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Employees Union**

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**A Submission to
the Walkerton Inquiry**

Public Interests in Water Facilities Operations

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PART I: INTRODUCTION

OVERVIEW OF THE PAPER

1. The recent Walkerton tragedy has focused attention on how public policy and activity needs to evolve in order to create a safe drinking water regime for Ontario. We understand the idea of a policy regime to be the operationalization of various elements working in combination for the common purpose of achieving stated policy goals. Much attention has been given to the public need for appropriate regulation, information sharing and effective enforcement in a safe drinking water regime. This paper explores the less-discussed direct operational role required by government.
2. This paper briefly overviews the Ontario Clean Water Agency, the province's current Crown water authority, then addresses issues relating to the Ontario government's involvement in water works operations under two banners. First, issues with regard to the Crown's strategic interests in waterworks operations are considered. Second, issues concerning the environmental interests of water works operations are discussed.

STRATEGIC INTERESTS IN CROWN WATERWORKS OPERATION

3. Our paper argues that the existence of a Crown water operator gives the Government of Ontario the ability to act to protect drinking water quality in important ways that otherwise would not be possible or could only be achieved by less optimal means. Hence the existence of a Crown water operator is of strategic interest to the Province of Ontario in its pursuit of a successful safe drinking water regime. We have identified and will discuss seven important strategic interests of a Government of Ontario safe water regime that require or are optimally served by a Crown water operator.
4. First, government needs to ensure that in the case of a major catastrophe, such as the Walkerton crisis, there is an organization capable of providing remediation. This paper will show that only an operational agency of the government of Ontario was capable of remediating the Walkerton situation.
5. Second, MOE regulators and policy-makers need co-operative access to a diversity of experience and facilities in order to maintain innovative and continuously high regulatory standards. This paper will argue that municipally-based water system are not able to support this need and that it can be satisfactorily achieved through a Crown water operating agency.
6. Third, strong public policy for safe drinking water requires the establishment of an agency capable of fulfilling the spectrum of information and advice needs of local water operators. Such an organization can only be built on the basis of a provincial public agency with day-to-day operational expertise.

7. Fourth, the Crown has an intense interest in ensuring quality training as part of its mandated training regime. Only OCWA has the curriculum, the trainers and the regularly scheduled courses in all regions of the Province required for resetting this vital aspect of the safe water regime.
8. Fifth, in certain situations government needs the ability to assume waterworks operation for reasons of water quality, contract abandonment or removal of negligent operators. A provincial agency is required to succeed in this role.
9. Sixth, municipalities need structures to assist them in accessing pools of capital. Provincial government agencies can most efficiently create this access.
10. Seventh, the government of Ontario is engaged in water subsidies. In such a situation, direct public administration of the subsidy is preferable to indirect public or direct private administration for reasons of efficiency and accountability.
11. We will show that no model of water management other than one that includes a Crown operating enterprise can fulfil the seven public needs listed above.

ENVIRONMENTAL INTEREST IN PUBLIC WATER ADMINISTRATION

12. In addition to the strategic need for a Crown waterworks operator, we will also argue that there are environmental interests that directly require the management of water resources through a Crown enterprise. In this case, the inability of some municipalities to bring sufficient scale to waterworks management, combined with a preferability for public administration of waterworks enterprises, results in a public interest for a provincial Crown enterprise.

GENERAL DESCRIPTION OF CURRENT CROWN WATER OPERATIONS

13. The Government of Ontario has for many years been an operator of water services. Currently the Ontario Clean Water Agency serves in this role. As an Agency of the Government of Ontario, the Agency's role is set through three mechanisms:
 - Legislation (*Capital Investment Plan Act, 1993* and *Water Resources Act*);
 - a Memorandum of Understanding between the Agency and the MOE; and
 - the Agency's policy board, the Board of Directors.
14. For the past number of years, the combined effect of these mechanisms has been to require OCWA to be almost primarily focused on one role – the operation and management of water and wastewater facilities in the province of Ontario – with some attention to the development and building of facilities.

OCWA'S LEGISLATIVE BASIS

15. OCWA was created in 1993 through the *Capital Investment Plan Act, 1993* as a Crown Agency of the Province of Ontario. The legislation gives the Agency the following objectives:
 - (a) assisting municipalities to provide water and sewage works and services on a cost-recovery basis by financing, planning, development, building and operating such works and services
 - (b) financing, building and operating water and sewage works and services on behalf of Ontario on a cost-recovery basis; and
 - (c) Providing these works and services so as to protect human health and the environment, encourage conservation of water resources and support provincial policies for land use and settlement.¹
16. OCWA has never played the financing role originally envisioned. At the time of its passage, the *Capital Investment Plan Act, 1993* foresaw a critical role for the Agency in managing the debt portfolio of capital upgrade. The value of this original vision was seen with a perhaps unanticipated outcome shortly after the creation of the Agency when the loans to municipalities that had become transferred to OCWA were consolidated, generating millions in interest savings. While it may not have been consistent with the original vision that savings came to be held in the OCWA account, the activity does illustrate the inherent value in capital financing that an organization like OCWA offers.
17. Similarly, OCWA's role in encouraging water conservation and supporting appropriate land use and settlement has been weak at best. Indeed, a few years after its establishment, OCWA's vision statement was abridged to remove the role of encouraging the "wise use" of water resources.
18. Thus, even in a short eight years the direction of OCWA and its public role has changed considerably.
19. OCWA activities and powers are also derived from the *Ontario Water Resources Act* (OWRA). Through this Act, OCWA is given the power to lay and uncover pipes under public roads and control easements; the Minister of the Environment, backed by the Ontario Municipal Board, is given the power to direct OCWA to carry out maintenance, operation or construction with respect to a municipal water works; the Ministry of the Environment is given the power to fix the water and sewage rate in a declared area of public water service or public sewage service; and the rules regarding water rates and contracts with OCWA are set out.

¹ Capital Investment Plan Act, 1993 s 49.1

20. Before its establishment in 1993, the operations of OCWA were carried out through the MOE as the Water Resources Branch. Prior to the formation of the MOE in 1974, the operations of OCWA were carried out through the Water Resources Commission.
21. At the time of its creation, OCWA held title to many municipally-based facilities, though these ownership titles were transferred to municipalities in 1997. Until 1996, OCWA administered Ministry of Environment grants to water works throughout the province.
22. OCWA is now purely responsible for operating and maintaining facilities owned by municipal and other organizations. As of January 2000, the Ontario Clean Water Agency held 383 contracts with municipalities to operate and maintain water treatment plans, wastewater treatment plants, and water distribution systems.

MEMORANDUM OF UNDERSTANDING

23. OCWA was created as a Schedule IV agency in 1993 and has recently been reclassified as an Operational Enterprise under the most recent Management Board Agency Establishment and Accountability Directive. This Directive requires the establishment of a Memorandum of Agreement (MOU) between the host Ministry, in this case the Ministry of the Environment, and the Agency. The Directive also sets out the issues between a Ministry and an Operational Enterprise such as OCWA that should and must be addressed by an MOU as well as guidelines on the relations that should be set out regarding these issues.
24. The Agency's MOU with the Ministry of Environment:
 - sets out the roles and responsibilities of OCWA and the MOE;
 - names the board of directors and officers of Agency;
 - sets out the financial and staff arrangements required of the Agency; and
 - established the reporting requirements of the Agency.

OCWA'S BOARD OF DIRECTORS

25. Currently, the MOU names various senior public service employees as the Board Members though there is no need, either in legislation or Management Board Directives, that the Board be drawn exclusively from the public service. As of March 1, 2000, the Board consisted of:
 - John Fleming, Deputy Minister, Ministry of Correctional Services;
 - Stein Lal, Deputy Minister, Ministry of the Environment;
 - Donald Obonsawin, Deputy Minister, Ministry of Tourism;
 - Tony Salerno, Vice-Chair and CEO, Ontario Financing Authority; and

· Ron Vrancart, Deputy Minister, Ministry of Natural Resources.²

26. The Board is responsible for setting the policies governing the operation of the Agency within the MOU and legislation.
27. The Board is completely controlled by direct employees of owners of the enterprise, the Government of Ontario, raising concerns that such tight control allows for issues unrelated to the proper management of water resources to be played out within OCWA.
28. For example, concerns have been raised by OCWA employees and others concerning the openness and transparency of the OCWA Board of Directors. OCWA has not issued a public annual report since 1999 despite legislative requirements.
29. There is also a lack of diversity among the Board of Directors which continues to be a concern of OPSEU members as expressed in research interviews. The Board contains great expertise in the area of public administration, but no particular expertise in areas specific to the management of a water enterprise such as water science, engineering, employee relations, training and certification or quality management.
30. Additionally, care should be taken to ensure that Senior Executives of the Agency come to their jobs with significant expertise within the field of water services and not due to other considerations.

RELATIONSHIP TO REGULATOR

31. It has been argued that the fact that the MOE is the regulator of safe drinking water and the overseer of OCWA creates a powerful conflict of interest among MOE enforcement officials. This argument concludes that due to these facts it is necessary to divest OCWA to the private sector. This conclusion, however, certainly does not follow from the facts.
32. The necessity for privatization would only follow from the assertion that the government cannot simultaneously regulate an industry and run operations in the same industry. If this assertion is upheld, then there can be no role for government in operating hospitals, schools, nursing homes, energy companies, court rooms, housing developments, colleges, universities, police forces, firefighting forces, ambulance response, casinos or liquor stores. Indeed, there can be virtually no room for operation of any enterprise by government.
33. Any requirement to separate the roles of regulator and operator is generally not argued from the basis of a theoretical conflict but, rather, because in the real world an improper action has been caused by an actual conflict of interest. Even in these cases, privatization has not been regarded as the necessary solution.

² Ontario Clean Water Agency, *1999 Annual Report*

34. There has never been any finding or any sustained concern that the Government of Ontario as either an operator or regulator of waterworks has ever taken improper action caused by a conflict of interest. There is simply no version of the conflict of interest argument that, in the case of a Crown water operator, leads inexorably to divestment.

HUB ADMINISTRATION

35. Facilities operated by the Ontario Clean Water Agency are organized under an efficient “hub” system that puts the Agency’s operators close to its clients while consolidating overhead and enhancing flexibility. This organizational structure is unique in Ontario and rare anywhere in North America and is one of the keys to OCWA’s expertise in the management of smaller municipal services.

TABLE 1 OCWA Hub Offices, 1997³			
Northern Area	Western Area	Central Area	Eastern Area
Algoma Moosonee Espanola Haileybury Longlac Fort Frances Victoria Harbour	Stratford Brantford Southampton Owen Sound Orangeville Lake Huron Elgin Amhurstburg	South Peel Hagersville Galt Nanticoke Waterloo Simcoe Kitchener New Tecumseth Lakeview Lakeview Biosolids Clarkson	Smith Falls/Pettawawa Delora Quinte Operations Chesterville Kingston Alfred

36. Certified operations and maintenance staff run each facility. Some facilities do not have full-time staff but are serviced by an operations crew on an itinerant basis. Larger facilities will have a full-time staff complement.
37. An Operations Manager and an Administrative Assistant develop and track the budgets of each facility and manage the staff and equipment assigned to the Hub. From time to time, facilities are redistributed to different Hubs and Hub offices come in and out of existence. There have usually been in the range of 30 Hub offices. Each Hub manages between six and a dozen facilities.
38. Hubs are administered from Area Offices, each of which is run by a Vice-President or General Manager. Currently there are three Areas – Eastern and Northern, Central and Western, and South Peel.
39. OCWA’s Head Office operations consist of Operational Standards and Optimization Section, Project Development, Legal Services, Information Services, and Finance and Corporate Services.

³ Privatization Review of the Ontario Clean Water Agency, 1998, p 15

40. The efficiency of the Hub system is derived from its ability to pool overhead and management costs across a number of facilities, allocate operation and maintenance staff with greater rationality and maintain close relationships between the local utility manager and the client municipality. The Hub system gives OCWA the scale of operations that allows for task specialization and focus on safe water concerns.
41. Most OCWA Hubs operate across a number of municipal boundaries. OCWA's operational and managerial staff are required to understand the different municipal contexts and the different requirements rising from various contracts and Certificate of Approvals.
42. It has been observed OCWA "delivers economy of scale benefits, including staffing flexibility, and facilitates information sharing that might otherwise not take place. Smaller municipalities in particular seem to have benefited from the flexibility available through OCWA's organizational design."⁴

OUTPOST5

43. The inherent efficiencies of a hub management system have been taken a step further through the development of proprietary software that remotely monitors and controls equipment. This software, called Outpost5, is a type of Supervised Control and Data Acquisition (SCADA) software specially developed by OCWA. OCWA is in the process of installing Outpost5 at all the facilities it manages.
44. Among other important functions, Outpost5 continuously monitors and records water chlorine and turbidity values. If values exceed OCWA tolerances, a smart box automatically shuts down the water pumps and sets off an alarm.
45. The Walkerton waterworks used a less complete SCADA program that did not monitor chlorine or turbidity values in the water. This has been an issue with the Inquiry since instrumentation on the chlorine tanks at Walkerton's well number 6 were broken and could not be relied upon to indicate when the tanks were empty. Outpost5 not only also monitors the fullness of the chlorine tanks but also automatically switches to the other tank when one is emptied. Walkerton well number 6 did not have second chlorine tanks as required by the MOE.
46. Outpost5 records data and can also display it in real time to a remote location. This functionality allows OCWA staff to monitor essential data from remote locations and forward critical reports to personnel within the Hub, or external to the Hub, such as the municipality, the Area Compliance Officer, OCWA head office, conservation authority or the regional Medical Officer of Health.
47. The development of Outpost5 puts OCWA in a strong position to implement recommendations from the Canadian Environmental Law Association (CELA) and others that there be far greater public disclosure of water quality data.

⁴ David Cameron, *The Relationship Between Different Ownership and Management Regimes and Drinking Water Safety*, page 96.

ISO 14001

48. The Ontario Clean Water Agency has developed its own Environmental Management System based on ISO principles.
49. In 1999, Ontario Clean Water Agency became the first water works management organization in North America to accredit a facility under the ISO 14001 environmental management system. This was first achieved at the South Peel waterworks and is now being applied across the organization.
50. ISO 14001 is a methodology for standardizing the inputs and processes required to achieve desired outputs affecting the environment. Through an ISO 14001 certification process, the requirements of inputs are assessed and tolerances are established. Similarly, processes are fully reviewed and mapped with action taken to remove points of access to the system that could negatively impact quality or to add reporting, quality checks and return loops that support positive outcomes.
51. "OCWA points out that ISO certification is a much simpler matter given that its EMS is based on the international standard. In the case of Peel, certification was obtained after three months where a year is more typical."⁵

OPERATIONAL STANDARDS AND OPTIMIZATION SECTION

52. OCWA's head office hosts an Operational Standards and Optimization Section for the purpose of identifying emerging issues and establishing Standard Operational Practices (SOPs) to ensure compliance with quality and safety regulation.
53. Staff within the Section consists of water scientists, chemists and other scientific staff.
54. New operational practices and requirements are developed by the Operational Standards and Optimization Section and sent throughout the organization as operation directives and operation manuals. These documents direct and inform the decisions of operators working in individual water and wastewater facilities. The Operational Standards and Optimization Section creates an OCWA-wide operating manual and manuals specific to each plant in order to support operation in compliance with the plant's Certificate of Approval.
55. While inspection results show OCWA above industry average with respect to quality, research interviews with OCWA operators confirm a theme of little interplay between those at head office writing quality directives and facility operators who are responsible for their implementation. Continuous improvement on safety and quality matters requires a dynamic interplay between experienced plant operators and head office scientists.

⁵ *Ibid*, page 98

QUALITY AND COMPLIANCE

56. Compliance with government regulation is achieved through the operationalization of quality and safety directives from the Operational Standards and Optimization Section with support from the Compliance Officers located in each Area office.
57. Compliance Officers act as a resource base to operations and maintenance staff in facilities and serve an inspection and compliance role through tours to facilities.
58. Although the reduction in government commitment to safe water through direct operation of facilities has declined in recent years, resulting in the lay-off of a number of certified operators, OCWA's hub administration, trained staff, technology, quality and compliance systems have allowed the organization to retain its status as a high quality provider of water treatment services.
59. In the aftermath of the Walkerton water deaths, the Ministry of the Environment initiated an inspection of all 645 water treatment plants in Ontario. The inspections were carried out between June and December 2000.

60. According to Ministry of the Environment press releases,⁶ a total of 271 plants were cited for a total of 383 plant and 38 reporting deficiencies, a total of 421 deficiencies.

61. As can be viewed in Table 2, there are 122 OCWA-operated water treatment facilities and 523 facilities operated by other agencies.

TABLE 2			
Deficient plants, OCWA vs. non-OCWA operations	Total	Deficient	Percent deficient
OCWA-operated water plants	122	41	33.6%
Non-OCWA plants	523	227	43.4%

62. While 43% non-OCWA facilities were found to be deficient by the Ministry of the Environment sweep, the rate of deficiency among OCWA plants was 34%.⁷
63. At the time of this snapshot, then, non-OCWA-operated plants were 29.2% more likely to be deficient than a plant operated by OCWA.
64. Table 3 views the same data set differently. In Table 3, the distribution of individual deficiencies (ie: not deficient plants) among OCWA and non-OCWA plants is presented. This measure also confirms that OCWA operations are of a higher quality standard than non-OCWA plants. While OCWA runs 18.9% of the total number of water treatment plants there were only 14.5%

⁶ Ontario Ministry of the Environment press releases, July 28, Aug 15, Sep 1, Sep 21, Oct 3, Oct 27, Nov 17, Nov 27 and Dec 21, 2000

⁷ Ontario Clean Water Agency files

deficiencies at OCWA-run facilities. Conversely, non-OCWA operators account for 81.1% of the plants but 85.5% of the deficiencies.

65. In order to make comparison easier, a calculation can be made to determine the number of deficiencies per one hundred plants. From a base of 100 OCWA plants there would be 50.0 deficiencies. On a base of 100 non-OCWA plants, there would be 68.8 deficiencies. Again, by this measure, the risk of deficiency across non-OCWA operations is 37.6% higher than across OCWA-run operations.

TABLE 3					
Deficiencies, by type, OCWA vs. non-OCWA facilities	All water treatment plants (645)	OCWA plants (122)	OCWA % (18.9% of operations)	Non-OCWA plants (523)	Non-OCWA % (81.1% of operations)
Insufficient number of samples analysed	203	34	16.7	169	83.3
Inadequate maintenance of disinfecting equipment	74	11	14.9	63	85.1
Inadequate water treatment	50	8	16.0	42	84.0
Inappropriate certification or inadequate training	56	7	12.5	49	87.5
Failure to register accredited laboratory	2	0	0	2	100.0
Failure to submit a quarterly report	35	1	2.9	34	97.8
Failure to submit an action plan	1	0	0	1	100.0
Total deficiencies	421	61	14.5%	360	85.5%

66. This better-than-industry performance is all the more significant since the portfolio of OCWA water treatment facilities is heavily weighted toward smaller operations, which have hosted some of the most persistent and frequent problems.

PROJECT DEVELOPMENT

67. OCWA's Project Development Group provides comprehensive project assessment and planning for municipalities or industries building new facilities. The group consists of eleven engineers and six other employees who provide facilities assessments, engineering studies, project management, operations technical support and design-build solutions.
68. Once a facility is built, OCWA completes a comprehensive infrastructure assessment and develops a value-based asset protection program that schedules maintenance programs based on preventive maintenance philosophy.
69. For OCWA clients, the Agency's approach ensures that their investment is continuously protected and results in better plant performance and longer equipment life. Comprehensive maintenance data also allows clients to see how their assets are being safeguarded. OCWA will also advise clients on the costs of equipment replacement and can build such costs into the OCWA contract.
70. OCWA's Project Development Group has completed a number of recent successes.

71. In Wasaga Beach OCWA's Project Development Group planned and provided management and co-ordination for the 4-year, \$32 million construction project. The Group oversaw and co-ordinated all engineers and contractors in the upgrade of the water pollution control plant and sewage pumping stations, construction of a new outfall, and new sewage pumping stations, building of the largest elevated composite tank in North America and construction of watermains and sewers.
72. In Pettawawa, OCWA's Project Development Group was responsible for a recent expansion and upgrade of the town's sewage treatment plant. The increased capacity will allow Petawawa to continue to grow and to produce a higher quality effluent than in the past.
73. OCWA and the City of London recently worked together to help ensure the success of the \$30 million project, completed on time and on budget, to twin three weak sections of the pipeline and significantly improve the security of its water supply.

EMPLOYEE TRAINING AND DEVELOPMENT

74. Due to its scale of operations, the Ontario Clean Water Agency has been able to develop a skills training program far superiour to what is commonly offered by water treatment operators. OCWA has a complete set of courses to prepare operational employees for certification at all levels, use proprietary software such as Outpost5 and comply with health and safety requirements.
75. OCWA's courses are based on MOE training curriculum and are delivered by certified operators who have completed OCWA's facilitation training course. Course are delivered throughout the province.

FINANCIAL STATUS AND OPERATIONAL EFFICIENCY

76. An Office of Privatization report reviewed OCWA's financial status and operational efficiency. Though OCWA has turned a profit since 1996, the organization has achieved this feat on falling revenues and dramatically cut costs.

77. The report completed an analysis of operating margins indicated that

TABLE 4					
Operations and Maintenance Revenue	1994	1995	1996	1997	1998
Total Revenue	120.9	121.9	111.1	108.4	101.8
Total Expense	126.0	129.2	108.2	104.1	98.8
Net Income	-5.1	-7.3	2.9	4.3	3.0

"the net margin for some of the hubs, including almost all of the larger hubs, is very small (four hubs have negative margins)."⁸

78. An analysis of operating efficiency was undertaken by the report's authors. A calculation of costs at the South Peel facilities was measured at \$580,000/mgd per year. The benchmark rate for water and sewage treatment plans of Peel's size is \$750,000 to \$870,000/mgd/yr. The report for

⁸ Privatization Review of the Ontario Clean Water Agency, 1998, p 24

the Office of Privatization concluded that “in comparison to the US benchmark numbers, OCWA appears to be operating the South Peel Systems highly efficiently.”⁹

OBSERVATIONS

79. The Ontario Clean Water Agency has certain natural strengths including:
- The ability to spread management and overhead costs across municipal boundaries (access to economies of scale);
 - Public accountability; and
 - Experienced and skilled employees.
80. OPSEU is concerned that these natural strengths are being underutilized for the establishment of an overall safe water regime. Fortunately, despite the less than optimal use of these natural strengths, OCWA continues to be a safer-than-industry-average performer.
81. Scale has been perhaps the most important strength of OCWA. The efficiencies created by scale in water management have been reaped through mechanisms such as Hub Administration and Outpost5. Economies of scale are further enhanced when there is a close proximity among the facilities administered by a single Hub. This natural strength is eroded insofar as marketplace competition creates service fragmentation. Given the tight margins currently experienced by OCWA, further erosion in the proximity of OCWA's client base could quickly turn current operating surpluses to losses. This is an intense concern.
82. OCWA's position as a public agency with full public accountability should help OCWA position itself as a responsive and trusted water service organization. To this end, a renewed MOU and a new Board are needed to open the relationship to the government and create transparency to the public. Additionally, OCWA's Outpost5 system should be taken the few extra steps required to create a transparent water quality reporting mechanism.
83. Experienced operators need to be more fully incorporated into the quality cycle. In particular, Standard Operating Practices should be created based on an interplay between operator experience and scientific knowledge.

⁹ *Ibid*, p 15

PART II: STRATEGIC INTERESTS OF THE CROWN

PROVIDING EMERGENCY REMEDIATION

84. In situations in which the control of a facility or system needs to be transferred to a new organization due to an emergency, the Walkerton tragedy and a study of alternative remediation force models shows that the public interest is best served by an on-going provincial organization with experience in waterworks operations.

LIABILITY ISSUES

85. At the time of the Walkerton crisis, many municipalities offered assistance. In particular, the Regional Municipality of Waterloo offered to assume control and remediate Walkerton's waterworks. However, the Regional Municipality was not willing to assume legal liability for the actions of Waterloo's water works employees and asked the government of Ontario to assume this liability. The government of Ontario was unwilling to assume liability since they could not be in direct control of the employees whose action might give rise to a liability lawsuit.
86. Clearly it would not be appropriate for the citizens of one municipality to face a financial penalty for actions occurring while its employees are working on behalf of the citizens of another municipality. Nor can the government of Ontario be blamed for rejecting the assumption of liability for a group of employees with which it was unfamiliar and over whom it had no direct supervisory role.

INTER-MUNICIPAL MUTUAL AID PLANS

87. Inter-municipal mutual aid agreements are commonly in practice in smaller municipalities for emergency services (fire, ambulance and police). Under these plans, municipalities, through contracts with each other, pledge to resource emergencies in neighbouring municipalities. These seconded resources come under the command of the force directly responsible for managing the emergency, thereby avoiding the liability issue. The suggestion has been made that analogous relationships could be created for emergency drinking water remediation that would remove the need for a provincial remediation force.
88. In the case of emergency services, mutual aid agreements are not sufficient. Emergencies services are ultimately backed up by various operations of the Crown such as the Ontario Provincial Police, the Chief Fire Marshall's Office and the Chief Medical Officer of Health. Thus, the implementation of mutual aid agreements for drinking water remediation without the ultimate backstop of a Province of Ontario agency would not be analogous to the situation in emergency services.
89. That the situation is not analogous does not in itself rule out the possibility that a mutual aid agreement could provide sufficient resources. However, when one considers the scale of the Walkerton remediation requirements, it is clear that had the municipality developed agreements

with only the most immediately neighbouring municipalities, there would have been insufficient expertise and resources to fulfil the remediation requirement.

90. The closest municipality with the ability to resource the remediation while maintaining its own operations was in the Regional Municipality of Waterloo, five counties away. Thus for the inter-municipal mutual aid concept to work, we can see that the aid agreements would have to have a large scope indeed. Agreements covering municipalities in eastern and northern Ontario would be vast.
91. There would also be certain operational inadequacies of an organization drawn together only for the brief purpose of an emergency remediation. An inter-municipal emergency force would not be able to base itself upon Standard Operating Procedures¹⁰ or on-going personal relationships. Additionally, as a temporary organization, informal lines of command which hold over from the normal working relationships might challenge the official command structure – perhaps to the point of undermining the security of the liability issue.

REMEDIAL RESERVE AGENCIES

92. Another possible model for a remedial force could be a provincial office with the ability to commandeer expertise from various municipal waterworks operations in emergency situations.

TABLE 4			
Remediation models	Liability resolved?	Sufficient resources?	Effective control of force?
Mutual aid agreement	Yes	No	No
Reserve Agency	Yes	Yes	No
On-going Agency	Yes	Yes	Yes

93. Such an arrangement would clearly put aside the liability issue by placing it on the government of Ontario. The model also allows for the combining and directing of sufficient resources even while continuing the operation of the facilities from where the staff was drawn.
94. However, while a reserve agency would resolve the liability and adequate staffing requirements, like the inter-municipal mutual aid agreements, a reserve agency cannot rely upon common operational practices, on-going personal relationships and clear and established lines of command.

¹⁰ The benefits of SOPs were indicated in Inquiry testimony by Mark Ethier (Senior Operations Manager for OCWA and the leader of OCWA's remediation team in Walkerton). Mr. Ethier commented discussed the wholesale review of the Walkerton system: "Now, we did this ...[implementation of a new monitoring regime] not looking at the procedures that were in place. We come into a system and we take it over regardless of what was done before. We have our own operating practices. So when we come in and change things, it's not a judgment on what past practices were. It's just that we have our own practices that we utilize and we set everything up that way." (Inquiry testimony, November 17, 2000)

ON-GOING AGENCIES

95. The optimal structure for creating a safe water remediation force is an on-going provincial agency with a internally consistent and predictable culture, Standard Operational Practices, and no contradiction between formal and informal lines of command. An on-going agency fully resolves liability issues and can command adequate human resources and expertise even while maintaining day-to-day operations.

OPERATIONAL EXPERTISE FOR POLICY-MAKERS AND REGULATORS

96. The Ministry of Environment is responsible for the development and enforcement of safe drinking water regulations. In its particular role as a developer of regulatory standards, the MOE's scientific staff undertakes various activities.
97. MOE scientists are responsible for validating procedures for water testing. Where an alternate testing procedure is identified, MOE scientists must ensure it is at least as reliable as current practice before regulating its use. Conversely, the staff must also be searching and testing new procedures that increase the accuracy and reliability of tests. In this context exists the challenge of ensuring that new threats to water safety are identified and appropriate tests are developed and then required by regulation.
98. MOE scientists also need to set acceptable standards for the maximum allowable concentrations of water impurities or inclusions. The limits of acceptability change with new information or as new threats arise or combine.
99. The work of MOE scientists in maintaining a regulatory regime that promotes both safety and efficiency requires a workplace committed and capable of discovery and innovation. Without the proper access to facilities and knowledge, MOE drinking water regulation could quite quickly become antiquated, unsafe and inefficient.¹¹
100. In order to create this effective innovative regulatory culture it is crucial that MOE scientists not be isolated from operational knowledge, data sources and testing facilities.

ACCESS TO FACILITIES AND EXPERTISE

101. In order to fully resource its scientists, the MOE needs co-operative access to a diversity of waterworks facilities and knowledge on an on-going basis. Working through a single, public agency with operations in a cross-section of conditions is preferable to negotiating access to an appropriate number of municipally run or private facilities or systems.

¹¹ The need for a stronger interplay between regulation policy-makers and facilities operators due to technology change is already evident. Equipment within the Toronto Water Works, for example, is designed to be safe and effective while producing no residual chlorine. This operating practice continues despite MOE regulations that require residual chlorine.

102. In the case of new testing procedures for previously identified risks to water safety, MOE scientists need to access waterworks facilities through which they can compare testing procedures against existing methodologies in a variety of contexts and over time.

103. Tests of new materials or equipment require MOE scientists to access facilities operating with new technologies in order to perform quantitative testing and the input of facility employees. Other features, such as piping dead ends and pipe encrustation, which are not currently the subject of regulation, would require similar study and testing in operating facilities.

TABLE 5		
MOE science interests	Co-operative access	Access to diversity
Municipal (public)	Med	Low
Municipal (private)	Low	Low
Crown	High	High

104. Facility and system operators will also have valuable information regarding certain maintenance procedure that the MOE might wish to institute as a regulatory requirement. The use of swabs, for example, was strongly advocated by OCWA staff upon arrival at the Walkerton site, yet is not a step required by regulation in either the emergency or routine maintenance of distribution systems. Ministry staff considering the extension of minimum regulatory standards for swabbing would need access to the qualitative information of operators and site access to measure the outcomes of swabbing.
105. Given the various models of water operations, it is possible to set a value of the various operators to MOE scientists. The prime consideration of MOE scientists is to ensure co-operative access to a diversity of facilities.
106. Any municipally-based enterprise (operating at most a few plants under similar conditions), whether privately or publicly run, will not ensure the access to diversity.
107. Co-operation could be evidenced in several ways and needs to be distinguished from legal requirements. Legislative mandates and conditions of permit could legally require organizations to host MOE scientists, but such mechanisms would not be able to cover all situations that might arise. Active co-operation requires a culture of voluntary mutual support, a sense of common values and goals. This culture has existed for many years in the Crown and its agencies, to a lesser extent with the municipalities and only to a small extent with private operators.

ACCESS TO DATA

108. In several situations MOE scientists need access to a statistically relevant base of information that can only be provided by a large public utility operating in diverse conditions.
109. The objective of water safety regulation is to minimize or eliminate consumer risks associated with waterworks plants and distribution systems. MOE scientists play an investigative role in understanding these risks and determining the correct course of action in order to serve the public interest.

110. In some cases, scientists recognize a theoretical risk and then seek information to determine whether, in actuality, a risk exists and whether any procedure can reduce or eliminate the risk. As an example, we can suggest there is a theoretical possibility that Ontario will be hit by a moon-sized asteroid. However, the fact that this has not ever happened and that there is probably nothing that can be done about it makes planning for such a situation foolish. It is not a "real world" threat. MOE scientists need access to a sizeable base of statistical information to make distinctions between "theoretical" and "real world" threats.
111. In other situations, scientists will become aware of a real world threat due to a specific incident. In such situations, MOE scientists will want to determine the frequency of the incident and, if found to be frequent, will want to complete a failure analysis to determine its contributing causes.
112. In both cases, scientists need access to information on a scope that can only be provided by province-wide public water organization. This is true for several reasons. First, only a larger organization with a large base of operations and consistent approach to incident reporting can to help scientists understand the risk of failure. Second, an organization with diverse operations – different water quality contexts and conditions – is required to ensure that scientists can explore the contributing causes of a risk. Finally, it is extremely unlikely that a private, competitive company would want to give access to internal failure reports.

PROVIDING OF A SPECTRUM OF INFORMATION AND SUPPORT TO MUNICIPALITIES

113. In Ontario, municipal governments have been given responsibility for operating drinking water systems while the government of Ontario develops regulatory standards, abates, enforces and provides a Crown water operator for those municipalities which choose not to run their own services.
114. The large majority of municipalities, even those in smaller municipalities where quality concerns are a recurrent issue, continue to run their own services.

BARRIER-FREE ACCESS TO INFORMATION AND SUPPORT

115. For those municipalities that do choose to operate their own facilities, Ontario has a strong interest in ensuring that there are minimal barriers that municipalities must overcome in order to access high quality advice regarding the operation of these water utilities.
116. At one time there was a 20-person unit within the Ministry of Environment responsible for assisting municipal water works with their concerns and inquires.¹² Municipality utilities that want

¹² The Drinking Water Section of the Water Resources Branch provided support to water industry operations, both run by MOE and municipalities, prior to Ministry reorganization in 1993. The reorganization, which was unrelated to the creation of the Ontario Clean Water Agency that same year, put former members of the Section throughout the Ministry in groupings too small to allow for continued unit management. Staff with the Drinking Water Section consisted of persons familiar with plant operations, technology adaptation and regulation. Former

to take a responsible and pre-emptive role in solving concerns need access to information and support.

117. Such supports include access to best practices advice, interpretation of test results and remedial advice. Currently, individual consultants have filled some gaps with mixed success from the point of view of the municipalities. But the requirement to find the appropriate consultant and the possibility that the consultant may defer from advising due to liability issues makes the current environment below optimal from the point of view of ensuring a safe water supply. The creation of a definitive centre of excellence for the support of municipal utilities would be preferable.

LOCATION OF THE INFORMATION AND ADVICE CENTRE

118. A centre of excellence capable of providing the spectrum of information and support to municipal utilities would need to have several assets.

119. First, the organization would have to have skill and knowledge levels that truly exhibit excellence. Second, the organization would have to have operations dispersed across the Provinces, close to the client base. Finally, liability issues that arise from dispensing safety advice to municipal operators would have to be resolved.

TABLE 6			
Centre of excellence positioning	Expertise	Proximity to client base	Liability resolved?
Municipally-run operator	Yes	No	No
Privately-run operator	No	No	No
Provincially-run operator	Yes	Yes	Yes

120. A Crown water agency is uniquely able to meet these criteria. Currently, the Ontario Clean Water Agency has the expertise and cross-province coverage to become a centre of excellence for municipal operators. Given the more than 30 hub offices located in every region of the province, OCWA could fulfil requests for on-site analysis or advice within a day. OCWA alone is positioned to assume the role of centre of excellence and provider of consulting service to municipalities.
121. However, OCWA's current mandate to act purely as a competitor in the marketplace has ruled out the possibility of providing service to non-client municipalities.

A NEW MUNICIPAL SERVICE MODEL

122. A new OCWA with a mandate to provide support and information to all municipalities while operating facilities for only contracting municipalities could be achieved.
123. There are two strong reasons why a newly mandated OCWA should not simply charge a consulting fee to municipalities that engage the service of the centre of excellence. First and

staff of the Section report having a mutually beneficial relationship with the operators of MOE facilities, which were at that time directed through the Water Resources Branch. Section staff were separate from Enforcement Officers.

most obviously, the payment of the fee is, in itself, a barrier. However, a second and stronger public interest is that the existence of a fee for service would only undo the fragmentation of the delivery of such expertise (among OCWA and other private consultants) to the extent that OCWA became seen as the obvious choice for municipalities.

124. If a truly barrier-free service was developed within OCWA, a critical mass of municipal demand would no doubt be driven to OCWA's municipal consulting group, increasing the delivery efficiency of this service and supporting the base of expertise within OCWA, driving a move towards the status of a centre of excellence.

A NEW PARTNERSHIP FOR EXCELLENCE

125. A new service to municipalities could be enhanced through the establishment of a new partnership with the Ontario Water Works Association (OWWA). The OWWA has a long tradition of promoting best practices and linking to the engineering and operator communities globally. A new OWWA-OCWA partnership could ensure the continuous development and refining of standards of excellence.
126. To some extent, OWWA and its US cousin the American Water Works Association (AWWA), already figure strongly in the development of OCWA best practices. Testimony at the Walkerton Inquiry Part I revealed how OCWA staff used OWWA and AWWA standard practices in the remediation effort. These practices included swabbing, looping dead ends and evaluating pipe encrustation. None of these practices were requirements of the MOE but were known to OCWA staff through OWWA and AWWA conferences and manuals. A more established partnership to support small municipal waterworks could ensure that this type of knowledge is widely accessible.

DELIVERING TRAINING THROUGHOUT THE SECTOR

127. The Inquiry has received significant testimony regarding the collapse of a standardized training system in support of water treatment plant operators. The Crown has a significant interest in rectifying this situation.
128. Training and certification are not – and should not be – the same thing. Training to a test does not achieve the over-all desired learning outcomes.

THE COLLAPSE OF THE STANDARD CURRICULUM

129. The Commission has heard how the availability of trade journals and a plant tour with an MOE abatement officer were registered in training logs by the Walkerton PUC as part of the legal requirement for 40 hours per year training requirement as set out by Ontario Regulation 435.¹³
130. Testimony has also been given regarding the fate of training curriculum originally developed by the MOE and delivered at the Brampton training centre. In the course of the 1990s, the MOE has

¹³ Walkerton Inquiry, *Transcripts*, June 7, p 95

lost control over curriculum standardization and learning outcomes through a series of divestments of control. This standardization needs to be reset in order to eliminate the avoidance of training as was witnessed in Walkerton. With a standardized training regime, abatement officers can read training logs and be sure that the courses taken do, in fact, constitute quality learning experiences in the spirit of Regulation 435.

131. The Water Resources Commission began curriculum development in 1959. These course materials came into the MOE and were taught at the Brampton training centre. In 1990 a partnership was established with the Association of Community Colleges of Ontario to enable course delivery in additional locations more convenient to operators. The administration of this program was done by the Ontario Environmental Training Consortium, an organization funded by MOE. MOE continued to run training courses from the Brampton training centre.
132. In 1990 the MOE increased fees for non-MOE clients from \$60 to \$500, sparking a significant growth in trainers began entering market and offering their own proprietary training. The growth in training providers creates the potential for sub-standard learning opportunities and curriculae to be sold to municipalities seeking to satisfy regulatory requirements.
133. In 1995, the standard curriculae were transferred to OCWA. MOE's position was that OCWA would now make the courses available publicly since "OCWA would be in a better position in the long term to maintain courses and update courses based on their operational experience which the Ministry would no longer have."¹⁴
134. However, in 1999, OCWA ceased public course offerings since it was not possible to recoup the deliver costs. It can be assumed that the government implicitly supported this decision as there has been no policy reversal emanating from the Board of Directors.
135. Shortly after this, the curriculae was made publicly available. Waterworks operations have been forced to provide for their own training, based on the OCWA materials as much as is seen fit by the trainer. There is no driving force in the control of content or outcomes.

OCWA'S TRAINING CAPACITY

136. OCWA currently delivers the former MOE courses throughout the Province. In 2001, OCWA is offering operator training courses in 15 locations (Sault Ste. Marie, Lake Huron, Elmira, Chesterville, Haileybury, Stratford, Elgin, Sudbury, Toronto, Union, London, North Bay, Kingston, Orangeville and Timmins).¹⁵
137. In 2000, OCWA launched the Trainers for Excellence (TEN) program through which 30 certified operators deliver OCWA's courses to OCWA employees. Through TEN, certified operators "undergo a comprehensive facilitation skills training program and are continuously supported by the corporate Training and Development team."¹⁶

¹⁴ Walkerton Inquiry, *ibid*, p 136

¹⁵ Ontario Clean Water Agency, 2001 *Course Catalogue*, p. 5

¹⁶ *Ibid*, p. 1

138. OCWA is ideally positioned to be the vehicle to reintroduce a standard approach to operator training and the Agency should be required to take this role with full cost recovery either through fees, contributions from the Consolidated Revenue Fund, or a mix of both.

DIRECT INTERVENTION TO MAINTAIN SAFETY

139. Because of the existence of a provincial Crown operational agency, the government of Ontario possesses the ability to intervene directly in order to maintain safe water works operations. This ability gives the Province the power to secure water quality in three ways, which will now be discussed.

DIRECTLY UPGRADING WATER QUALITY

140. First, the existence of OCWA or a similar provincial Crown operator makes it possible for the Government of Ontario to take direct control of a waterworks in order to maintain water quality. In a situation in which an operator cannot rectify a continuing critical situation, the Government of Ontario, through OCWA, can ensure that appropriate support and resources are available to bring a plant back into compliance.

BACK UP OPERATOR

141. Second, a provincial Crown operator makes real the threat of a municipality to terminate a contract and protects a municipality in case a private supplier abandons a contract. For a smaller municipality the existence of a Crown water authority provides an assurance of an alternative provider.
142. In many smaller areas, no organization other than a government-backed operator would take on a service contract at cost-recovery rates. Relatedly, the Government of Ontario, through its Memorandum of Understanding with OCWA, can ensure that there is no price gouging in a situation in which there is no competitor for an operations contract.

FORCING OUT UNSAFE OPERATORS

143. Third, the existence of a provincial Crown enterprise gives the Government of Ontario the ability to remove and replace a waterworks operator that is failing to meet quality and safety requirements.
144. While forcing the removal of an operator – particularly if the removal is not supported by the municipality – is draconian, the judicious use of such an action would send a clear signal to utilities, municipalities and the public that organizations that exhibit habitually poor behaviours or unrepentant attitudes to drinking water quality will not be tolerated by the Ministry of the Environment. This is, unfortunately, a power that needs to exist to secure the safety of Ontario water.

FINANCING WATERWORKS INFRASTRUCTURE

145. A central concept behind the creation of OCWA was the ability to help finance municipal capital projects. Indeed, shortly after its creation, OCWA consolidated its municipal loan portfolio, generating significant interest cost savings.
146. A study by the Canadian Water and Wastewater Association in 1998 indicated that \$1.9 billion was required to upgrade water system infrastructure in Ontario to meet existing needs.¹⁷ While still a significant number, a recent study indicates municipalities providing water services have a debt borrowing capacity of between \$13 and \$19 billion.¹⁸ Thus the infrastructure requirements are well within the ability of municipalities under current public borrowing limits.¹⁹

REVOLVING PUBLIC CAPITAL FUNDS

147. In the United States, the federal government has created capital pools under the management of state authorities that serve as a revolving loan fund for waterworks utilities. The Ontario Water Works Association (OWWA) has supported the creation of a similar fund by the Canadian federal government to support municipal water utilities.
148. Under the US system, local water utilities receive loans from the fund to upgrade infrastructure. Capital and interest payments to the fund are re-lent to other municipalities. The US federal government records the asset value of the funds on its public accounts and the municipalities publicly record their loan liabilities.

LEASE-BACK FINANCING

149. Many private investment organizations have strongly advocated their own involvement in financing infrastructure upgrading. Although there is inconsistent use of the term "Private Public Partnerships," the term is commonly applied to arrangements in which a private investor raises the capital, pays the developer, owns the asset and leases it back to a public body.
150. In what is probably the largest lease-back to date in Canada, in mid-1999 Borealis Infrastructure Trust raised \$162 million from the issue of a 20-year 6.35% bond to buy 16 newly constructed or renovated Nova Scotia schools from developers. The Government of Nova Scotia entered into a lease-back agreement with Borealis giving the Province control of the schools. Nova Scotia paid lease costs to Borealis which were used to pay bond holder and to allocate a fixed amount to the school boards for maintenance.
151. Two critical issues have arose from the lease-back arrangements. First, the authority of the school boards was been diminished as the lease-back contracts required boards to account to

¹⁷ "Municipal Water and Wastewater Infrastructure Needs: Estimated Investment Needs, 1997 to 2012," Canadian Water and Wastewater Association, 1998.

¹⁸ "Financial Management of Municipal Water Systems in Ontario," C.N. Watson & Associates, 2001.

¹⁹ As amended by 75/97, regulation 799/94 under the *Municipal Act* caps the amount a municipality may expend on debt servicing at 25% of the municipality's own revenues.

Borealis on the amounts spent from the maintenance funds for operation and maintenance of the properties. Second, since the schools were not owned by the School Board or Province, public accounts did not record the assets and liabilities.

PRIVATE EQUITY FINANCING

152. While it is possible to envision private equity being invested into public infrastructure projects in countries with poor credit ratings, equity investment, with its attendant higher return on investment requirements, makes little sense for public infrastructure in Ontario.
153. The private water regime created in Britain in 1988 exemplifies this general rule. In the UK, regional water monopolies, capitalized by shareholder equity, were given ownership of all assets and responsibility for maintaining them. These companies billed the water consumer directly. A new economic regulator was created to oversee the monopolies. The consent of the regulator was required for any water rate increase. An analogous Canadian relationship used to exist between regulators and private phone companies and is currently enjoyed by cable TV operators.
154. Some advocates of this model imply that since such capital investments would be made from the proceeds of stock offerings there would be no impact on either the public purse or the consumer. However, the investing companies' requirement to increase share prices necessitates an increase in earnings assuming stable or increasing costs. A recent report for the Canadian Council for Public-Private Partnerships confirms this, stating that "of course, capital costs are eventually borne by end users and government through a combination of direct user fees and subsidies."²⁰
155. Indeed in Britain, water prices doubled between 1989 and 1993²¹ even while the number of people whose water was cut off because of non-payment increased from 480 in 1989 to 21, 282 in 1993.²²
156. The British regulatory agency, which grants water rates increases on the basis of the company's projected capital investment plan, discovered that capital amounts were routinely being overestimated and the difference was being retained by the companies. Indeed, in a private non-competitive environment, economic regulators, because of their inability to act or operate in the industry, become captive agencies that guarantee recession-proof profitability.

MUNICIPAL CAPITAL FUNDS

157. As with all other means of corraling private capital, investors who buy municipal bonds need to be repaid with interest from the money raised through customer billings. The only difference between private and public means of raising capital is with respect to the accounting and the cost of the debt incurred.

²⁰ Canadian Council for Public Private Partnerships, *Benefits of Water Service Public-Private Partnerships*, p. 13

²¹ Daily Mirror, July 29, 1994. "What a Shower"

²² Sunday Mirror, May 9, 1993. "Water Scandal"

- 158. Municipal debentures offer a more accountable means of recording financed public infrastructure. Liabilities and assets are clearly identified in public accounts. There are no long-term leases or service arrangements that might constrict decision-making. The assets remain in public control.
- 159. However, a weakness of the current municipal debenturing system – and one that the US Federal government and the architects of the *Capital Investment Plan Act, 1993* sought to address – was the need for improved rates of interest applied to municipal borrowings and easier access to bond markets.

ONTARIO INFRASTRUCTURE FINANCE POOLING

- 160. By returning to the mandate of OCWA to assist in the financing of capital the weakness of the municipal financing model can be addressed without losing accountability, asset control or creating private monopolies.
- 161. In order to create an infrastructure pool, OCWA could partner with the Ontario Financing Authority, which would provide the expertise and financial networks to sell an agreed upon value of OCWA bonds which would be lent to municipalities at the best market rate available. Alternatively, the fund could seek equity investors such as major pension funds seeking stable bond-like returns. Municipalities would still be able to independently finance projects through public bonds or private funds, but adding a municipal finance pool would add a further choice for municipalities.
- 162. For clarity, it would be crucial to set, through the OCWA MOU, a specific target for the value of OCWA's capital pool to ensure that the situation played out at Ontario Hydro in the 1980s can never be repeated.

ACCOUNTABLE ADMINISTRATION OF INFRASTRUCTURE SUBSIDIES

- 163. Many stakeholders to the Walkerton Inquiry have argued for the appropriateness of “full cost pricing” for water. OPSEU understands and endorses certain principles supporting full cost pricing, but also regards capital subsidies as an inescapable reality in some cases due to a conflict with principles of public equality.
- 164. The efficiency of water services is closely tied to population density. As a result, full cost pricing in major urban centres results in a far lower per unit or per capita charge than in medium or smaller sized areas. And while it is certainly possible to argue that lower housing and other costs might more than offset the increased cost of water between major and lesser metropolitan areas, the extreme delivery cost in smaller rural and remote locations, in our opinion, makes equity the overriding principle in these cases.
- 165. In a situation in which subsidy is part of the system financing, such grants can be administered in various ways. In searching for the optimal solution, we place accountability and economic efficiency as the highest criteria for valuation.

MUNICIPAL GRANTING

166. Granting regimes based on payments to small municipalities has been a feature of Ontario's provincial-municipal relations for many years. This approach has been recently renewed through the creation of the Ontario Small Town and Rural (OSTAR) development fund, sponsored by the SuperBuild Fund. In this system, certain municipalities may apply to SuperBuild for financial support matching the amount a municipality is directing toward capital upgrading project. OSTAR is not specific to waterworks capital.
167. The objective of any granting regime is to ensure that critical programs are undertaken that otherwise would not be completed. An OSTAR-style granting regime does not attain this objective, since municipalities that may have already allocated funds or which are capable of allocating funds for such projects may apply for funding. In these situations, an OSTAR-type granting program can be used by municipalities to create a pool of money that can be diverted to a purpose other than for which the grant was made.
168. A related problem concerns the perverse incentives caused by some forms of grants, such as municipal grants. Municipalities may not allocate funds for capital investment because of the belief that ultimately the Province will pay for these costs. There is, under such systems, an incentive to not allocate funds into a reserve fund for reinvestment.
169. Because of the ability of an OSTAR-style regime to generate perverse incentive and diverted funds, this cannot be considered an efficient or accountable regime.
170. It also cannot be considered an efficient granting regime for a second reason: municipal grants do not create any incentive to pool the costs of overhead, management or supplies across multiple water facilities and systems. They perpetuate the current fragmented water management system with small scale operations insufficiently able to focus on the task of safe water provision.

PAYMENT OF SUBSIDIES TO LOCAL OPERATORS

171. Grants could also be paid to local operators of water works services. There are, however, three major drawbacks of this system.
172. First there is the general concern raised anytime public monies are directed to private companies (as are some of the waterworks managers). Second, the regime does preclude the host municipality from using grant money to free up other funds or follow the perverse incentive to underdevelop reserve or capital funds. Third, it does not defragment the system or encourage any economies of scale to develop.

DELIVERY OF SUBSIDIES BY OCWA'S PROJECT MANAGEMENT GROUP

173. In a subsidy-based regime, efficiency and quality are best promoted through the delivery of subsidy through an expert body directly accountable to the granting agency. In the case of

capital grants from the MOE for waterworks, OCWA holds this position. There are two reasons for preferring delivery capital subsidy through OCWA.

174. First, OCWA has the expertise and accountability to ensure proper allocation of MOE grants. Part of the key role played by OCWA in design-build projects is the ability to assess capital requirements. This ability is based on the near-fifty year experience of the organization and the 11 on-staff engineers. SuperBuild Corporation has contracted consulting engineers to inventory and assess the condition of municipal waterworks. OCWA was not considered as a potential bidder to this process despite OCWA's expertise and the cost reductions that might have been achieved by using an in-house capability rather than consultants.
175. Second, the Ontario Clean Water Agency has the expertise and accountability to ensure proper expenditure of MOE grants. Through its Project Development group, is an expert and independent manager of design and build projects. OCWA currently collects bids from qualified firms and, under the direction of the municipality, engages and directs firms in capital upgrade projects. OCWA's experience and expertise ensures municipalities that best value bids are accepted and that construction is completed on time and on budget.
176. Indeed, Commission research has noted that "in terms of the government's responsibilities, OCWA provides two necessary functions...[one being that] it has the expertise to advise municipalities on the design and construction of water and sewage facilities."²³
177. In the case of smaller municipalities receiving capital grants from MOE, there is no guarantee that the bidding and awarding process will be done from the same base of expertise and independence as is offered through OCWA. Certainly, no small municipality can match OCWA's waterworks project management expertise and would have to outsource the project management role in order to achieve OCWA's standard.
178. Given the risk of poor contracting practices and outcomes, the millions of dollars exposed to this risk and the social importance of quality design-build outcomes, public funds should be expended by an organization accountable to the government of Ontario. No other organization than OCWA can fulfil this role.
179. OCWA's abilities to assess and project manage capital funding requirements ensures value for taxpayer dollars. The use of OCWA's Project Development group for all capital upgrades supported by government of Ontario grants should be mandated.

OBSERVATIONS

180. The Province of Ontario is only taking advantage of a few of the strategic uses for a Crown water company.

²³ Nicholas D'Ombain, *Machinery of Government*, paragraph 465

181. OCWA's remediation ability was proven in Walkerton and the threat of driving out unsafe operators is always present through OCWA. However, OCWA's ability to encourage water regulation innovation in support of MOE scientists is not being developed. The considerable experience in the organization is not being used to support the many municipalities without the scale, skills or resources to operate a quality water management system. The financing strength that OCWA could bring to municipalities is being ignored. And, finally, grants are being run through third parties rather than delivered direct to the client base through OCWA, raising concerns about waste, misdirection and perverse incentive.
182. A post-Walkerton drinking water regime needs to take advantage of all the opportunities afforded by the existence of a Crown water agency such as OCWA.

PART III: ENVIRONMENTAL INTERESTS IN WATER MANAGEMENT

183. We have outlined seven roles for a Crown water agency, each of which serves a strategic interest of the Province. We have said that a provincial Crown operator:
- is the only organization that can take on a remediation on the scale required at Walkerton with liability issues resolved;
 - is essential to support MOE scientists in the appropriate innovation in quality and safety regulation;
 - could uniquely assist municipal operators through a centre of excellence partnership;
 - could immediately reset the curriculum standard and training access required;
 - is required in order to directly intervene to maintain safety and water quality;
 - could uniquely provide efficient and accountable access to capital; and
 - is the appropriate instrument for the administration of a subsidy-based regime.
184. In addition to the Crown's strategic reasons for possessing a Crown water agency, we believe that there are significant ecological and safety reasons why water should be publicly administered and that these reasons also contribute to a need for a Crown water operator.
185. We argue that there is a better alignment of interests between environmental protection and publicly-run water agencies. We also suggest that public control encourages an operational culture focused on quality and safety. Finally, we believe that the generation of scale is a crucial part of a safe water regime and that a Crown operator can successfully produce this scale in situations in which a municipality cannot.

ALIGNING PUBLIC AND OPERATIONAL INTERESTS

186. A reason for the preference of publicly administered water service over those provided by private companies is that there is a mis-alignment of interests between private water companies and our goal of the wise use of water.
187. Many crucial reasons for the need for public administration of water relate to the critical role water plays in the stability of ecosystems and the need for conservation and watershed management in order to maintain this stability. Our ecosystems rely on water not only to provide nourishment but also to serve as a medium for the movement of minerals, microorganisms, animals and plants that provide the balanced diversity of a healthy ecosystem. Our environmental interests are best served by making business arrangements for the provision of water services that are aligned with the interests of conservation and watershed management. For various reasons that we will explore, there is a fundamental mis-alignment between the interests of private water companies and ecosystem protection.

WATER CONSERVATION AND WATER MARKETING

188. Private businesses are in the business of selling their product. To be successful, private businesses seek and promote growing markets into which they can sell their products. This direction runs contrary to the interests of water conservation.
189. It may be argued that market expansion is not a necessary condition of profit growth. Indeed, one can imagine a company that produces a steady profit based despite a declining revenue stream. There are, however, strong reason why this is not a strategy normally pursued by real-world companies.²⁴ From time to time companies pursue such strategies as they attempt to realign the enterprise and shed non-profit-generating units. However, normal company strategy is to increase price-to-earnings ratios by boosting sales, which increases revenues and, hopefully, earnings per share.
190. Public water providers, on the other hand, provide a service and have no institutional interest in constantly seeking new markets in order to sell more product. Indeed, there is an opposite interest. Politicians operating a public water authority want to keep public debt and consumer costs low since the alternative is tax and user fee increases, neither of which is popular on election day. This interest would promote conservation in order to lessen expansion requirements.

WATERSHEDS AND TRADE

191. Watersheds are integrated systems of waterways that support specific ecosystems. Taking water from one watershed and returning it to another will damage our ecosystems. For this reason then, it is our interest to minimize transfers of water across watershed divides. On this issue, as with the issue of water conservation, there is a mis-alignment of interests with private water companies.
192. Private companies seek to sell their products into markets in which the best return can be made. In the case of water, this interest in the free movement of commodities conflicts with our interest in minimizing watershed transfers.
193. Private water companies will have a strong interest in removing water from the Great Lakes-St. Lawrence, Nelson and Hudson basins and developing a continental water plan for the purpose of transferring water from Ontario to southwest US where water is scarce and higher prices will be paid.

²⁴ For a market capitalized firm whose stock price growth is supported by price-to-earnings ratios, the company's objective is to expand earnings relative to the market price of shares. In a situation of declining revenues, this is a very hard feat to perform since it requires generating an increasing return on sales even as the operational base is lessened.

WATERSHED FRAGMENTATION

194. Depending upon the private water system that is envisioned the increased introduction of private water companies can further increase watershed fragmentation.
195. Watershed fragmentation should be of concern to the public because where multiple unrelated water providers are involved in a single watershed there is a tendency for upstream operators to neglect or dismiss downstream concerns. It should be noted that Ontario's mostly public water management system already exhibits extreme watershed fragmentation. Our public policy should seek to defragment our water operations.
196. However, the creation of a competitive water management system, in which firms compete for municipal contracts, entrenches system fragmentation. Since the municipality is the consumer for which firms would compete, the continuance of system fragmentation is the very underpinning of a competitive marketplace.
197. It is possible to imagine a non-competitive private water management systems that integrates delivery throughout a watershed, though such systems (the British example) raise other problems.

INTEREST ALIGNED PRIVATE SECTOR INVOLVEMENT

198. There is, however, a key role that private businesses should play – and should be encouraged to play – in the water industry with respect to scientific discovery and technological innovation.
199. In our health care system there is a key role for private businesses in developing new medical technologies and pharmaceutical applications for purchase by our public health care system. Similarly, there is a strong role for water science and technology companies to play in the water services industry. Even further, the public interest in quality and efficiency of water management systems suggests that the public should promote and encourage companies pursuing these technologies.
200. An example of this appropriate partnership between the public and private sectors can be seen in the development of membrane filtration technologies by Zenon Environmental, a Burlington-based private company with revenues that have grown to over \$80 million per year. During OCWA's remediation of the Walkerton water system, one of Zenon's membrane filters was rented by OCWA to help secure the water. Zenon has made product sales as far away as Italy and Saudi Arabia. Significantly and appropriately, Zenon's roots can be traced back to the financial support of the Ministry of the Environment in the early 1990's.

DEVELOPING A QUALITY AND SAFETY FOCUS

201. Operational cultures are driven by many factors and have distinct outcomes. As argued elsewhere,²⁵ organization cultures and their commitment to quality, are set from the top of the organization, the leaders and governors of the enterprise. Such attitudes do not, however, spring from the ether. A quality and safety focus is driven into an organization by forces that shape the environment of an organization. Public control water enterprises subjects them to a higher standard of transparency and accountability and places these entities in positions of independence from contractors and bidders. These higher standards are a key force in creating developing an organizational culture focused on quality and safety.

ACCOUNTABILITY

202. Municipalities are governed by elected citizens who can be removed and whose processes of policy-making are made in open forums. Executives of the municipality are accountable to the Mayor and Council and other employees are, in turn, accountable to various people in the municipality's executive staff. There are similar lines of political and administrative accountability operating with respect to a Crown organization such as OCWA.
203. When OCWA provides service to a municipality, there are dual lines of administrative and political accountability flowing from the specific responsibilities of the municipality and OCWA. "The links between OCWA and MOE, and between the ministry and citizens, allow for an arena outside of local institutions in which residents – potentially assisted by the local government and other actors – might pursue political accountability and redress for serious problems that cannot be resolved locally." ²⁶
204. Privately held organizations may be required to report to publicly bodies on specific matters. In a regulated private market regime, companies can be required to take action, provide access or give information upon request, but the requirement for accountability is specific, not general. Privately held companies are driven by shareholder concerns with various forces and factors, such as public policy, impinging as considerations.
205. It has been argued by the Canadian Council for Public Private Partnerships that "market accountability" is exerted upon water treatment operating companies since they must periodically resubmit for the contract.²⁷ This form of accountability pertains to both economic and safety issues since both are considered by contracting municipalities. However, as might be shown through the case of Phillips Utilities in Hamilton,²⁸ the financial failure of a parent company can

²⁵ CH2M Hill and Diamond Management Institute, *A Total Quality Management System for Ontario*, p. 22

²⁶ David Cameron, *op cit*, page 118

²⁷ Canadian Council for Public-Private Partnerships, *op cit*, p. 17

²⁸ The City of Hamilton and Azurix both claim private ownership had no role on the spills, however, employee representatives believe staff reductions reduced the ability to detect and control such spills, raising environmental and health risks. Cases are before the Court.

lead a company to enact strategies to shed environmental and public health liabilities in an attempt to reset the company's balance sheet. This ever-present risk of the production of 'externalities' is inherent in the use of privately-held companies. Market accountability has periods of severe weakness. In the case of a slide to bankruptcy, no market accountability applies whatsoever.

- 206. Political and administrative accountability generally cannot co-exist with market accountability since private companies can only be specifically responsible and public agencies usually operate outside of market conditions. In the case of water treatment services, when given a choice between forms of accountability, political and administrative accountability must be deemed superior because of their enduring quality.
- 207. However, in certain public bodies, such as the Ontario Clean Water Agency, political and administrative accountability can be reconciled with market accountability.

TRANSPARENCY

- 208. Transparency relates to the ability to delve into the matters of an organization. The transparency of an organization supports the maintenance of appropriate internal operational ethics and practices in line with the objectives of those in the chain of accountability.
- 209. There may be some conflict between transparency and efficiency. Those who work in full view of the public may be inclined to follow the journey-person carpenter's rule: measure twice and cut once.
- 210. A transparent organization allows for informed and dispassionate decision-making by those in the chain of accountability. Those accountable may be a policy-maker, a regulator of a private entity, an administrator of a public entity, an elected officer holder or a voter.
- 211. Legislation such as Freedom of Information and the Audit Act and the existence of opposition parties and open municipal committees create important transparency. These transparency devices apply generally to public entities, but not private entities. Not only is there a full body of law that protects the security of information within a private organization, but market competition, the desired environment for private companies, mitigates against full transparency.
- 212. The existence of non-transparent private bodies bidding for public work raises numerous potential problems, including the risk of inappropriate valuation of company bids. Such distortion removes market accountability.
- 213. A report completed by the French government's Court of Accounts, the judicial organization with responsibility for financial oversight of the French public sector, cited concerns regarding the transparency of that country's largely privately-operated system. "The lack of supervision and control of delegated public services, aggravated by the lack of transparency of this form of

management, has led to abuses.”²⁹ The report suggested the creation of a municipal co-op to operate water services. A Le Monde editorial, concurring with the Court’s findings, warned that the private system “left elected [municipal] councillors on their own, without support, to deal with conglomerates wielding immense political, economic and financial power.”³⁰

214. Close relations are sometimes developed between water company executives and political parties. The Chair of Suez Lyonnaise, Jérôme Monod, is the former Secretary General of the neo-Gaullist RPR party. He was also mayor of Paris in 1985 when that city privatized water supply and sanitation. Stuart Smith, former leader of the Ontario Liberal Party, became chief executive of a federally privatized laboratory and then President of Philip Utilities Management Corporation (PUMC) when the lab was merged into Philip Environmental. Smith led the successful privatization efforts in Hamilton, Ontario which was completed without competitive bidding. Philip Environmental has also been a significant political donor.
215. In some cases, the lack of transparency between contractors and municipalities has led to criminal investigations and convictions of both public officials and company executives. In 1995, Alain Carignon, former mayor of Grenoble and Minister in the RPR Cabinet of Edouard Balladur, and a senior executive of Suez Lyonnaise, Jean-Jacques Prompsey, both received prison sentences for receiving and offering bribes of over \$6 million intended to influence water contracting. The water service was returned to public control in March 2000.³¹ Two executives of Generale des Eaux (now a subsidiary of Vivendi Environmental) have pleaded guilty to corruptly bribing the mayor of St-Denis, France to obtain the water concession.³² Three executives of Professional Services Group, a subsidiary of Aqua Alliance and now ultimately owned by Vivendi, and two local politicians were indicted following an investigation into allegations of bribery in the award of a 1991 water and wastewater contract.³³
216. Public entities are subject to public auditing, freedom of information laws and political accountability. In contrast to the opaque relations between city and contractor in Hamilton, the Clean Water Agency has promoted a transparent relationship with municipalities. “Access to agency information has become a standard feature of OCWA’s service arrangements, whereby clients can view financial, operating performance and asset maintenance information through ‘client connection,’ OCWA’s web-based service.”³⁴

²⁹ Francois Logerot, Cour des Comptes: La gestion des services public locaux d’eau et d’assainissement. Raport Public particulier, January 1997. See www.ccomptes.fr/Cour-des-comptes/publications /rapports/eau/cdc72.htm

³⁰ Le Monde, January 28th 1997

³¹ Public Service International, <http://www.world-psi.org/psi.nsf/c21eb7c93e96a7c9c125692200092672/8379ddb93b7c0844c12568b80053dfb8?OpenDocument>

³² Association Transnationale, http://www.transnationale.org/anglais/sources/environnement/eau_ccwater.htm

³³ The Times-Picayune, “Five Face charges of cash for favors” June 1, 2001

³⁴ Cameron, *op cit.*, page 98

INDEPENDENCE

217. Public water companies such as OCWA or municipal service providers operate existing facilities and manage the development of new facilities. They are “pure play” environmental management organizations with no interests in finance, construction, engineering or general contracting.
218. This unique position makes public water organizations independent from the private firms used in a development project. As a project manager, OCWA uses competitive contracting procedures to find the best quality and price for municipal and industrial clients.
219. The Office of Privatization report considered this issue in its 1998 report and concluded that an “analysis of the profitability of leading companies indicates that O&M [operations and maintenance] is a relatively low margin business. Many of these service providers pursue opportunities to expand their businesses through the provision of ancillary services, such as capital financing for infrastructure (as opposed to financing administration which is what OCWA currently provides)...using operations and maintenance as a stepping stone to more lucrative business.”³⁵
220. Leading private water contractors have various related interests: Professional Services Group/Vivendi (construction), Operations Management International/CH2M Hill (engineering), Suez Lyonnaise (banking, construction), US Water/Bechtel (construction, engineering).

DEVELOPING OPERATIONAL SCALE

221. Water service organizations gain efficiency as operations are spread across a large number of proximate facilities. OCWA is a significant tool in the development of scale and the generation of a “safety dividend.” Given the preference for public administration of water, the existence of a Crown operator that can generate scale, particularly for the high-risk smaller municipalities, is an important part of an overall safe water regime.

THE PROBLEM OF SMALL MUNICIPALITIES

222. Data from the Ministry of the Environment and anecdotal evidence shows that water system management problems are disproportionately concentrated among smaller water systems. We suggest the primary reasons for this concentration is that smaller municipal water treatment plants do not offer the scale of operations required to allocate the concentrated resources on the production of safe water.

³⁵ Privatization Review of the Ontario Clean Water Agency, 1998, p. 36

223. The testimony of Frank Koebel is evidence of the inability of small scale operations to concentrate sufficient resources on safe water. Frank Koebel testified that he was responsible for maintaining and operating pumping stations, maintaining the distribution system, taking water samples, maintaining chlorination systems, maintaining and replacing water mains, replacing and maintaining fire hydrants, replacing and maintaining valves, maintaining water towers, making necessary road and lawn repairs, detecting leaks, responding to public complaints, measuring chlorine residuals, record keeping, installing and replacing hydro services, maintaining three substations and even trimming trees to preserve hydro wires.³⁶
224. Elsewhere in his testimony, Frank Koebel indicates that he never attended training courses because "time wasn't allotted...to be away any length of time."³⁷

INTEGRATING SERVICE

225. Due to its sole focus on water management, OCWA – even through their portfolio of plants is weighted toward the problematic small municipalities – has shown a stronger quality record than industry as a whole.
226. Mandating smaller municipalities to rely upon OCWA for water services would increase safety and quality focus at those operations and reduce safety and quality risks for the residents currently being served by small-scale operators. This upward aggregation should be carried out in order to achieve a safe water regime.
227. For such municipalities, the Minister's power under the current *Capital Investment Plan Act, 1993* to ensure that OCWA's rates to clients reflect cost-recovery pricing would need to be invoked.
228. In addition to an increase in water quality, upon becoming integrated into OCWA's Hub administration system, small municipalities would be able to spread costs across a larger organization, delivering more efficiencies in water management that would be enjoyed by all municipalities served by OCWA.
229. Further, since it is these small municipalities that may require water system subsidy, the effective ability of an OCWA-like authority to implement the subsidy regime is enhanced.
230. Many municipalities have already decided that they do not wish to run their own public water companies. For these municipalities, OCWA offers an alternative and these decisions need to be honoured. "Smaller municipalities seem less likely to have resident expertise, and therefore may operate in a state of relatively higher uncertainty compared to larger centres. OCWA reports that while cost considerations will still be important, smaller municipalities tend to be motivated by the desire to mitigate risk and obtain expertise."³⁸

³⁶ Transcripts, Inquiry into the Walkerton Tragedy, December 6, 2000

³⁷ *Ibid*

³⁸ Cameron, *op cit*, page 97.

231. Integrating or co-ordinating the activities of water service providers can also help support efforts to properly manage watershed resources. Progress in achieving both these goals could be promoted by organizing the Crown water agency's operational units to follow watershed boundaries and giving the Agency the responsibility for analysing and managing source protection programs in the watershed.

OBSERVATIONS

232. The public administration of water resources is a preferred option for reasons of alignment of interests with environmental protection and the generation of operational cultures focused on safety and quality.
233. Smaller municipalities need to be encouraged to form efficient administrative water organizations or use the services of the Ontario Clean Water Agency. The smallest municipalities, which exhibit the greatest risk of deficiency, should be mandated to rely on OCWA.
234. OCWA could be organized on watershed areas in order to reduce upstream/downstream conflicts. OCWA should not only operate the smallest municipal services and those of other municipalities who choose OCWA, but also play an important role in co-ordination information flow between providers within a watershed.

PART IV: CONCLUSION AND RECOMMENDATIONS

235. Enhanced regulation and enforcement are insufficient responses to the dynamics currently driving the waterworks operation and maintenance industry. Government can steer all it wants, but if industry is rowing backwards, public policy objectives will not be met. In the case of water management, public administration is crucial to meet public goals.
236. Further, the Province's interest in creating a strong safe water regime for Ontario is strategically benefited by the existence of a Crown water regime that can support some of the Province's strategic interests. Not all the opportunities afforded by the existence of OCWA are being taken. This needs to be altered.
237. Water delivery needs to be moved to organizations of greater scale in order to maintain efficiency and create the possibility of a strong focus on quality. This quality needs to be expressed to the public and in this regard the Clean Water Agency itself needs to be renewed.

RECOMMENDATIONS

- 1) The Minister of the Environment should use powers under the *Ontario Water Resources Act* to aggregate small municipal water systems into Water Service Areas and Wastewater Service Areas with prices as set through a Drinking Water Providers Policy.
- 2) The MOE Drinking Water Providers Policy should set prices for consumers in Water Service Areas and Wastewater Service Areas based on recovery of the full cost of service and life cycle capital costing.
- 3) The MOE Drinking Water Providers Policy should require renewal of Certificates of Approval. All Certificates of Approval should require public administration as a condition of operating the permitted water facilities.
- 4) The MOE Drinking Water Providers Policy should require water treatment, distribution system and wastewater operators within a watershed to provide quality, intake and spill information to a Watershed Authority with responsibility for sharing information with appropriate downstream facilities and calculating total daily withdrawals from and returns to the watershed.
- 5) The MOE Drinking Water Providers Policy should require the continuous provision of water quality information to public internet sites.
- 6) The government of Ontario should transfer infrastructure assessment projects and subsidy delivery from SuperBuild to OCWA.
- 7) The MOE and OCWA should update their MOU to require the Agency to report regular data to MOE scientific and policy staff upon request.
- 8) The MOE and OCWA should update their MOU to create a new Board of Directors with new external representatives from municipalities, OCWA's own workforce, significant persons from the

environmental protection community and individuals with skill sets required by the Board room table.

- 9) The MOE and OCWA should update their MOU to require OCWA to provide information and support to non-client municipalities. Such a support service should be resourced by the MOE.
- 10) The MOE and OCWA should update their MOU to require OCWA to provide training access to municipal clients. The full cost of providing this service should be recovered by OCWA either by way of fees or contributions from the Consolidated Revenue Fund or a mix of both.
- 11) The MOE and OCWA should update their MOU to require the creation of a fixed amount capital fund managed by OCWA and accessible to municipalities be established.
- 12) OCWA's Board of Directors should develop new quality management systems including mechanisms to provide for interplay between the Operational Standards and Optimization Section and operations and mechanics implementing standards.