Need for System Improvements, and Potential Models**

- 1.1 The Australian Framework
- 1.2 The Model Water Utility
- 1.3 The Edmonton Experience
- 1.4 Why Do People and Organisations Produce the Opposite of What They Intend?

### **2. New Initiatives and Proposals**

- 2.1 Walkerton Centre for Water Quality
- 2.2 Provincial-Local Relations and Drinking Water
- 2.3 Canadian CAO Benchmarking Initiative

### **3. Small Systems: Models and Challenges**

- 3.1 Reform in Rural Victoria, Australia
- 3.2 Problems and Challenges of Small Systems

### **4. Accreditation and Certification**

- 4.1 Training and Certification
- 4.2 How an accredited system would relate to the regulatory system

The detailed notes for this expert meeting have been prepared to brief the Commissioner and to facilitate participation in Part 2 by those who were not present at the meeting. The notes are intended to represent the major items of discussion and positions put forward by participants. They are based on notes taken by Rapporteurs and are not intended to be an official report or transcript of the meeting. They do not represent the views of the Commissioner.

## Meeting Participants and Affiliations

Chair	Steve Hrudey
Co-Chairs	Harry Swain
	James Van Loon
Issue Paper Authors	Mary Ann Archer, Archer/Henderson Inc. Loretta Brill, Infinity Consulting Ltd. Eddie Doyle, Delcan Bill Fields, Diamond Management Mike Fortin, Strategic Alternatives Wendy Joyce, for Diamond Management Ken Mains, CH2M Hill Narelle Martin Peter Nicol, CH2M Hill André Proulx, Delcan Darren Romain, CH2M Hill Andrew Sancton, University of Western Ontario
Walkerton Centre for Water Quality (CWQ), Walkerton Chamber of Commerce	Douglas J. Robertson Joe Heisz
Canadian Standards Association (CSA)	Kevin Boehmer Ahmad Hussein
CAO Water/Wastewater Benchmarking Initiative (W/WBI)	Ric Robertshaw
Canadian Union of Public Employees (CUPE)	Ron Crawley
Ontario Public Service Employees Union (OPSEU)	Tom Parkin
Canadian Environmental Law Association (CELA)	Fe de Leon Theresa McClenaghan Paul Muldoon
Ontario Society of Professional Engineers (OSPE)	Steve Bonk Bob Goodings
Association of Municipalities of Ontario (AMO)	Nicola Crawhall

Ontario Water Works Association Ontario Municipal Water Association (OWWA/OMWA)	Joe Castrilli Allan Davies Rod Holme Brian Pett Gerald Samuel
Government of Ontario	Jim Ayres, Smith Lyons John Callaghan, Smith Lyons
Ministry of Environment (MOE)	Jim Maclean Bill Gregson
Research Advisory Panel	George Connell
Inquiry Staff	Gus Van Harten
Rapporteur Team Leader	Carolyn Johns
Rapporteur	Rachel Melzer

# Meeting Summary

## Drinking Water Providers in Ontario

### 1. The Need for System Improvements, and Potential Models

- 1.1 The rationale and development of the new Australian Framework was briefly presented by Hrudey, and discussed. It is an aspirational model, describing best practices to create a focus on robust processes performance, not only on numbers-based standards.

- 1.2 The issue paper *Model Water Utility: A proposed Total Quality Water Management System for Ontario* was discussed, and shortcomings both in the existing system and in this model were pointed out. The critical role of leadership was highlighted. There was consensus on the value of instituting continuous improvement systems. However, the need for incremental improvements within the existing system versus the need for a completely new system and various options in between these boundaries framed the discussion.

**Consensus Statement:** There was agreement that different models need to be explored further. Two central questions were tabled by the Chair to focus the discussion: What is not working now? What is missing in the Issue Paper proposal for the ideal water system?

- 1.3 The Edmonton Experience: Davies, of Edmonton's water utility EPCOR, described the approach taken in Edmonton's to improve drinking water. Leadership was acknowledged as a critical component of success. This municipally owned corporation, which also has contracts to manage some smaller communities' systems, was discussed as a model of a well-run utility. The contract servicing option was discussed as a possible arrangement to meet the needs of Ontario's smaller utilities, including the use of OCWA, but this option was not seen as a solution for every case.
- 1.4 Why Do People and Organisations Produce the Opposite of What They Intend? The authors led a discussion on the importance of a culture where people take risks, engage in open dialogue, challenge one another, are open to learning, examine assumptions, and put aside the defensive tendency to avoid embarrassment and appear in control at any cost.

**Consensus Statement:** There was agreement that there is a lot of excellent practice currently in place, but there are also problem areas. There was not consensus about the extent of these problems and whether they warranted the introduction of a new system.

### 2. New Initiatives and Proposals

- 2.1 The *Walkerton Centre for Water Quality* (WCWQ), a grassroots initiative now underway, was presented by representatives of the Walkerton Chamber of Commerce. Meeting participants were impressed by the range and quality of initiatives being proposed by the WCWQ.

- 2.2 Sancton discussed his paper “Provincial-Local Relations and Drinking Water in Ontario” from the perspective of the province’s culture and the politics of implementing change. Debate focused on the importance of an organisational form that allows financial disentanglement of the water utility from the municipality.
- 2.3 Robertshaw described the water/wastewater program of the *Canadian CAO Benchmarking Initiative*. A process is under development by which municipalities will create performance indicators, both numeric and process-related, to benchmark their water and wastewater systems. The benchmarks are aimed at allowing for continuous improvement. The presentation was followed by numerous questions on the implications of such benchmarking in the Ontario context, particularly to information sharing and to smaller systems.

### 3. Small Systems: Models and Challenges

- 3.1 *Reform in Rural Victoria, Australia*: Martin described the process and outcome of a restructuring of the small, locally-owned water systems of rural Victoria into 15 state-owned water authorities, with a focus on financial viability and new performance criteria. Discussion centred on the potential relevance to Ontario’s small water systems and the top-down nature of the Victorian approach.
- 3.2 *Problems and Challenges of Small Systems*: various approaches to meeting the resource and technical needs of Ontario’s small systems were discussed. The wide-ranging discussion included consideration of: the implications of a quality certification program; the potential for restructuring; and possible roles for OCWA, the Ontario Clean Waters Agency.

### 4. Accreditation and Certification

- 4.1 *Training and Certification*: Samuel presented on his experiences with training and certification programs for water system operators, and recommended mandatory training for certification and re-certification and the elimination of grandfather certificates through training and re-certification under the rules of the program. The status of training and certification in Ontario were discussed, including the roles of operators, management, and government ministries. Agreement was reached on the substantial benefits to enhancing the profile and professionalism of water treatment operators as an occupation.

**Consensus Statement:** Agreement was reached on the substantial benefits to enhancing the profile and professionalism of water treatment operators as an occupation.

- 4.2 *How an accredited system would relate to the regulatory system*: the feasibility of creating a Canadian CSA-approved standard for water operations, or an Ontario-only standard, were discussed, with input from CSA. Numerous parties voiced concerns and questions on topics related to the proposal for accreditation, in particular about changes in the role of the regulator, changed liability and accountability structures, and drivers for change.

## Discussion of Substantive Issues

### 1. THE NEED FOR SYSTEM IMPROVEMENTS AND POTENTIAL MODELS

**What mechanisms or approaches offer the most promise to deliver the elements of a comprehensive water quality management framework for Ontario?**

#### 1.1 The Australian framework example

Hrudey described work done in Australia, sponsored and organised by the Cooperative Research Center for Water Quality and Treatment (CRCWQT).<sup>1</sup> An overview of the framework was provided in the agenda:

#### Framework for Management of Drinking Water Quality<sup>2</sup>

<b>1. Commitment to Drinking Water Quality Management</b> <i>Drinking Water Quality Policy</i> <i>Requirements</i> <i>Partnership Agencies</i>	<b>7. Employee Awareness and Training</b> <i>Employee Awareness and Involvement</i> <i>Employee Training</i>
<b>2. Assessment of the Drinking Water Supply System</b> <i>Water Supply System Analysis</i> <i>Review of Water Quality Data</i> <i>Hazard Identification and Risk Assessment</i>	<b>8. Community Involvement and Awareness</b> <i>Community Consultation</i> <i>Communication</i>
<b>3. Planning – Preventive Strategies for Drinking Water Quality Management</b> <i>Multiple Barriers</i> <i>Critical Control Points</i>	<b>9. Research and Development</b> <i>Investigative Studies and Research Monitoring</i> <i>Validation of Processes</i> <i>Design of Equipment</i>
<b>4. Implementation – Operation Procedures and Process Control</b> <i>Operational Procedures</i> <i>Equipment Capacity</i> <i>Materials and Chemicals</i> <i>Operational Monitoring</i> <i>Operational Preventive and Corrective Action</i>	<b>10. Documentation and Reporting</b> <i>Documentation and Records Management</i> <i>Reporting</i>
<b>5. Verification of Drinking Water Quality</b> <i>Drinking Water Quality Monitoring</i> <i>Consumer Satisfaction</i> <i>Short-term Evaluation of Results</i> <i>Corrective Action</i>	<b>11. Evaluation and Audit</b> <i>Long-term Evaluation of Results</i> <i>Drinking Water Quality Management Audit</i>
<b>6. Incident and Emergency Response</b> <i>Communication</i> <i>Incident and Emergency Response Protocols</i>	<b>12. Review and Continual Improvement</b> <i>Senior Executive Review</i> <i>Water Quality Improvement Plan</i>

<sup>1</sup> Rizak et al., 2001, *Framework for management of drinking water quality*, Working Party of the Drinking Water Review Coordinating Committee, National Health and Medical Research Council, Australia. Public consultation document available at <<http://www.health.gov.au/hfs/nhmrc/advice/pdf/waterqly.pdf>>

<sup>2</sup> Adapted from page 1, Table A of Rizak et al., 2001/

Elements 1 through 6 and element 8 have been addressed in other Expert Meetings. Elements 7, 9, 10, 11 & 12 were the primary focus of this meeting, with other items addressed as the need arose.

- Hrudey briefly describes the consequences of the 1998 “Sydney water crisis.” The responsible water authority was broken up, the CEO fired, and an inquiry called. A number of Australian cities, there was usually a single, largely self-regulating government authority responsible for water management, treatment, distribution, wastewater collection, with little legislation to back it up. In the case of Sydney, restructuring had begun but firing the CEO of the largest water organisation got the industry’s attention, and industry was receptive in the fall of 1998 to considering new ways of managing drinking water quality. A process began to get the very diverse water industry to sign on to a common way of thinking about how to deliver safe water.
- A draft framework was produced by the CRCWQT<sup>3</sup> and “desktop trials” were performed, in which some water utilities worked through the framework to determine what they would have to do to implement it. The final draft is now out for public discussion. The National Health and Medical Research Council will use the framework as a basis for restructuring the Australian Drinking Water Guidelines, the primary reference source on drinking water quality for the country.
- The framework attempts to change the focus from simply compliance numbers to robust careful operating procedures that can consistently meet those standards, proactively and not reactively. Much of this work is also to be adopted in the third edition of the World Health Organisation (WHO) drinking water quality guidelines (scheduled for 2003).
- OWWA/OMWA questioned whether Australia is actually following this model? Hrudey responded that the model is aspirational - not yet implemented but intended to provide a template of what constitutes best practice. While some utilities may be close, the full framework will be a step up for everyone. The dynamics of developing the framework were to seek a national consensus on best practice but there are no plans in the immediate future on a national basis requiring accreditation to this model. (Hrudey)

## **1.2 The Model Water Utility**

Fields (Diamond Management Institute) discussed the commissioned issue paper “A Total Quality Water Management System for Ontario: The Model Water Utility,”<sup>4</sup> and

---

<sup>3</sup> Rizak et al., 2001.

<sup>4</sup> For a full description of this proposed model utility, please see: Romain, Darren E., Ken Mains, Peter G. Nicol, Bill Fields, Wendy M. Joyce, “A Total Quality Water Management System for Ontario: The Model Water Utility,” a commissioned issue paper prepared for the Walkerton Inquiry by CH2M HILL Canada Ltd. and Diamond Management Institute. Available online at <<http://www.walkertoninquiry.com/part2info/commissuepapers/11ch2m/ch2m.pdf>>

summarized key points as follows:

- There is a lot of excellence out there which deserves to be recognised
- Our vision: employees competent to perform their job, committed to excellence and continuous improvement.
- Leadership: The leader creates and maintains that culture; scarcity of leaders is a huge issue.
- Management competence: Managers must be properly trained to do their job. Then we can hold them responsible.
- Operators must be competent to perform their jobs, which means a comprehensive training program, which should be embedded in the Ministry of Training, Colleges and Universities. Industry and professional associations should take a stronger role
- Underlying all this should be a Total Quality Water Management System (TQWMS), probably ISO9000 and 14000 as a foundation piece, but drawing on HACCP [Hazard Analysis Critical Control Point], Australian framework, QualServe, AWWA's Partnership for Safe Drinking Water initiative etc.
- Governance and scale: The water utility must have a certain capability, which may mean shared services or other structures. Must be overseen by proper oversight from a board of governors who know their responsibilities/liabilities.
- Accredited utilities need fixed-term licensing and renewal, with annual reporting to regulator and public.
- Other issues: role for customers; regulatory role and clarification MOE roles through separation of standard-setting, maintenance of regulations, and auditing functions. Audit function should rest with a registrar recognised by the Standards Council of Canada (SCC).
- Transparency must be embedded in all aspects of this model: communication, reporting and openness.
- Romain (CH2M HILL): having the right tools is fundamental. TQWMS allows us to identify whether we have the right tools. The HACCP model is good for identifying and prioritising risk
- Joyce (Diamond Management): multidisciplinary approach puts the utility within the context of the society they serve, the economy they thrive in, relationship with regulator and governance context. The Australian example is exciting, and we need to offer that kind of comprehensive approach.

***1.2.1 Is a scheme of accreditation by a standards body followed by licensing by government the best way of achieving consistent high quality, or are there better alternatives? Do we want to stick with the present way of dealing with water supplies, or move to this (or to some other) certification/accreditation system?***  
(Swain, Hrudey)

- Hrudey suggests this is a question of being preventative vs. being reactive.
- The process described in the CH2M HILL / Diamond Management Institute paper is very different from what Ontario now does. Currently MOE experts examine proposals (for new systems, modifications), and based on their expertise issue a

Certificate of Approval (C of A), broadly a facility approval. It is intended to be preventative. The balance of responsibility between regulator and water provider is very different from that in the report just discussed. Transaction costs of moving from one system to the other are likely to be very high; is the new idea enough of an improvement to be worth the transaction costs? (Swain)

- In Australia, focus had been on water quality parameters and numerical limits. Introducing a focus on management systems did not mean abandoning water quality testing, only putting it into perspective as part of the system for insuring water quality. (Hrudey)
- Several parties ask for clarifications about the model they are being asked to advocate for or against.
- There are key organisational concerns around size/scale, and around whether municipalities or other entities will have responsibility (Martin, Sancton).
- Will the leadership come from a municipal council, as presently dominates, or from a board of governors? (Sancton) In this model, more responsibility would be in the hands of those producing the water, while a regulator would set water quality standards and audit. Right now there is fragmented evaluation, e.g. looking at technologies and at operator certification, but we need a more comprehensive demonstration that providers have the management capability to provide safe water. (Hrudey)
- The C of A is core to issues of accountability, liability, etc. Can the broad goals outlined in the paper be achieved while still maintaining an improved certification process? (CUPE) Hrudey suggests that a C of A would serve to confirm that all of the elements in the quality management framework were in place. The point is to increase, not to reduce the water operator's responsibility and obligations.
- The impression is that this approach seeks to enhance performance measures but not as an alternative to the regulatory system. The concern is how do the two connect? (CELA). Fields (Diamond Management) suggests that it is an enhancement, but that there are things currently done by the regulator that could be done by the operator.
- If an outside agency like OCWA [Ontario Clean Waters Agency] is operating a plant but the municipality owns it, what if the owners refuse to comply with needed improvements? Would OCWA drop them for not complying? The connection has to be with the owner, not just the operator. (OSPE) Fields responds that the framework does not address the public/private or union/non-union questions. Joyce (Diamond) adds that the approach is about behaviour, not structure, and that the owner has financial responsibilities to the operator as well as accountability to consumers. It puts the owner back in the picture, providing an annual comment on how involved they have been.
- CWQ asks about the social, political and economic context, the big picture. Hrudey recalls the Australian example, with lots of scattered excellence but no one place to go to for advice or reference in the face of substantial restructuring going on within their industry. The CH2M Hill/Diamond Management Institute paper provides insight into how to implement such a framework.
- To clarify the issue of certification: systems such as ISO are business systems, which should be supporting the goals of organisations, but these need to be supplemented to provide a specific focus on assuring water quality and public safety. We need

transparency and accountability to third party audit, to the public, to the regulator. (Fields, Diamond Management)

- The C of A process forms one small component of a huge picture, and it asks whether you have the right tools before you make those financial commitments to build/upgrade the system. Need something that will build on what's there already, rather than an either/or approach to C of A vs. Australian or CH2M HILL/Diamond Management model. (MOE, with agreement from Swain that the either/or approach to the current vs. proposed system is overstated)
- Formal systems (accountability or certification) can be examined, but also need to address interpersonal things going on in organisations, build a different culture. Need to ask why various approaches (quality circles, ISO, reengineering, quality processes) have not succeeded; examine individual's defensive practices (Brill). In essence, why didn't Koebel feel he could talk to his boss? (Archer) Organisations tend towards a "bring me good news" attitude; the leader needs to create a different culture (Fields)
- Nicol (CH2M HILL) notes that a difficulty with the C of A was that it is issued once, but is not periodically revisited.

**Consensus Statement:** There was agreement that different models need to be explored further. Two central questions were tabled by the chair to focus the discussion: What is not working now? What is missing in the Issue Paper proposal for the ideal water system?

***1.2.3 Can we identify concerns or things that would need attention in a new system or in modifications to the existing system? (Swain) Hrukey asks everyone if they lean towards specific targeted improvements in the status quo, or towards some more-comprehensive change in the structure such as the report describes, and what the problems are in either one that need to be dealt with.***

- There is a scale, resource and governance embedded in this model which mean that certain municipalities could never comply, and will be forced into other mechanisms. OPSEU, and Fields (Diamond Management) agrees. Swain agrees that a consequence of the model would be to put many small operators out of business, leaving them to re-scale, contract out, bring in OCWA, etc. OPSEU charges that the model has inadequate focus on protecting performance during that transition.
- OPSEU cautions against an entirely management-oriented solution, suggesting the need to be more prescriptive about organisational form. In Victoria, Australia (see report section 3.1) they adopted a structure first and regulatory mechanisms followed.
- In reply it was argued that it is not appropriate in Ontario for a single structure to apply to all, and the report's focus was not necessarily on political/structural arrangements, although an implementation plan involving all the stakeholders was proposed (CH2M Hill, Diamond Management).
- Placing greater responsibility on suppliers implies a corresponding change in the regulator, probably a shift to a licensing scheme with strong performance standards. Implies a need for water-taking permit, effluent discharge permit, public reporting obligations, accreditation/certification by an SCC-registered third party. Process should include public participation/involvement. This would shift the emphasis of

MOE approval process, but still would not provide some of the hands-on technical support MOE used to do especially in small/remote areas of Ontario that cannot easily join with their neighbours (Swain). CELA suggests that this topic merits further exploration.

- Sanction is in favour of moving to a new system. Caveat: one can make those changes, bring in cutting-edge quality systems, without having huge organisational changes, e.g. in the U.S. water industry, the system is still largely based in municipalities. In terms of organisation, why did England regionalize water in 1973, stripping water from municipal systems into public systems? Swain, Martin cite papers related to this question.<sup>5</sup>
- Delcan absolutely supports an accreditation program, but it will not solve everything. People want water quality for aesthetic as well as health reasons. System reliability is critical. Customer service and public expectations are important, as is leadership, both from the council and from management. To come up with one system that can tackle all of that is almost impossible, and something will always fall through the cracks and have to be dealt with.
- Delcan adds that implementation will face roadblocks: cost, acceptance. The water industry has faults but is still highly successful in providing safe water in most places. If government is to finance implementation, they will want proof that the system as it stands is causing a lot of damage. Keeping politicians financially committed is a key challenge.
- OPSEU suggests three separate elements – operator apprenticeship, leadership development, and TQWMS – each of which can be addressed separately. Fields (Diamond Management) did not see each element as being independent, rather he sees each as a necessary structural pillar.
- OWWA/OMWA wants clarification on what the problem is. OWWA/OMWA supports continuous improvement recommendations, wants to see best management practices applied across the board, whether large or small utility, not only standards but also practices. The industry is moving in that direction now, with AWWA's self-assessment peer-review programs a great starting point to identify problem areas. Not having an adequate regulatory regime in place could frustrate such goals. The industry does not want to be in a position of being overwhelmed by trying to cope with a completely new structure. OWWA/OMWA favours a comprehensive system that takes into account acceptable parts of current system, parts that need tweaking, and broken parts that must be replaced. In some smaller systems, people have a "this is our system, don't tell us what to do" attitude so cultural change is needed.
- AMO agrees to the importance of considering smaller systems' needs, and advocates looking at what works and does not work rather than creating an entirely new system.
- CWQ notes that ISO is largely a documentation of procedures, and while MOE had a

---

<sup>5</sup> Swain cites (\*\*CONFIRM which citation he intended): Bakker, Karen, 2000, *The Greening of Capitalism? Privatising Water in England and Wales*, Draft—AAG 2000, American Association of Geographers Meeting, Pittsburgh; Bakker, Karen, 1999, *The Illogic of Efficiency: Water Regulation and Social Justice in England and Wales*, Economic Geography Working Papers, Oxford University. Martin cites: Narelle Martin, 2001, "The Water Industry in Rural Victoria, Australia: A case study of reform," commissioned issue paper for the Walkerton Inquiry, available online at <<http://www.walkertoninquiry.com/part2info/commissuepapers/11nmartin/nmartin.pdf>>

system of procedures, monitoring was not in place in Walkerton. The approach should emphasize importance of auditing, whether in the ministry or through a private auditor. CWQ supports need for improvements outlined in CH2M HILL / Diamond Management Institute paper, emphasizes need for putting improvements in place within a more holistic context, not losing sight of the whole system.

- OSPE notes that the mood in the industry today has changed in favour of accreditation programs. OSPE also expressed concern with small systems and how to apply this framework to them.
- There are pitfalls in applying the model even to large systems that sit low in a management hierarchy, e.g. Ottawa where water is a branch of a division of a department, no longer answering directly to city council (OSPE; Fields).
- CUPE is not in favour of overthrowing the current system, but likes the concept of continuous improvement. Small systems need more training and resources and tremendous changes, but that does not require jettisoning the system we have now.
- Brill agrees with CELA that more analysis of the implications of changes is necessary. Change has to be practical and concrete, but regulatory systems, training and certification are not enough. There also has to be change at the level of the way people do their work and relate to each other. A culture of defensiveness, avoiding embarrassment, seeking credibility and avoiding failure must be changed to a culture of challenging each other, not to embarrass others but to make better decisions.
- Gap analysis is necessary – do we know what our ideal state is, in order to move to fill those gaps? Then deciding how to get there must involve the public, and the operators. We also need support for that conversation, to move beyond being defensive, defending a position, trying to make ourselves look credible and not acknowledging what we do not know. (Archer)
- Martin notes that a radical overhaul is being discussed, and that here in Ontario she argued we are 10-15 years behind relative to the state of affairs in Australia.
- MOE suggests that they are already involved in a process of change that addresses some of the same changes proposed in the report. Questions how we deal with scale and governance issues. Suggests that whether we term it “radical” or not, the changes underway will significantly alter structure and delivery of water in Ontario.
- MOE agrees change is necessary, but rejects an "a" or "b" approach, since every paper has some good ideas and some "not-so-good" ones. Suggests that we take the best of everything that's out there, which may involve a little bit of what we have already and a little bit of the proposals for huge change. The C of A process works extremely well in most cases. The issue of staying current is one we've been grappling with since before Walkerton.
- Strategic Alternatives noted that the governance system we have now is generally strong, robust, capable of evolving. We need clarification/elaboration of standards, through accreditation, new standards, and especially a new audit function. The problem of limited financial resources for utilities may be overstated, since water in Canada is so cheap there is clearly scope for higher water rates to finance needed change. Strategic Alternatives also noted the need to consider vested interests, who lose their job or control as a result of changes.
- Superbuild and OCWA have key roles here and should be at this discussion to discuss what level of accomplishment is feasible (OPSEU).

- On the question of what is driving change, Hrudehy suggests that it should be a striving for better quality. Fields (Diamond Management) suggests that quality accreditation can be the driver. Doyle (Delcan) asks what will drive this whole process, continuous improvement or dire need. These changes will cost a lot of money, and if we suggest radical surgery to what we already have, how to convince a diverse audience beyond the water professionals? What will drive others to adopt the changes rather than waiting until the press is not reporting on water as much, and sidestepping change?
- The transition plan in the report provides a pathway for implementation whose first step is creating a legislative framework, supported by programs and regulations. If we adopt TQWMS we want the Minister to have a mandate to make it happen. (Joyce, Diamond). But what if we don't adopt TQWMS? When we present the model as somewhere we have to go, we need to also say what would happen if we didn't adopt it. (Doyle, Delcan) We need to hear leaders in the water industry speaking out, calling for improvement (Hrudehy).
- Public education and public relations: The main driver for this model should be regaining the confidence of the consumer (Romain, CH2M HILL). According to the National Post, 55% of people in Toronto think their water is not safe (Hrudehy). Doyle (Delcan) suggested that this may be more a problem of public relations and opportunistic media than of water quality. Hrudehy indicated that consumer confidence is more than public relations. Part of the public education and the transparency we need will be to get tuned in to conservation, how we use water, how little we pay for it, the need for renewable asset management. People need to know that safety will never be 100% but here is what we're doing to mitigate risk. (Fields, Diamond Management). Part of transparency must be performance measures so people can see that we're exceeding standards; as an industry we've been pretty poor at telling people how well we're doing. (Doyle, Delcan)

### **1.3 The Edmonton experience**

Allan Davies (EPCOR) describes the Edmonton experience.

- Two weeks after I had been appointed to my position in 1985 headlines in the paper alarmed the public about potential contaminants in the water. After commissioning a study, Hrudehy made over 100 recommendations to help us move forward. Some we implemented very quickly, some took us a long time and some we were never able to achieve. Whatever we aspire to for Ontario, it will take time.
- The water described was basically an engineering organisation, with a "tell us what the problem is and leave us alone to fix it" attitude that required cultural change. The source water for Edmonton is highly variable in terms of turbidity, organic material, so we need very nimble staff capable of understanding those changes. We had to train our staff to allow them to be proactive, to deal with new situations and learn from them. Our prime purpose had to be understood as quality of water, rather than getting water through the system. Our new motto was "we have to produce drinking water better than it has to be," and this change started with me and reached throughout the organisation, down to the operators. The operational need to

understand why they're doing these things, how their work contributes to the water quality goal.

- Training is key. Edmonton is large enough that we were able to hire trainers, who looked at some of the basics such as math and chemistry skills, then went on in terms of how to work as teams.
- We deal with three different unions, each with its own valid agenda, and we had to get them on board and maintain open communication.
- Some of the tools we had initially were inadequate. We needed tools – filters, pipes, pumps, reservoirs – and we've spent more than \$100 million on upgrading our plants. We encourage everyone in our organisation to belong to groups like AWWA, and learn from them. Our financial program is sustainable, with fairly high rates which I defend against criticism from city council; you can't have the level of water we want without paying for it.
- EPCOR is one of the largest water utilities in Canada, also operating small systems in Canmore, Strathmore and Port Hardy. In each case we emphasized that the regulations<sup>6</sup> are there as a guideline that we need to exceed. We went in, figured out how to improve, how to get buy-in, and celebrated success. This required meeting regularly with staff, trying to make them comfortable with talking to me without fear of repercussions. It is important to be there to support staff, rather than discipline them. It takes time to get that confidence; it does not happen overnight.
- In summary, the key factors are leadership, learning, continuous improvement, willingness to stand up for your principles.
- On the issue of the CH2M HILL/Diamond Management Institute paper, EPCOR accepts it as a visionary document, not a requirement that everyone must get in order to be accredited. We want quality water, but also need safety, financing, maintenance management; there is a lot else to running a utility. Does not see how the small systems could ever achieve this model. If small organisations can achieve a commitment to safe water and continual improvement, that alone would be a lot. The larger the organisation, the closer to that model it can get.
- Fields (Diamond Management) responds that while TQWMS is a foundation-piece of the paper, the model also speaks to financial viability, full costing, financial resources for renewable asset management and to support training of managers and operators, a multi-year plan that would form part of the review by the regulator. EPCOR agrees, but suggests that more detail around the financial business plan is needed. Fields concedes that the paper is a starting point, not the final answer, and requires more work. He noted that the paper calls for a task force to address these issues.
- EPCOR adds that undervaluing the price of water is a key problem. AMO agrees that many small municipalities undervalue their water, but others are charging the same as larger municipalities and still financially struggling. In others, there is not community hook-up and given the costs, instead individuals drill their own wells. That makes many more holes in the aquifer, and a much higher contamination risk. The MOE drinking water requirements are pushing communal systems to the point

---

<sup>6</sup> Alberta adopts the health-based limits of the Canadian Drinking Water Quality Guidelines as required conditions of the operating approvals issued to water providers so this mechanism gives these limits the force of law in Alberta.

where people walk away and drill their own wells.

- Fields cites the Port Hardy example, with management in Richmond, as a good example of bringing leadership/management to a different physical location. Davies (EPCOR) is cautious about this structural model as a form of privatization, an operations and management model, that he does not advocate. Fields replies that it is a form of consolidated management, not privatization, and Davies reiterates that while there is nothing wrong with it, he does not advocate it.
- OPSEU notes that there are two aspects to scale: the scale of operation and management ability and the skills there, and the scale of infrastructure financing. On the latter, huge investments are being called for, and at a certain point, paying for infrastructure so that people can live on the outskirts of town while still being served by urban systems is inappropriate unless it comes out of costs directly to that individual. It becomes an urban sprawl problem.
- OSPE notes that Edmonton water utility is a business enterprise with full-cost accounting.
- EPCOR is run as a business, solely owned by the municipality in a hands-off way, and provides about \$20 million/year dividends from water. About 20% of water utilities in the U.S. are run as private enterprise, but that does not say whether it is good or bad. In fact I have seen one such private system with no leadership in place. However, I have always had sufficient resources to be able to do what I have to, and also have not had a rate increase in seven years. (Davies, EPCOR)
- Sancton calls for more discussion around the issue of special operating authorities set up by municipalities to run such systems. He also notes that in this example there is a publicly owned municipal company supplying services in another province, managed from another city – an arrangement that works, but could not have been planned. Hrudehy notes that the mentality in Edmonton, and Calgary too, allows them to look beyond the municipal boundary to supply services.<sup>7</sup> Sancton replies that there is a cultural difference with Alberta, and in Ontario such a system would be resisted as an arrangement that limits accountability and that implies something is wrong with the current structure. Martin agrees, adding that privatization is contentious while corporatisation is more discussable. Brill asks about the difference in culture of a corporate entity, and Davies (EPCOR) explains that it is focussed on growth and shareholder value, while a municipality is always focussed on cutting costs and reducing. But you still have to have pride in water and see it as the primary responsibility.
- Proulx (Delcan) disagrees that municipal arrangements are untenable, suggesting that with good leadership the system works. Davies asks what will force a leader to take the risk [of expanding into other municipalities]. Proulx suggests that it's the right thing to do, helping a neighbour, but Davies (EPCOR) and Fields assert that you need incentives.
- CUPE notes that their union members who work for EPCOR are very happy with what the company does for the city and with their collective agreements. And it pays wonderful dividends to the city. But if you go to Port Hardy, there is no dividend going to them, the profits are going back to Edmonton. Is there resistance to the

---

<sup>7</sup> Both cities supply pipelines to provide water to communities up to 100 km away.

arrangement? Davies (EPCOR) replies that: the value proposition to Port Hardy is, hopefully, the same price for better service.

#### **1.4 Why do People and Organizations Produce the Opposite of What they Intend?**

Archer (Archer/Henderson Inc.) and Brill (Infinity Consulting Ltd.) discuss implications of their commissioned issue paper “Why do People and Organizations Produce the Opposite of What they Intend?”<sup>8</sup>

- The paper addresses the question of why take a risk, or why people refuse to take a risk and instead cover up mistakes. We need to make sure that the people who see the problems can put up the red flag. Willingness to stand up for your principles is difficult because in most organisations, I am already socialised to be defensive and the organisation is built on routines that say stay in control, don't be wrong, don't make a mistake, look good, don't embarrass yourself, don't embarrass anyone else. How many leaders will actually talk with the staff, and how many staff would actually feel that they can speak openly? We need to create systems that value the need for informed decision, which can only come from open dialogue. (Archer)
- We need to challenge some of our assumptions about leadership and size, about the need for a strong audit, about fixing the problem by training people. Organisations that don't question assumptions get into trouble. (Brill) Archer adds that training leaders must mean training leaders to be open to listening, hearing, being proven wrong.
- Fields suggests that this is an environment of mutual respect and trust, openness, celebrating diversity of thought. But simply being able to tell the leader something does not solve the problem, working together does. Need to foster and support collaboration. Archer agrees, suggesting that this would be a fundamental shift in the way we do things. Brill adds that one has to work with employees, not only leaders, to create new ways of doing things.
- Hrudehy adds that this paper speaks to the core question of what's gone wrong, given that it's unlikely that the utility folks want to make people sick, yet people did get sick. Swain suggests that we cannot manage our way around human nature; we need systems that operate robustly in the face of human nature. Brill replies that rather than saying “we need systems that ensure that human beings behave” we must understand that there are other ways people can behave, and systems that support that.
- Brill emphasizes that we need to change not behaviour, but a fundamental mindset, and asks how to shift the mindset, e.g., from “we have to cut costs” to “we have to grow.” Archer suggests that it is not about the mindset so much as about learning to challenge and test the assumptions that we carry, rather than

---

<sup>8</sup> Roger L. Martin, Mary Ann Archer, Loretta Brill, 2001, “Why do People and Organizations Produce the Opposite of What they Intend?” commissioned issue paper for the Walkerton Inquiry, available online at <<http://www.walkertoninquiry.com/part2info/commissuepapers/11martin/martin.pdf>>

- piling fact on fact, not really being open to new ideas and new ways.
- Training is not always the answer, and we need different models to help people learn (Brill). Ongoing reinforcement, following a training event, is important but often missing (Fields, Diamond Management).
  - OPSEU discusses the inadequacies of many training programs. The person on the plant floor in the facility needs to know not only what to do, but why. Training in critical thinking, problem solving, communication and team work, are needed as part of the core competency training for the job. OPSEU also calls for feedback in terms of SOPs [Standard Operating Procedures] that make sense on the shop floor.
  - Fields agrees that the operators must be the ones writing the SOPs. Management should review them, but those closest to the action have to be responsible and accountable, and need to have the skills, supports and tools in place. We need to create a work environment that insists upon collaboration. The leader is the one who must establish and maintain that.
  - Brill elaborates: there is a need for skills as well as empowerment, not just for leaders but for everyone such that decision rights are aligned; right now, those at the front line have the information, and those higher in the hierarchy have decision skills, but they do not connect.
  - Martin notes that here in Ontario there is a culture of not challenging, a culture of politeness and deference. One way of giving people permission to ask questions and challenge is through reporting, accountability and transparency to make information available. For example in Victoria [Australia], there is information on what water costs per person for each of the 15 water authorities. Organisations are required to report publicly in a structured framework and consumers can ask all sorts of questions. In Ontario we also need a stronger right to know and participate.
  - Romain (CH2M HILL) agrees that transparency is important, and people are too complacent, expecting the government to take care of water quality. AMO asks how another deferential culture, the Japanese, have created such a strong culture of continuous improvement. Archer suggests that the Japanese approach sees more collaboration, with people able to put forward their ideas and suggestions for improvement, unlike our culture that sees excessive disparity between the front lines and the site of decision-making. Swain notes that the front-line workers in Japanese operations have far larger numbers of engineers on-site directing them. It is an absolutely top-down system, not mentoring, and with a higher technical component in supervisory/middle-management levels. There are systems that can produce very high quality on a consistent basis over a long period, but they are quite heterogeneous. OPSEU notes that the Japanese economy is not really free-market, with the state funding many companies.
  - Davies (OWWA/OMWA) notes, the norms of behaviour for water utilities have changed over my lifetime, and the Inquiry is setting a new level of behaviour for water quality. We need to define what the acceptable norm is. Brill agrees that that is the purpose of the day, to determine what is important to us so we can start to determine how to do it.

**Consensus arising from the discussion of the need for new approaches, and potential models:**

Hrudey attempts to summarize the consensus that the status quo is not an option. We do need to do things differently if we are to honour the expectations that Ontarians have for safety of drinking water. We may have differences in terms of degree of change and mechanisms for change but is there unanimity on the premise that we will have to do things differently?

- AMO disagrees with the broadness of this statement. As a response to the original question of whether we have to do things differently, she and a number of people said do not fix what is not broken. She suggests that here in Toronto, we have a professional water system that seems well invested, and she would be somewhat uncomfortable saying that the status quo is not an option.
- Hrudey reminded the meeting about the National Post poll indicating that a majority of the citizens of Toronto do not trust their drinking water as safe. This suggests that there is a problem, even if the City is convinced that it is producing excellent water, for some reason the public does not believe the same, so even with a good system such as Toronto, there is a problem of consumer confidence.
- Adequate resources are fundamental. If we do not deal with having adequate money, other features such as leadership do not matter. Connell (RAP) adds that the reverse is true as well. Hrudey concedes, but adds that we can come up with the best ideas in the world but they will only succeed if adequately resourced.
- Brill notes that the hierarchy of needs does not always hold, and questions whether resources are a barrier, suggesting that that assumption should not stop us from creating new ideas or making things happen.
- Other suggestions for consensus statements and further discussion: Martin suggests that we recognise not only water supply but source management; we cannot delink it from catchment areas.
- OPSEU calls for more discussion on how to create a regime that advocates quality; OWWA/OMWA wants more discussion of employee awareness, training and certification;
- Sancton suggests we address municipal structural issues including size, special-purpose bodies, corporations, the institutional housing within which the ideal water body would operate.
- Swain agrees that the scale problem must be addressed, if we are going to seriously improve the quality of water among smaller providers, and that this has strong implications for the current obligations of municipal governments. He notes that in a discussion on source protection, there were calls for something on a watershed rather than a municipal boundary basis. Other possibilities are consolidation of small systems, turning to larger competent organisations such as regional operators, contracting out to OCWA or a private firm, various ad-hoc arrangements. It is also a question of how directive the province will be.
- Hrudey suggests that this discussion can be captured in a modified consensus statement that most of the problems and challenges arise from smaller systems.

Although there was some general agreement, OWWA/OMWA, Proulx (Delcan) pointed out that not all problems are with small systems. AMO suggests that smaller systems do have their particular problems. See Section 3. For further discussion of small systems.

## **2. NEW INITIATIVES AND PROPOSALS**

Note: this discussion is not reported in the chronology of the meetings due to availability of participants over the three days. The following summarizes initiatives underway and proposed to address some of the issues outlined in Section 1.

### **2.1 Walkerton Centre for Water Quality (CWQ)**

Robertson describes the Walkerton Centre for Water Quality (CWQ)<sup>9</sup>, first reminding us that we are here today because people died in Walkerton, and it revealed that a bigger problem existed.

- The CWQ committee started last year as a grassroots initiative in Walkerton, out of which arose the initiative to do a feasibility study despite the fact that the Inquiry was just getting underway. It stemmed from a desire to do something for Walkerton and the surrounding area, in terms of economics, and in terms of ethics towards righting a wrong that occurred. The approach taken was looking at who's doing what, what's out there now, what functions a potential centre for water quality might undertake. Sixteen potential core functions, including: mechanisms for labs and water quality testing; training and certification of system operators; providing information to the public to prevent complacency; access for laypeople to the research & development now going on in academic settings; education/outreach directly to water users, farmers, students, etc. were developed (documents available at WCQ website).
- The next step is to decide what we are going to do to implement these things and in what order. We are acutely aware of the progressive work of the Inquiry. We recognise that our approach has to be one of public-private partnership. We are looking at the possibility of making it a non-profit corporation with partnerships at provincial and federal government levels and with the private sector.
- We are aimed at addressing some of the issues we discussed today, although our committee took a very practical approach. In the next 8 months, we will be wrestling with implementation including developing a business plan, securing funding, getting people on board, prioritizing functions. We presented to the town hall meeting in Waterloo in March, and will probably be at one in Toronto later.
- CWQ suggests some kind of consensus statement from this meeting, recognising the existence of the Walkerton Centre for Water Quality committee and its work.

---

<sup>9</sup> For more information on the Walkerton Centre for Water Quality (CWQ), refer to their web site, <<http://www.walkertonwatercentre.ca>>

Meeting participants were impressed the range and quality of initiatives being proposed by the WCWQ.

## 2.2 Provincial-Local Relations and Drinking Water

Sancton discusses his paper “Provincial-Local Relations and Drinking Water in Ontario”<sup>10</sup> in the context of previous discussions.

- He outlines that the paper is about explaining why seemingly ideal arrangements do not get implemented as a result of the political process. It deals with provincial-municipal relations over time related to financing, public health, organisation of water authorities, and suggests incremental rather than sweeping change.
- He stresses the need to consider arrangements and political context in Ontario. For example, if the proposal for accreditation gets into the political arena, the rules for that will be highly contentious and will be seen as a surrogate for other debates over small/large, public/private, and perhaps other dimensions.
- On the Edmonton example, there was a culture established already of municipally run utilities spun off into public corporations. This is not part of the culture of Ontario. Although we have started to do that with electricity, with water we have gone in the opposite direction. Prior to the 1960s water was seen as a more businesslike, self-supporting utility often housed in commissions, but reforms in the sixties brought water into municipalities as a line department, a mechanism important to planning and development therefore not suitable for being run as a business. We heard that in Ottawa water is a sub-department of a department, and the CH2M HILL / Diamond Management people suggested that this was not ideal for their model. That implies that their model is not what we have in the real world in Ontario. Mains (CH2M Hill) suggests that the phenomenon of service contracts with utilities such as Edmonton is already happening in Ontario, e.g. Peterborough which runs some nearby municipalities’ water/wastewater systems. The Peterborough PUC is owned by the municipality, with a board of directors appointed, mostly by the mayor, not elected. The other municipalities felt they could get services more economically from adjoining provider than running their own.
- Swain suggested partnering, joining with other municipalities, but in Ontario there has been discouragement of that. If municipalities are not going to be making these partnerships, other possibilities are private actors and OCWA. OCWA would have an advantage because of local-level resistance to privatization. Concern is that OCWA is not at the table, although they were invited. We need to know more about their tax situation, the advantages they allegedly have, etc. It would be strange if this process resulted in recommendations that would have the unintended or un-investigated consequences of changing the role of OCWA when

---

<sup>10</sup> Andrew Sancton, Teresa Janik, 2001, “Provincial-Local Relations and Drinking Water in Ontario,” commissioned issue paper for the Inquiry, available online at <http://www.walkertoninquiry.com/part2info/commissuepapers/04sancton/sanctonfeb19new.pdf>

OCWA has not participated.<sup>11</sup>

**Discussion of alternative forms and financing arrangements (also to be discussed at subsequent Expert Meeting):**

- In Calgary, unlike Edmonton, the engineering department runs the waterworks and it supplies water by pipeline to some surrounding municipalities. It does not have to be a separate entity such as EPCOR, it just has to be a well-run entity (Hrudey). Fields (Diamond Management) agrees, noting that their paper allows for a number of alternative arrangements, public or private and for those who cannot achieve accreditation of TQWMS on their own. In Ontario one size does *not* fit all. A Toronto solution does not play everywhere else, and the North is particularly unique. We need to put out a range of options, and assist municipalities in choosing the right one.
- Joyce (Diamond Management) adds that while they do not advocate a specific corporate form, they do see the need for a discrete unit that can do its own financing, and is accountable separately from municipal services. Hrudey suggests that this is full-cost accounting and setting its own water rates. Fields notes that distortions are created if they're financially entangled in the municipality. With a municipality trying to balance a budget, renewable asset management will not be a priority. Operating pressures will take precedent.
- Hrudey agrees, but notes that before EPCOR was spun off, the monthly services bill in Edmonton showed the water rate separately and all of that money went to the utility. Fields suggests that this is a very disciplined municipality, somewhat unique. W/WBI, OSPE, AMO and Proulx (Delcan) disagree, stating that it is the norm in a municipality for water and wastewater to be a separate component, with rates segregated and intended as a full-cost recovery approach.
- However, W/WBI agrees that we are not investing enough in asset management. Proulx cautions that in a big corporation it is very easy to move money around even when it is dedicated, so that often the utility is supporting a tax base that maybe it should not be. The perfect model would have good activity-based costing principles in place.
- Some adjustments might be necessary, but it is not out of the realm of reality to have clearly identifiable entity that runs its own show (Hrudey, with agreement from OSPE). In mid-size/smaller municipalities we start to see some deviations from that practice, more on wastewater than water, and often municipal tax base is used to supplement capital improvements especially for wastewater (Mains)
- CELA notes testimony at the drinking water finance panel of the Inquiry about an area of entanglement that has occurred where the separate PUC needs council to approve its allocation of monies to reserves from surplus revenues for the year. This is problematic, political. AMO notes that in her research on four municipalities, none of the waterworks found that the municipality had raided their revenues, except for one, once in a ten-year period.

---

<sup>11</sup> OCWA was invited to attend this meeting through Ontario Government Counsel. Counsel for the Ontario government have indicated that the Province has taken the position that OCWA is an operating agency only and does not have a role in a policy process such as the Walkerton Inquiry. Representatives of Ontario Superbuild were present to answer questions about OCWA.

- Romain suggests that the utility can report to city council, but transparency and accountability are necessary.
- Other benefits to greater separation from municipal governments are less time spent by the utility leader at city council meetings, and more freedom for staff to go to meetings, belong to organizations, attend conferences, which city policies often don't allow their staff to do (Hrudey)
- OPSEU asks about the requirement to have discrete funding, and the levers that give the regulator power over municipalities to ensure this. Finances would be reported in the annual report, which would be audited as part of TQWMS, but then does the report go to the regulator who may not allow subsidies to go to that agency if the report is not good? Fields suggests that the license could be contingent. OPSEU replies that he does not see the model calling for licenses to be pulled. If, for example, Toronto wanted to "raid the cookie jar" what mechanism would stop them – no subsidy to pull, and I doubt you would pull the license, so where's the teeth?
  - Callaghan (Ontario) notes that evidence in 1(b) of the Inquiry suggests that such "raiding of the cookie jar" does not tend to happen. Hrudey replied that even without direct raiding a lot of resources at the fringes can be squeezed, while Romain adds that it is not only about financial separation, but also about enough resources ensured for sustainable maintenance of water systems.
  - Fields acknowledges OPSEU's point as something to consider, adding that part of the strategy is transparency to embarrass organizations into a certain kind of performance through public pressure. OWWA/OMWA agrees to the importance of public/consumer awareness as a mechanism to encourage utilities to do better, especially those who are not performing up to par. They add that many of their programs are put forward to demonstrate best practices, with the expectation that those not following such practices will come to embrace them rather than being seen to fall behind.

## 2.3 Canadian CAO Benchmarking Initiative

Robertshaw described the CAO Water/Wastewater Benchmarking Initiative:

- The program began in the Greater Vancouver district about four years ago and expanded to other municipalities, focussing on wastewater. Over time, other municipalities came online including some in Ontario. Meanwhile in 1999 the provincial government in Ontario was interested in a report card for municipalities. In conjunction with CAOs a consultant (Earth Tech) was engaged to look at water and wastewater collection/distribution systems. The report was tabled in May 2000, and in the fall of 2000 CAOs took it upon themselves to suggest proceeding with a CAO benchmarking initiative. A meeting was called and expert panels in different sectors (water/wastewater, ambulance, roads, waste, etc) were set up. CAOs challenged the panels to come up with a continuous improvement program, called the CAO Benchmarking Initiative. Many members were already seeing the benefit of the wastewater initiative, and it has become a national program with benchmarking over 75 or 80% of Ontario's population.

- The first workshop was held in Vancouver in April 2001, endorsed by the National Research Council and the Canadian Public Works Association. Objectives:
  - management indicators of water utility performance;
  - technical/functional concepts for the management tool and the project deliverable;
  - further commitment to utility partnership for ongoing support;
  - management level information on utility performance.
- Questions were raised about what data will be collected and how, and indirect costs were discussed. The question of how the benchmarking initiative merges with Ontario's MPMP [Municipal Performance Measurement Program] was discussed, as well as the issue of addressing groundwater. We found that questionnaires are inadequate for data collection and that a consultant needs to visit facilities, go over records and talk with staff.
- Another issue was looking for sustainable metrics for a "state of good repair" not as a win/lose contest but as an opportunity to get at best practices. Other areas of interest are work on accounting standards, and increasing levels of political and public confidence.

Seven starting goals:

1. Provide reliable and sustainable water infrastructure
  2. Provide accessible and sufficient water infrastructure
  3. Meet service and performance requirements at minimum sustainable cost
  4. Protect and enhance public health
  5. Provide a safe work environment
  6. Have satisfied customers
  7. Protect and enhance environmental health
- Each goal has performance indicators, numerical/metric as well as process/delivery benchmarking. W/WBI expects a final report by next April (2002), building on the existing wastewater initiative.
  - Another program is a national guide to sustainable infrastructure, innovation and best practices, with NRC and FCM (Federation of Canadian Municipalities). Technical committees have just been established, and we are collecting information to lead to best practices.
  - On the issue of leadership, this program should help to impart that sense of taking ownership of the product, which goes beyond just technical training and certification.
    - Will these learnings be shared with the public, the customer? (Fields, Diamond Management) W/WBI replies that there will be information shared through web sites and quarterly reports. Gauging best practices in customer satisfaction is difficult, with complaints a poor measure of that. One measure may be the amount of time and effort the municipality puts forward proactively in customer service. Joyce (Diamond) suggests some proactive approaches such as surveys to

- actively solicit input, advisory committees, consumer groups, comment cards.
- Are Ottawa and Toronto involved? (Proulx, Delcan). Ottawa is coming on board, although they were not at the workshop (W/WBI)
  - How will the program expand or filter down to smaller municipalities? (OSPE)  
W/WBI: So far the smallest are 70 or 80 thousand, but it will expand.  
Groundwater is a key issue. Some large organisations have small affiliated systems, e.g. Durham, Halton, York. Over time we hope to get smaller utilities to join. Martin asks what incentives there are for smaller water authorities who aren't there in terms of best management practices. W/WBI hope that this will become publicized through organisations like AMO, FCM, and more small systems will come to us. Martin calls for a structured workshop on the needs of smaller and rural communities. W/WBI note that in some small communities, the water system is not part of the industry associations, not in tune with what is going on in the business. Suggests a role for AMO. Agrees that our attention should be on the small systems, where the critical issues are.
  - OWWA/OMWA adds that in the U.S., AWWA and the National Rural Water Association have, despite differences, worked together on a circuit rider approach with funding largely from the federal government. OSPE adds that AWWA surveys indicate that utilities with less than a thousand customers are eager to participate. AMO notes that a national core group of very large municipalities would benefit from sharing information, while in Ontario we should also keep a focus on small systems.
  - Sancton notes that in the MPMP the government was imposing the measures, and the municipal response was dismissive. Now with this initiative, information is being collected collaboratively and professionals are agreeing that these are good measures. There are places that look good or bad by these measures, which could be seen as political dynamite as politicians and CAOs see this information. How is that being dealt with? W/WBI: there is a real openness and interest in sharing information, and looking for reasons for cost differences. There is a confidentiality attached with this information too, so that it can only be shared with member municipalities. We expect in Ontario to be able to publish only the Ontario municipalities. This is a problem but if CAOs are really interested in improvement this is a necessary step. OWWA/OMWA adds that the AWWA QualServe program is not a witch-hunt, but is aimed at finding out what you can do better. The utilities share information, and those doing the review learn as much as those being reviewed.
  - OSPE asks whether good operations have been correlated with corporate structure. W/WBI reply that organisational layouts will also be shared over time.
  - Public information is the best vehicle to allow professionals to argue for raising water rates to meet system requirements (OSPE, with agreement from W/WBI)
  - Benchmarking is also useful within a utility, keeping track of parameters over time to assess overall performance, as part of continuous improvement (CH2M Hill)
  - Is there a tendency to move towards minimal standards if the benchmarking focuses on cost comparisons at the expense of a focus on quality? (CUPE)  
W/WBI suggest that cost is only one element being examined.

- Leadership: The larger municipalities are acting as both leaders and champions, setting the direction and providing leadership or vision but also identifying who can be the champions, e.g. what needs to be done for rural communities (Martin). People with technical skills don't always lead utilities anymore. Our association has set up training for those in a leadership position in water utilities who do not have a background in the industry and need to understand what is going on in the drinking water business. Need something similar in Ontario. It is also valuable to get the senior people together to compare notes. (OWWA/OMWA). W/WBI notes that APWA (American Public Works Association?) also offers leadership training, but finds that generally the good simply get better and access is an issue.
- Does anyone disagree with the OWWA/OMWA comment about the shortage of high-quality leaders and the need for systems to compensate for this? (Hrudey). Fields (Diamond Management) suggests complementarity rather than compensation. OSPE notes that skilled people are being lost from the system because we don't promote them; engineers are not in a leadership role anymore.

### 3. SMALL SYSTEMS: MODELS & CHALLENGES

#### 3.1 The Water Industry in Rural Victoria, Australia

Martin presents "The Water Industry in Rural Victoria, Australia: A case study of reform."<sup>12</sup> Rural Victoria is comprised of small and very small systems. Victoria moved from the point where Ontario is now in terms of small/rural communities, a large number of small separately-managed sewage treatment plants and water structures organized in different ways and with wide variation in quality<sup>13</sup>, to a much more streamlined, consolidated, consistent, reliable, transparent arrangement through a framework put in place by the state government.

Until 1993, problems with water/wastewater provision were:

- low compliance with standards
  - fragmented, small organizations
  - blurring of responsibilities
  - limited access to funding
  - poor accountability
- The government policy released in 1993 identified over-intensification of capital, excessive debt, inefficient work practices and a lack of responsiveness to customers as other concerns. The Government plan, released in March 1994, had as key objectives:
    - improve efficiency and service
    - achieve water quality and effluent standards without relying on government

<sup>12</sup> Narelle Martin, 2001, "The Water Industry in Rural Victoria, Australia: A case study of reform," commissioned issue paper for the Inquiry, available online at <http://www.walkertoninquiry.com/part2info/commissuepapers/11nmartin/nmartin.pdf>

<sup>13</sup> For information on size of systems, refer to Martin, 2001, Appendix 1

- financial assistance
  - achieve economies of scale
  - promote more commercial approach to management
  - maintain legitimate community service obligations
- This was done by separating functions from local government and amalgamating into 15 water authorities, with skills-based boards appointed by the Minister, a clear focus on financial viability, and benchmarks and performance criteria established. Objectives were to achieve enduring public benefit by improving services and reducing costs, while reinvesting savings into the industry. Funds were made available, conditional on signing a Memorandum of Understanding (MOU) with the Minister.
  - MOU's asked water authorities to identify their financial plans, and to produce a dividend back to the shareholder which was the state government. This was corporatisation, not privatization. In a recent election, keeping the water authorities public was a key political issue in the campaign<sup>14</sup>; however, these corporatised authorities now have a commercial focus and if there were a decision to privatize, they would be ready.
  - Improvements: Increased accountability, with performance reports on a range of indicators included in public annual reports; water quality and effluent standards improved; infrastructure investment became more strategic, the culture changed; professionalism rose. High levels of cross subsidy between water authorities and local government were eliminated.
  - Authorities now pay a dividend of AUS\$20.6 million to the state, compared with receiving subsidies before of AUS\$30 million. Fields asks whether they were just better at what they did, or whether rates went up, and Martin concedes that both occurred.
  - The MOU established obligations to meet 31 specific health-related drinking water standards by 1999 and carry out a sampling program with public reporting, and compliance with bacteriological indicators rose from 27% in 1992 to 85% in 1998/99. In Ontario, such information should be readily available.
- Callaghan (Ontario) asks whether amalgamation followed political or watershed/ecosystem boundaries. Martin replies that it was partly a watershed arrangement, but various water authorities also suggested community linkages.
  - Doyle (Delcan) notes that this amalgamation was more administrative than physical. Martin replies that the changed structures, both amalgamation and new performance standards, drove a cultural change in the industry. Physical infrastructure was managed in a much more efficient, effective way, with audits finding much to fix in the systems and a higher level of professionalism resulting. There was little physical linking of systems, although some did occur when finances made that sensible e.g. shared lagoon systems.
  - Doyle (Delcan) asks whether there was much resistance to the perception of loss

---

<sup>14</sup> the government which introduced the reform process was defeated before the reforms were completed. It was widely speculated that the defeated government was committed to complete privatization.

- of independence, citing the King City pipe controversy here in Ontario. Martin agrees that there was considerable community concern, but there were many other reforms going on at the same time so this was only part of the uproar. These reforms were larger than the Harris reforms here in Ontario and many people did not like it, but for the water authorities it was a very good outcome: performance standards, transparency, reporting, accountability, change in level of professionalism (both personal and at a strategic thinking level).
- OPSEU asks about the major municipal systems in Victoria, and Martin explains that the legislative basis was very different. Metropolitan Melbourne had a water board with a huge department that provided services related to water and sewage to the metro area, with control of watersheds beyond municipal boundaries. OPSEU asks how the planning process worked, and Martin explains that for new developments, approvals are needed from council, from the EPA, plus arrangements had to be made with the water authority regarding provision of water/wastewater services. Land use legislation would come into play.
  - OPSEU: In Ontario some small systems are managed by OCWA through a central-radial system with regional offices, and others are standalone facilities with permanent staff. How do these operations get blended in the rural Victoria arrangement, and what happened to pre-existing bargaining unit relations? Martin explains that there were negotiations between municipalities and the new bodies in terms of which staff would move where, and with unions. Some sites had a person based there, others had one person servicing a range of sites. Investment was in linking with computer systems and monitoring. On bargaining, my understanding is that bargaining is with the authority rather than the individual site.
  - Holme, speaking as an individual rather than as OWWA/OMWA representative, discusses the idea of corporatisation, systems run as a business but the sole public shareholder. Transformations similar to rural Victoria's have occurred across Australia. The original driver was a federal initiative, a national competition policy, which drove dramatic, rapid change in the states. We have not yet seen such drivers in Canada and the U.S. Martin responds that a number of things happened around the same time, and that as a federation, national policies can be driven by the states. Hrudehy suggests that in Australia, some of both was probably occurring.
  - Mains asks about the amalgamation, and whether water authorities were given a choice. Martin explains that water authorities were asked to discuss with their neighbours whether they wanted to join, and 10 came up with a proposal that the other 5 disagreed with but were forced to comply with. Mains asks when the money was given, and Martin says it came a bit after amalgamation. Mains asks whether there seems to be a limit to the gains in efficiency or value from increasing size, a point at which you are getting only bigger, not better. Martin suggests that 15 is appropriate for rural Victoria, since there are also catchment issues, rivers and streams. One can map the relationship between the water authorities and the catchment boards (similar to Ontario's conservation authorities), and communities can see a connection to their catchment areas.
  - Mains asks whether the water authorities are commonly audited, and Martin

- replies that auditing is a commercial arrangement with a professional auditor, not chosen by the state. The report must be signed by the chair and CEO of the board. Joyce (Diamond) asks who inspects facilities, and Martin explains that for now it depends on the facility. There is not an accredited process for each board, although this may change in a second round of inspections. She notes that there has been a clear professionalization that occurred since the reforms.
- CUPE asks about competitive tendering in Victoria, and Martin explains that a number of water utilities will tender rather than designing/constructing themselves, and will take a project management role. This was not about hiving things off into a private commercial profit realm, but of getting a more efficient process to meet water quality and effluent standards. Doyle adds that the “national competition policy” in fact did little towards competition, in fact focusing on accountability and full pricing, still fundamentally run by government. In terms of the benefits of compliance and public reporting, we in Ontario have come a long way especially in developments since Walkerton such as engineering report requirements, public posting of those by municipalities over 10 000. The critical idea we should be learning in Ontario is to run water systems based on watersheds.
  - Martin agrees, notes that a productivity commission has worked on best practice principles. Doyle notes that the productivity commission is unpopular in Australia and their report is not seen as credible by many industry leaders in Australia. Martin concedes that there has been controversy about this report but notes that we can still look at the process they have gone through and see what will be useful to Ontario.
  - OSPE asks what happened to surpluses and debts when small utilities turned over their assets to the water authorities. Martin agrees that this was contentious. OSPE asks about total implementation time, which Martin gives as four to five years.
  - Mains asks about whether water rates are set unilaterally across the authority or on a local municipal base, with different municipalities within an authority paying different rates. Martin is not sure, and Mains wonders whether well-run municipalities are subsidizing less well-run ones.
  - OWWA/OMWA brings up the issue of contracting out (design-build, design-build-own-transfer, etc) and a concern that corporatisation is the first step to privatization. Sancton notes that in Britain in 1973 a similar regionalisation of water authorities happened, and those authorities were subsequently privatized. Hrudehy suggests that the Sydney water crisis may have precluded full privatization versus the corporatisation that had already happened. CUPE asks whether operations remained public with specific services contracted out. In urban areas of Australia there has been more widespread contracting out (Hrudehy) but in the rural Victoria case the changes were mostly structural (Martin).
  - What is the situation with private systems? (MOE) The cutoff in terms of whether a system requires a license is based on water volume. Private systems also need EPA approval. Privately run water systems are not common, and if people have reticulated water supply where is an expectation of also having a sewage system. Because of problems with septic systems affecting water quality,

- there is a move to get local government out of that area and the water authorities in. (Martin)
- Was the process of creating the 15 water authorities a facilitated process? What about groups previously at odds with each other, or in competition? (Fields, Diamond Management). They were given only three months to work things out. A report came out identifying the need to bring together disparate cultures as a challenge to the new water authorities. There was some assistance through the office of water reform. (Martin)

Martin ended the discussion with six key lessons learned:

- The State has a role in ensuring better outcomes
  - There have been significant advantages in disentangling from local government
  - Size matters
  - Changed role and composition of the boards was a significant driver in change
  - Financial accountability/transparency and requirements for public reporting helped drive change
  - The State made it clear that improvements in water quality and wastewater were to be the outcomes of the reforms.
- Hrudey recommends that we also consider the New Zealand scheme for drinking water in small communities, which has been running for 10 years<sup>15</sup>.

### 3.2 Problems and Challenges of Small Systems

- Martin asks for a definition of “small” systems. AMO explains that we should be talking about the size of the municipal water system, not the size of the community, since financing is through water rates not property taxes. OWWA/OMWA explains that five service connections, ten to fifteen people, is as low as is considered to be a regulated system. That would usually be a private system. Other cut-offs: in the U.S. 500 people is a “very small system” and 3000 is a “small system” though the latter is less important a category in Canada. Samuel (OWWA/OMWA) states that in his experience, systems below 500 get into problems of part-time staff, lack of expertise.

#### ***3.2.1 Two problems in small systems are identified: resources, and technical assistance. Hrudey also notes that some small systems work and asks whether there are any large systems in Ontario that are problematic?***

- Of the nine large Ontario systems, only Hamilton had violations in last autumn’s assessments (OPSEU) which in Hamilton’s case are related to construction more than operational problems (Martin).
- By contrast, in the towns, villages and townships the number of violations is high (OPSEU). OWWA/OMWA suggests that these may be largely housekeeping

---

<sup>15</sup> New Zealand Ministry of Health. 2000. “How to Prepare and Develop Public Health Risk Management Plans for Drinking-water Supplies”. Available at <http://www.moh.govt.nz/>.

(administrative) rather than technical problems. Martin asks how you know you don't have a problem is "housekeeping" is neglected, and OWWA/OMWA suggests looking at lab results.

- Based on MOE press releases referenced against a list of treatment plants, there were 421 water treatment plant deficiencies.<sup>16</sup> The 35 that failed to put forward a report were concentrated among smaller systems. OCWA was significantly above industry standards.

### ***3.2.2 Are there points in the size continuum at which significant problems tend to be associated with a certain size of operation? (Martin)***

- As size decreases, variability (of the way in which things are run, the quality of the facility) increases. OCWA plays a role because it has concentrated on operating smaller facilities (MOE)
- The operator in a smaller facility may be part-time, with a questionable level of expertise or competence. The manager, too, is responsible for the water treatment facility but has other management roles so is being spread out in terms of competence and demands on time. Similar phenomena at the level of leadership, and again at the overarching/oversight level (e.g. municipal council). (Fields, Diamond Management)
- There is a range of private systems, from private communal (trailer parks, housing developments, seasonal resorts, parks, campsites) down to private individual wells, of which there are about 5 or 6 hundred thousand in Ontario (MOE).
- How many communal systems? (Martin) MOE explains that communal just means serving more than one household, and there is no accurate definition. If you're serving less than six connections you need no approval, but many private communals serve more. There are a number of legislative categories.
- Another category captured by new regulations are industrial systems e.g. mines (Fields, Diamond Management) if they're providing water to staff. Also agricultural operations, again if they have their own water supply rather than using community pipes. (MOE)
- Systems that were private communal are now being caught by new regulations. (Martin) MOE explains that historically they would not approve a new private communal system. They now require that it be owned by the municipality or that there is an agreement in place for the municipality to take responsibility if the owner defaults. Trailer parks are the common examples. We became strict about the default agreements about 15 years ago. MOE adds that there are many facilities without a certificate, which have not applied for one. Martin notes that this means municipalities with a limited rate base, perhaps a part-time treatment plant operator, now have to pick up responsibility for other water treatment plants.
- If you are issued a C of A, do you also get a license? (Martin) There is no license

---

<sup>16</sup> The 421 deficiencies were as follows: Insufficient number of samples analysed, 203 plants; inadequate maintenance of disinfecting equipment, 74; inadequate water treatment, 50; inappropriate certification/inadequate training, 56; failure to register accredited laboratory, 2; failure to submit quarterly report, 35; failure to submit action plan, 1. Refer to OPSEU submission to the Walkerton Inquiry, "Public Interests in Water Facilities Operations," June 2001, prepared by Tom Parkin.

to operate in Ontario, although operators require licenses; need approval to construct, not to operate, but there is some control in terms of conditions put on approvals. (MOE)

**3.2.3 *The model utility approach assumes that small systems will self-select whether they can meet the accreditation standards. In Australia, by contrast, the model is an aspirational framework and those running small systems, we recognise, will not have all of that in place. The Australians are not yet pursuing accreditation as a national goal, although the NHMRC framework is national in scope. If we want a truly accredited system, can small systems figure out whether they can pull it off or consolidate to large systems that can pull it off?*** (Hrudey)

- Delcan suggests the answer may fall somewhere in between. In small systems, once the infrastructure is in place and equipment is working, most of the time operation of such a system is not onerous and having a Class 4 Operator all the time is unnecessary, and a part-time operator make sense. But we need backup for that Class 1 Operator when (s)he runs into trouble. We drew a parallel with the medical officer of health system in our paper - we need a water trouble-shooter available 24 hours. In the past this was essentially provided by MOE. The “regional water officer” would be familiar with those systems, someone with strong technical skills. Municipalities would pay not on a per-use basis but up-front, so the resource is there and more likely to be used. This person also needs regulatory teeth to address problems they see in the systems. (Doyle, Delcan)
- The prerequisite for calling on such help is for the operator to know they have a problem. (Hrudey).
- A proper certification program provides an operator who knows when there are problems, how to fix them, what the big picture is, and having a free or pre-paid technical resources would also be useful. The problem with having a regulatory function is that an operator may hide things from the inspector or regulator. But the water officer should be able to go to the inspector or regulator and say with some authority that they should intervene (OWWA/OMWA; Doyle, Delcan)
- If MOE or “the government” is ultimately the regulator, keeping the public trust, they should not be telling people how to do their job because they have to enforce; separation of responsibility is important. Communities or associations can hire the expertise. (Joyce, Diamond Management)
- Audit frameworks should be appropriate for small, simple systems that do not have problems. We do not want to create resistance by putting onerous requirements on good performers who will feel penalized for other municipalities’ problems. (OWWA/OMWA) Swain agrees with the difficulty of forcing something on small outfits that have not had a problem and might resist.
- Size is not the determinant of scale; by scale we mean capacity in terms of infrastructure, financing, technical capacity, human resources. A small operation can have appropriately trained operators, good infrastructure, and pass any audit. To determine scale, consider also source water quality, quality of water you want to produce, size/spread/density of population. Size alone is arbitrary. (Joyce,

Diamond)

- In letting utilities figure out how to fulfil requirements of TQWMS, we need a task force, not prescriptive but to help support communities to determine whether to go on their own, rely on neighbours for backup, band together to hire someone to help them, etc., rather than leaving everyone to invent the solution. (Joyce, Diamond)
- If there is merit in having certain thresholds or rigour around some things, the utility must be able to demonstrate those competencies. We need accountability, transparency, not onerous requirements for their own sake. (Fields, Diamond Management)
- On access to advice: at one point MOE had a section in its water resources branch, but it was dissolved in the early 1990s and scientific staff scattered/dissipated. This group had been responsible for listening to municipalities' concerns. The group was closely connected to OCWA, which was then in MOE. Some members had been operators, some were scientists, and very close interaction with water resource branch head office. From the operator's point of view, however, there was the fear that going for help could trigger regulatory action. Yet what seemed to work at MOE was operational knowledge coupled with an advisory role. OPSEU has been thinking about a partnership with OWWA/OMWA to establish a body a little distant from OCWA but which would borrow operation expertise; it seems AWWA is doing something similar. OPSEU and Fields (Diamond Management) like the idea.

**3.2.4 *Given an extreme example: a town of several thousand people whose head operator is illiterate, with only a grade six education. He could not read manuals, do math, never mind calculate a chlorine residual, but was highly conscientious. The travelling MOE engineer showed him exactly where the needles should and should not point, and he has operated this plant for a number of years and succeeded at convincing the town council for upgrades. (Swain). Does this suggest quality management circuit riders too? (Van Loon). What is the solution (AMO)?***

- What happens if this operator gets hit by a truck? There is no backup, no memory in the system. (Hrudey)
- If something goes wrong, what happens? We have dealt with a similar situation, a municipality where they call us to set their alum doses when turbidity changes, but we can only advise so far at a distance. Most of the time they turn out wonderful water, but it is a disaster waiting to happen (Doyle, Delcan).
- This is why certification should be building-block rather than task-specific. We all recognise that grand-fathering for a certain period is necessary but we must find a way to move beyond this approach (OWWA/OMWA)
- AMO expects that certification is the issue. It seems an unacceptable risk to have someone who might receive a memo saying, "we have results that you must act on immediately," and have no way of comprehending (not able to read) or responding appropriately. The basic skills required are those of

problem solving.

- Requiring grade 12 however may be met with some resistance if this is seen as arbitrary. Qualifications must be tied to the needs of the job, not to arbitrary educational attainment (OPSEU).

### **3.2.5 What about the role of OCWA?**

- OCWA has proximity to communities, someone who can arrive on fairly short notice. (OPSEU)
- In small systems, there's a risk because operators are not full-time focussed on water, and below a certain size perhaps all systems, those that work and those that may not work, should be taken in by some agency to mitigate that risk. OCWA has certified Iso14001 plants, sophisticated proprietary information technology, ability to offer small systems this technology, realtime monitoring from remote locations. An operator at a hub office can know what's going on at all the plants under her/his responsibility (turbidity, chlorination, etc) with reports going to area compliance officers of OCWA to deal with questions. OCWA should be pushed to make this information publicly available online. OCWA has superior training, a hub and spoke arrangement, with central administration of purchasing, managing staff so people do itinerant work at several locations but are totally focussed on safe water. There are about 30 hubs across the province now, with area offices as administrative centres. (OPSEU)
- OCWA itself could be accredited (Swain). ISO is now being done on a facility basis (OPSEU)
- The mid-sized municipalities are a problem in terms of whether they too should be covered by OCWA. Little reason to do so, except for some environmental value to reorganizing along watershed lines. There is potential for alliance between municipally-run systems and OCWA-run facilities, upstream-downstream linkages, adding ability to collect information on total withdrawals, pollution loads in watersheds, etc, while preserving ownership and autonomy of mid-sized municipal systems (OPSEU)

## **4. Accreditation and Certification**

### **4.1 Training and Certification**

Gerald Samuel (OWWA/OMWA) discusses his experiences with developing and operating an Alberta program for training and certifying operators, as well as work done on a national and international level. (*A forthcoming paper will be submitted to the Inquiry - please provide reference*).

- Certification is the certification of a person to meet certain qualifications. We are discussing people who operate municipal water treatment or distribution systems, from people in the trenches to professional engineers, chemists, scientists and biologists, who may be operators or managers. In smaller communities sometimes we are treading on people's toes by imposing certification requirements. Some small

communities don't want to be told what they should or should not drink.

- We looked at operating treatment facilities, provincial regulations/standards around safety, health and environment come into play. Whoever is in charge, often the municipality, has the responsibility that operators be trained. Governments and other organizations first saw a need there, and decided to throw some training at these people. Whether they “catch” it or not is another question as there was no skills evaluation done. Perhaps the wrong institutions have become involved in training. Those who most needed the training were not the ones who showed up for training programs. Instead training reached the most-conscientious minority. We decided to bring in certification to supplement the training.
- Training and certification are distinct. Both support good operations. In the North American system the certification program is a credential, showing you've met certain minimal qualifications, but there is a difficulty in meeting the needs of operators of very different sorts of systems.
- Historically, not until the 1960s did attempts at certification programs begin in Canada. In the 1970s, AWWA and WEF (Water Environment Federation) suggested we look at a system of certification from the Association of Boards of Certification (ABC) in the U.S. Their program was designed for water systems of different sizes and levels of complexity, and operators who were at both junior and senior levels. In Canada, a group representing the provinces examined the system in 1974, came up with a slightly different system, which recommendations ABC then used to amend its own program. Most of the Canadian provinces have now joined ABC and use the ABC certification and facility classification system as the basis for their certification programs. Ontario's program, which became mandatory in 1993, is a member of ABC.
- Cannot say that a person is “trained to be certified”; qualifications in a certification program cannot guarantee that people are competent. Fields (Diamond Management) asks for clarification; what about a demonstration-of-skills test? Samuel (OWWA/OMWA) says that the only way to certify if someone is competent is to follow them around, make notes and ask them what they are doing. Beyond the skills test there are problem-solving abilities, public relations, reporting, dealing with government. Hrudehy suggests that one can train for competence but not guarantee that competence will be used. Samuel (OWWA/OMWA) agrees, adds that no training program can do it all. There will always be on-the-job learning, once certification has demonstrated the capability of learning.
- Three requirements for certification programs: (1) a certain amount of formal education, (2) a certain amount of hands-on experience, and (3) to pass an examination
- Proulx (Delcan) points out that in Ontario training of 40 hours/year is mandatory to be certified, but Samuel (OWWA/OMWA) notes that that only applies *after* they are certified. Problems with training include access for those in remote

areas, and timing of training programs for new operators. Governments have gotten in and out of training over time. The government's responsibility should be to facilitate, make sure training exists.

- OWWA/OMWA recommends:
  - Mandatory training for certification and re-certification, which could have many possible formats. Recommends 12 hours per year, 36 hours over 3 years, continuous learning to keep people involved and interested, and to promote their professionalism. Professionalism and general status of people responsible for water systems is important so when they go forward with recommendations they are seen as credible, or when they ask for more money for parts of the system, or ask for continuous education.
  - In the U.S. certification and re-certification every 3 years were met with resistance from people who feared losing their jobs, and from municipalities who didn't want the expense. There was grand-fathering, which meant that sometimes a person worked 25 years without re-certification. Grand-fathering should be phased out; grandfather certificates should be recalled.
  - Minimum education requirements for operators: The education requirement was always set at a high school diploma, but not enforced since people were allowed to substitute "or equivalent" if they had experience. In 1991 in Alberta that changed, so that one needs a high school diploma, high school equivalency diploma or General Education Development (GED) diploma. Necessary for literacy, numeracy, but also problem-solving skills, communication skills, as a building block to be a more competent learner.

***4.1.1 Do any of the bodies responsible for certification in fact post information on those authorities were staff are or are not certified? (Martin).***

- Samuel (OWWA/OMWA) replies that there must be some regulatory control. If operators are unqualified, you are in contravention of the approval/permit and could face enforcement action.
- CELA notes that this requirement exists in Ontario right now. Proulx (Delcan) elaborates: facilities are rated on a 1-4 scale by the province, and it is against the law for the operator not to have a license for the appropriate level. To get certification, there are exams put out by ABC and tailored by Ontario to this province's context, e.g. northern climate, metric system. After the exam, you need to get people shadowing the appropriate people to learn how to do the job right, not just rely on the fact that they are licensed.
- Proulx suggests the need to focus on the workers in the trenches of the distribution system, more than on plant operators. Another gap is that in Ontario the province requires 40 hours of training, but the plant owner rather than the person being certified is held responsible. Suggests that responsibility should be with the person who is being licensed. Also suggests that the cost of training should be seen not as a cost but as an investment, which works out to a savings and pays for itself many times over as those well-trained people find efficiencies. That fact is lost in the municipal structure.

- CUPE is in favour of more and better training, and questions Proulx's assertion that while training benefits the employer it should be wholly the individual's responsibility. (CUPE). Proulx (Delcan) counters that in any other profession it is the individual's responsibility to maintain accreditation. Fields (Diamond Management) suggests that in the model, as part of the performance management system, it is the employer's responsibility to assist employees in reaching maximum performance as part of the business strategy of the organisation. CUPE adds that managers are in the best position to provide direction to employees about appropriate training.
- OWWA/OMWA notes that AWWA and WEF are integrally involved in creating the certification program, and in many places the association provides training as well as providing online programs. One challenge is that attending events such as conferences is a very valuable learning experience, but few operators have that opportunity to attend, talk with leaders in the industry, train, network, talk with peers about what works and doesn't work.

#### ***4.1.2 What is the difference between the 40 hours already required and the 36 hours of CEUs (Continuing Education Units)? (CELA)***

- Proulx (Delan) notes that in the past, some conferences may have had CEUs attached, which Samuel (OWWA/OMWA) suggests was inappropriate. Samuel explains that the 40 required hours could be considered professional development, in-house training. Professional development is generally considered to be activities such as conferences, on-the-job training, self improvement, committee activities and other events wherein objectives are not specified or ensured, but the value of participation for educational and career growth is recognized. A Continuing Education Unit (CEU) is defined as 10 contact hour of participation in an organized relevant continuing education experience under responsible sponsorship, capable direction, and qualified instruction. There should be an evaluation component and usually, the certification or licensing authority will have to approve the event for CEUs.
- Fields (Diamond Management) asks about the experience and education requirements of different levels of operators, and asks for a definition of 'experience.' Samuel explains it as performing operational duties with supervision, but no teaching requirement, and Proulx (Delcan) adds that there are exams as well. Fields suggests that the system requires unmuddling, and calls for an apprenticeship model:
- CH2M HILL / Diamond Management suggest training should be through the Ontario Ministry of Training, Colleges and Universities (MTCU). For apprenticeship, we define the competencies, both skills and a theoretical component. I say we can test competency, with an exam for theoretical competence, and a demonstration of skills test. Apprenticeship training standards should be available to all operators acting as trainers and to the individual, so we ensure that all bases are covered. An in-school component should parallel the on-the-job part. Rather than using surrogates like number of years of college, we should train operators on certain things, including skills such as team work, problem solving. Federal dollars may be able to be brought to the table to support such a program, and it can be recognised across Canada. There could also be a platform to obtain a degree, allowing a career path for operators and ability to bridge across the technical needs of the organisation, and to move into

management ranks.

- OPSEU cautions that organisations such as OWWA/OMWA do not normally involve the people on the shop floor from the beginning, and that should be built in. OWWA/OMWA acknowledges that operators are very knowledgeable and are not asked for input enough. OWWA/OMWA also notes that there is an advisory committee for the certification program consisting of people who advise the ministry: representatives from MOE, CUPE, OWWA/OMWA, OCWA, OPSEU, operators, etc.
- CELA refers to Part 1(b) evidence presented on June 7<sup>th</sup>, noting that there is now no specified training prior to certification other than ability to pass the exam. The 40 hours are very broadly defined with no minimum number of topics to be covered. That remains true with the 36 CEUs over 3 years. That failing must be addressed.

#### ***4.1.3 What has the MOE's role been in training?***

- MOE created 5-day courses, which at some point went out of MOE into the Ontario Environmental Training Consortium. The courses have since been whittled down from 5 days. Is content being shrunk, people being told only what they need to know for their particular plant rather than receiving real professional training? (OPSEU). Callaghan (Ontario) refers him to transcripts of the examination of Brian Gildner in part 1(b) of the Inquiry.<sup>17</sup>
- OPSEU agrees that pre-test training should be mandatory. Revocation of grand-fathering and movement to apprenticeship training raises issues, e.g. resistance by people who need to re-certify to continue the job they are already doing. Swain asks whether it is conceivable that in the wake of Walkerton the province will allow grand-fathering, and OPSEU replies that the perspective of employees still needs to be addressed. On the issue of high school requirement as a barrier to jobs, this may not be an appropriate measure of whether someone can do the job.
- Samuel (OWWA/OMWA) notes that he advocates not re-certification but renewal of certification, and continuing education is found in almost every profession.
- The system right now is not an apprenticeship model. The colleges that were offering training were all offering the same basic water treatment program with few offering other programs, and they spread the students too thinly across the system. Apportioning of students must be addressed. (CELA)
- It is becoming more difficult to schedule training for staff because in the past few years many municipalities or water authorities have reduced staff. (W/WBI)
- On the profile of the plant/system operator, they tend to be looked on not as skilled trades, and make less than electricians. They should be recognised as a higher-profile skill trade and compensated accordingly. As an incentive, need to tie compensation to the skills employees gain, with progress not by time but by skills. (W/WBI)
- Would those who are now grand-fathered have to go through the exam and training process? What about those certified without grand-fathering but who don't have grade 12? (CUPE). Grandfather certificates should have further requirements put on them. Options include a customized training package that recognises that some don't

---

<sup>17</sup> Refer to examination of B. Gildner during Part 1(b) of the Walkerton Inquiry, June 7, 2001, available online through the transcript repository at <<http://www.tscript.com/>>

have the ability to obtain certain skills. For those without grade 12, perhaps a specialized training package. I suggest that actual certification be accepted, no changes retroactive except grandfather certificate. (Samuel, OWWA/OMWA) CUPE replies that they would not necessarily oppose that; concern with process, that people are given opportunity to get the skills they need.

- CUPE asks: if this is part of the continuous improvement process, would you also recommend the same for engineers and managers? Samuel notes that although this was beyond the scope of his work, he agrees and will discuss it with OWWA/OMWA. OSPE notes that there is a trend to re-certification of engineers in Ontario, and that could happen in water as well.
- CUPE reminds us that in Part 1(b) testimony, it seemed that as certification requirements changed, municipalities were afraid of losing the people they had who were running the systems fairly well. CELA confirms.
- Apprenticeships: Samuel (OWWA/OMWA) notes that certification of operators has been seen as different from technicians/technologists and tradesperson apprenticeships. Not everyone who enters the system at level 1 will work their way to level 4, which makes the apprenticeship model less useful. Fields (Diamond Management) argues that new apprenticeship model has a common base and discrete modules. Samuel also notes the difficulty that having a particular mentor or master is not always practical in the industry. However, the apprenticeship model, if it works in Ontario, becomes an enhancement of the existing model and my recommendations. MOE asks whether there is anything fundamentally different between the two systems. Samuel adds that the certification model was set up to allow entry for people coming from many different directions, whether starting at Level 1 and staying there, starting at Level 1 and progressing to higher levels or becoming licensed after working in a plant as a professional (engineer, chemist etc.). An apprenticeship model is much tighter and more focused.

**Consensus Statement:** There are substantial benefits to enhancing the profile and professionalism of water treatment operators as an occupation (Hrudey). OPSEU suggests enhancing their pay as well.

## **5. HOW WOULD AN ACCREDITED SYSTEM RELATE TO THE REGULATORY SYSTEM?**

### **5.1 What would be the audit done on the accredited system, versus compliance enforced by the regulator? Should we go to an Ontario-only interim standard, taking perhaps 6 to 8 months to arrange, or attempt a full CSA [Canadian Standards Association] process that would take 5 years to do well? (Swain, Hrudey)**

Husseini (CSA) responds:

- Need a voluntary system to complement strong regulations. Need to adopt a standard, which could be based on the Australian framework and fast-tracked in far less than 5 years, following ISO and applicable to all sizes of system.

- Follow that with accreditation system. In Canada, CSA is the overall agency that accredits registrars, auditing systems, etc. Under SCC (Standards Council of Canada) there are both standards writers, and registrars/certifiers. Auditors/certifiers visit and write reports; like a driver's test, they tell you what your gaps are and how long you have to fix them, but not how – consultants can do that.
- To adopt a standard, CSA can work two ways. A full Canadian standard system takes 2 to 3 years from scratch: need a well-balanced committee, process with voting. Or you can come up with other available standards as a seed document, get a focus group and shareholders to run through it, have it validated/approved by CSA in 1 to 1.5 years, possibly less.
- Recommends starting with Ontario, and others may choose to join.
- Martin cautions that while a standard is valuable, a strong regulatory framework is nevertheless important. The Australian example illustrates the motivating power of prosecuting a water authority. Having a licensing system is important, and the regulator must be resourced sufficiently to be able to check compliance with licensing conditions.
- **Point of contention: wastewater.** In small communities often the same body deals with both water and wastewater and so we need standards for both (Martin) especially because of concern for source water protection (Swain). Hrudehy points out that if we intend to use the Australian framework to fast-track standards, it does not address wastewater, but Martin replies that the concern is structures, regulatory framework, not just particular standards. Hrudehy disagrees, noting that almost 3 years have been invested in developing a system focusing only on drinking water and it will not be possible to easily expand the focus to wastewater in a reasonable time frame.
- ISO standards do not automatically equal quality or safety, but apparently the French are pushing for ISO standards for water/wastewater which may become a factor in trade/investment agreements e.g. GATS [General Agreement on Trade in Services]. (CUPE). CSA agrees that the French are pushing this, and have submitted a proposal to create a new technical committee within ISO. It will take some time. WTO is talking to ISO about environmental labels, e.g. as unfair barriers to trade.

### ***5.1.1 How would regulation and auditing related under the proposed model utility?***

Joyce (Diamond) describes the “model utility” approach to regulatory and auditing/standards functions outlined in their Issue Paper:

- Overlapping relationships are a problem. When C of A is issued, MOE goes on information presented to them but there is a disconnect, since that is not always what really goes on in the community, e.g. Clarence Creek. Historically, MOE was a helpful resource to the community, as well as approving applications. Important to clarify responsibilities and roles.
- In regulatory environment, water quality standards must be clear, understood,

based on science/research/evidence. For standards, overriding concern should be health, quality of water. Cost-benefit approach should enter into implementation, not standards setting.

- Licensing should be by government, with regulator as a single window of access from the utility's perspective, with a single focus on water. License to operate must be reviewed and renewed, and the audit function comes into play here. License should include ability to demonstrate that they are accredited, and the government inspector should not help them fulfil that. Accreditation based on ability to run the utility, compliance with standards, training program, performance development, financial plan in place – accreditation for management and operation of facility, people and finances as well as technical.
- Regulator can approve, approve with conditions, or may be triggers for further action e.g. regulator telling utility they must find a way to achieve necessary competence, and imposing a solution if necessary.
- Regulator would report annually on their own activities, document that they have the expertise, and decisions must be seen as fair, with appeals process. Environmental Commissioner should play a role in annual report.
- Regulator should have a role in collating utilities' reports to report on Ontario's water province-wide.
- Task force with community/consumer participation could evolve into advisory board, a resource to help the regulator look at financial management issues, service delivery, etc. CUPE notes that it likes this idea.
- Audit function is separate, with internal evaluation and annual self-audits as part of quality management, plus peer reviews, plus more technical/rigorous audits done in association with CSA-registered standards.
- Hrudefy notes that this is not self-regulation, but internal audit and standardised audit as well as performance reporting to enhance the compliance inspection by the regulator.

**5.1.2 *For utilities that are doing a good job right now, will the value of winning over consumers through transparency be enough to motivate them to take on this extra formalisation?* (Hrudefy).**

- Fields (Diamond Management) recalls W/WBI assertion that many are already moving in that direction.
- OPSEU quotes Section 10.9.4 from the "Model Water Utility" paper that "the Canadian Drinking Water Guidelines will form the basis of the standards for Ontario." Does this suggest that new regulations the province puts forwards would cease to exist and we'd default to Canadian standards? MOE explains that normally guidelines developed nationally are adopted as Ontario standards but Ontario may be stricter. Fields confirms the intent of the paper was not to reduce Ontario's ability to be stricter than the national guidelines.
- OPSEU notes another concern, spinning regulatory control from public agents, letting a legislative framework be set by a board instead. Joyce (Diamond) replies that their proposal clarifies and confirms the role of the crown in protecting and

- promoting the public interest, without specifying whether the regulator should be in government or a crown agency. The regulator would be involved in developing ISO standards, and can always call for revisions to these standards.
- OPSEU notes a strong public interest in not moving towards set of standards that is specifically industry-developed such as ISO, HACCP. Fields (Diamond Management) notes that CSA would be involved. The implementation plan calls for an accountable minister to strike a task force to kick-start activity. The task force would create a working group including regulator, industry, consumers, unions, etc, and quickly draw on ISO, HACCP, Australian framework, QualServe, etc, to create a model for Ontario. OPSEU asks about ongoing standards development, and Fields suggests that the task force would become an advisory board to the regulator, while professional associations would also be involved.
  - OPSEU suggests that a strong linking, not decoupling, of policy functions, scientific knowledge and regulatory power of the crown. Joyce (Diamond) agrees to importance of clear role for regulator and resources for it to do its job.
  - Swain agrees to importance of the crown's interests being strongly represented at the consensus development of CSA standards, given the strong public interest in public health.

**5.1.3 *If we switch from approvals to construct to approvals to operate, such approvals would not be issued unless the utility is accredited. But if they do not become accredited or lose accreditation, do we remove authority to operate the water system?* (MOE)**

- Regulator would encourage solutions to be found, in some communities trucking water or point-of-use systems might be necessary. The ultimate hammer is to force a solution, not just pull the license (Joyce, Diamond). Martin suggests other powers such as financial penalties and director liability.
- The approval to construct is still important, making sure the tools are right before the bulldozers and a multi-million-dollar facility is built. (MOE). Fields (Diamond Management) agrees that we might still have CofAs. Mains (CH2M HILL) notes that the term "certificate of approval" implies provincial liability, which is problematic. Regulator role should shift to ensuring that proper review processes have gone through. MOE reiterates that complete reliance on the original design is problematic. It has been about 20 years since we told people how to complete their application forms.
- On the liability issue: we have a certificate of approval system in place for water, as for waste and air, and a common law framework on regulatory negligence exists. We cannot state that the regulator has no liability, nor create a regime where those common law responsibilities are negated. Cannot tinker with who does what without understanding legal implications. (CELA). Hrudehy distinguishes a certificate of approval from an operating license. Swain notes that modern C of A's look much like an operating license, but the old ones are the problem. This anomaly should be addressed.
- In terms of regulator liability, another concern is the matrix of confusion around responsibility for waste discharges. Source protection is important to protecting human health. We would like the government to choose a single point of

- responsibility on a watershed basis. (Mains, CH2M HILL)
- Starting with a model utility, and driving change from the perspective of the individual utility, is very different from the Victoria model which started from structural change (MOE). Martin confirms that starting from the individual utility would not have worked in rural Victoria, in part because of linkages between using water, water/wastewater as development tools to entice industry and increase rate bases of municipalities, etc. People were not volunteering to give up authority over infrastructure they had invested in. Joyce (Diamond) denies that this is either bottom-up or top-down, but draws on advantages of both.
  - Martin asks what the drivers are. Hruddy suggests the driver is a description of what has to be done to deliver safe water, with reorganization resulting if necessary. Martin suggests that other carrots or drivers be identified.
  - OPSEU expresses concern that if the driver is a regulator pushing people out of compliance, it is an industry shakeout rather than an orderly merger to move to a better system. In a shakeout, people grab the closest available option, not necessarily the best. If small municipalities fall out of the system as a result, we need ways, resources, to catch them. Fields (Diamond Management) agrees that the process must be facilitated, with help provided.
  - Regarding culture and “restructuring fatigue”, Hruddy suggests that in Ontario, and Canada in general, massive reorganization from the top down such as rural Victoria experienced would not be popular with a population in Ontario which has experienced a lot of restructuring recently. Joyce (Diamond Management) agrees that restructuring fatigue is important. Their model is based on confidence in the ability of municipalities, water industry, consumers, more than in letting a ministry/secretariat drive province-wide restructuring. That top-down model we saw in health care, municipalities, schools, and we do not want to let it loose on water.