

Revisiting Water and Wastewater Utility Privatization

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Introduction¹

The 1990s was a time of tremendous optimism regarding water and wastewater utility privatization. It was a decade of experimentation with asset sales, long-term concessions, and shorter-term operating contracts. Early experience – starting with the privatization of water and wastewater systems in England and Wales and continuing with the negotiation of thousands of operating contracts in the United States – bred confidence. Inspired by successes elsewhere, and encouraged by industry consultants and upper levels of government, Canadian municipalities began testing the waters. In Ontario, several dozen entered into public-private partnerships.

In the last two years, however, privatization has stalled in the province, as it has across the country. Indeed, since Vancouver cancelled plans for the private design, construction, and operation of its first drinking water filtration plant, Canadian municipalities have steadily retreated from private-sector solutions to their water and wastewater problems. Halifax's decision to pull out of its agreement with a private firm to design, build, and operate three sewage treatment plants is but the latest in a series of defeats for privatization.

What has happened? Is it time to reassess privatization's potential? What can Ontario learn from a decade of experience, both in the province and further afield?

Recent years have seen several high-profile failures – most notably, that of the Atlanta drinking water contract. And critics of privatization have become a formidable force; they have succeeded in re-shaping the debate from one about municipal needs and solutions to one about tainting the very source of life with private profit.

But the fact remains that, in many jurisdictions around the world, water and wastewater utility privatization has been extraordinarily successful. It has brought investment in infrastructure. It has made available greater expertise. It has encouraged innovation. It has promoted efficiency. It has curbed the conflicts of interest that prevent governments that own, finance, or operate water systems from strictly enforcing the laws and regulations that govern them. As a result of all of these factors, it has improved performance and brought greater compliance with health and environmental standards.

Ontario's needs remain as pressing as ever. An astonishing 61 percent of municipally owned water treatment plants failed the latest round of provincial inspections. More than two years after the Walkerton water tragedy, 407 of 665 facilities continued to experience problems with training, sampling, disinfection, or water quality.² Wastewater facilities also perform poorly. One-hundred-and-one facilities appeared on the provincial non-compliance list for 2001, the last year for which data is available.³ Both water and wastewater infrastructure require enormous investment – almost \$13 billion and \$19 billion respectively, according to one estimate.⁴ Ontario's needs are indisputable. Privatization, accompanied by strict regulation, remains the most promising way to meet those needs.

Ontario: Where are we now?

Over the last decade, countless briefings, reports, and studies have endorsed greater private-sector involvement in the Ontario water sector. Study after study has concluded that, at its best, privatization can attract capital, improve performance, reduce costs and risks, and enhance accountability. Such benefits have been attributed to several factors, including: the private sector's experience and expertise; incentive structures that encourage innovation, increase efficiencies in construction and operations, and reward improved performance; economies of scale; and the separation of operator from regulator that occurs under privatization.

Advocates of private financing and competitive contracting have included think-tanks, industry consultants, and public-sector bodies. Provincially, the Interministry Committee on Local Government, the Alternative Financing and Public-Private Partnership Working Group, the Secretary of the Management Board, the Provincial-Municipal Investment Planning and Financing Mechanism Working Group, and the MISA Advisory Committee have praised privatization; nationally, Industry Canada and the National Round Table on the Environment and the Economy have echoed their enthusiasm.⁵

By 1996, privatization had become “a key provincial objective.”⁶ Cabinet determined that “opportunities for private sector participation in financing and delivering water and sewage services should be enhanced.”⁷ The Ministry of Environment quickly adopted the privatization policy, vowing to “encourage, facilitate and support new approaches and partnerships.”⁸ The policy retained its importance – in planning documents if not in reality – in the following years. “Enhancing private sector participation and competition” is listed as a policy objective in a May 1997 submission to the Cabinet Committee on Privatization.⁹ The government created the Ontario SuperBuild Corporation in 2000, and soon assigned to it responsibility for developing a long-term water and sewer infrastructure investment and financing strategy.¹⁰ In its first year-end “Progress Report,” the corporation predicted that “public-private investment partnerships will play a big role in eliminating Ontario’s infrastructure deficient.”¹¹

Although enhancing private sector involvement was clearly provincial policy, the government failed to communicate the policy to municipalities or the public. It did little to implement the policy. When asked at the Walkerton Inquiry if enhancing opportunities for private sector participation remained a goal during his tenure, former environment minister Norman Sterling replied, “Well, nothing happened really in that area.” When pressed, “was there any encouragement of any private sector involvement?” he replied, “Not that I’m aware of.”¹²

The government’s professed but seldom publicized commitment to privatization has had little impact on municipal decisions regarding the ownership and operation of water and wastewater facilities. Private involvement in the sector remains the exception to the rule. Although estimates vary, all are modest. In a 2002 report prepared for SuperBuild, PriceWaterhouseCoopers listed 30 Ontario municipalities with some private-sector involvement in their water or wastewater systems.¹³ The Walkerton Inquiry reported higher numbers: It found that 10 of the 672 water systems serving Ontario’s municipalities were privately owned – half by private water

companies and half by mining or paper companies – and 42 were privately operated.¹⁴

Although much of the private-sector water and wastewater activity has occurred in small communities,¹⁵ there have been several notable exceptions. In 1998, the then Regional Municipality of Haldimand-Norfolk signed a contract with the Professional Services Group (since acquired by USFilter) covering seven wastewater treatment plants, six lagoon systems, and 43 pumping stations serving 46,600 people living in a 2,800-square-kilometre area.¹⁶ In 2001, Azurix North America (since acquired by American Water Works) won a 10-year operations and maintenance contract for the water supply systems serving London, Ontario, and 20 communities in the surrounding region.¹⁷

Case study: Hamilton

The highest-profile privatization in Ontario occurred in Hamilton, in 1995. The municipality signed two contracts with Philip Utilities Management Corporation (PUMC) and its parent, Philip Environmental. A ten-year contract covered the management and operation of one water treatment plant and three wastewater treatment plants; a renewable shorter-term contract covered the outstations and a high lift pumping station. In 1999, Azurix purchased PUMC and took over the firm's contracts. Two years later, American Water Works purchased Azurix.

The partnership's successes and failures have been vigorously debated. Hamilton officials have repeatedly praised the arrangement for bringing savings in operating costs and economic development benefits.¹⁸ In contrast, CUPE has called it "the worst example, bar none, of the horror stories we've heard about privatization."¹⁹ The truth lies somewhere in between: Hamilton's approach to privatization has brought moderate savings and investment and has permitted the city to offload labour-relations problems. On the other hand, neither PUMC nor its successors have yet solved the performance problems plaguing the city's systems.

Before privatization, Hamilton's wastewater system was poorly managed, over staffed, and persistently out of compliance with provincial regulations. Yet privatization was not driven by a search for solutions to these problems. Instead, Hamilton privatized primarily in order to aid a local company and to reap economic development benefits. Rather than engaging in a competition to find the most experienced operator at the best price, it negotiated a sole-sourced agreement. Hamilton was not troubled by the newly formed PUMC's lack of expertise; indeed, providing it with experience was a key element of the venture.²⁰

PUMC and Philip promised a variety of investments in the community.²¹ They lived up to approximately one-half of their promises. PUMC did locate its head office in Hamilton, but instead of constructing new office space, the firm, with Hamilton's blessing, refurbished several floors of an existing building.²² By the end of 1998, PUMC had invested \$6.5 million in the region.²³ Although it had promised \$15 million in capital investments, Hamilton agreed that it had fulfilled its obligations in this regard.²⁴ Hamilton was also satisfied that Philip had lived up to its promise to create 100 jobs.²⁵ At the time of PUMC's sale, Azurix inherited the unfulfilled promises to develop an environmental enterprise centre and to establish an international training

centre.

Privatization brought savings in operating costs. Hamilton agreed to pay the operator an annual fee equal to the \$18.6 million it had previously budgeted to run the plant, less \$500,000 in guaranteed savings, \$103,000 to cover the environmental services department's overhead, and \$100,000 for contract co-ordination.²⁶ The contract also allotted Hamilton a portion of further cost savings, should they materialize. The guaranteed savings – comprising just 3 percent of Hamilton's previous costs – were modest compared to those achieved in jurisdictions that have contracted out operations through a competitive bidding process. When Azurix purchased PUMC, it sweetened the pot somewhat. As a condition of taking over the contract, it agreed to design and build, at its own expense, a pre-treatment facility for the Woodward Avenue sewage treatment plant – a commitment valued at \$7.5 million.²⁷

By 2001, it appeared that Hamilton was enjoying a host of savings beyond those guaranteed in the contract. In a joint submission to the Walkerton Inquiry, Hamilton and Azurix identified savings of \$35 million resulting from direct investment, operations savings, and additional revenue from a new carbon facility. They predicted that efficiencies will generate long-term operations savings of \$1.8 million a year, which Hamilton will benefit from when the contract expires.²⁸ The city was promised further financial gains by American Water Works, which, in its bid to take over the Azurix contract, agreed to resolve several outstanding issues at a cost to itself of \$680,000 and to invest an additional \$975,000 in plant upgrades.²⁹

Many of the operating savings realized by the contractors were attributable to staff reductions, which were made possible in part by changes in plant processes and computerized automation. PUMC's contract with the region required the firm to retain existing staff for 15 months. Once that limit had passed, it lost no time in paring numbers. By 2000, just 51 employees remained in a system that had maintained 122 positions five years earlier.³⁰ The deep cuts – along with management's expectations that workers would cross-train and multi-task – poisoned labour relations, which had initially been cordial. Union opposition to the operator's introduction of a training program to facilitate automation, equip workers to perform a wide variety of tasks, and ensure literacy and numeracy led to a 111-day strike in 1999. Labour relations improved after the strike. By the following year, representatives of both the operator and the union sounded optimistic – in the latter's case, cautiously so – about their working relationship.

The contractors' environmental performance is more difficult to assess. Decades of inadequate sampling make meaningful comparisons between the public operator and its private successors impossible. Taking Hamilton's effluent data at face value, one measure of performance – biochemical oxygen demand – improved after privatization while others – suspended solids, phosphorus, nitrogen, and ammonia – worsened.³¹ In any case, it is clear that myriad problems have continued to beset the sewage system. Sewage has frequently bypassed at least one stage of the full treatment process.³² Levels of suspended solids, phosphorus, and biochemical oxygen demand have periodically exceeded municipal and provincial limits.³³ A series of sewage spills have fouled local environments.

Municipal staff generally defend the contractor's environmental performance, maintaining that it is, however imperfect, an improvement over that which the city itself could achieve. They point out that poor performance often reflects circumstances beyond the operator's control. The system requires hundreds of millions of dollars in expansion and upgrades – which are Hamilton's responsibility.³⁴

Interestingly, privatization appears to have improved the province's enforcement of environmental laws. Hamilton's sewage treatment plants have a long history of violations. They made eight appearances on provincial non-compliance lists between 1987 and 1994. They were not prosecuted once. After Hamilton contracted out operations, the plants continued to experience problems. There was, however, a sea change in people's attitudes towards those problems. The union became extremely critical, and pressured the province to enforce the law. Between June 2000 and January 2001, the Ministry of Environment laid 14 charges in connection with violations at the Woodward Avenue, Dundas, and Waterdown facilities in 1998 and 1999.³⁵ Another eight charges followed in July 2001, prompting a spokesman for the operator to wonder out loud if his company were being treated more harshly than its public counterparts with similar or worse operating records.³⁶ That certainly appears to be the case. At the very least, the union, the public, and the ministry are holding the private operator to higher standards than those to which they held its public predecessor.

The current contract will expire at the end of 2004, at which time it is widely expected to be subjected to a competitive bidding process. The Hamilton Utilities Corporation has proposed moving responsibility for water from the current city department to a municipally owned corporation under its umbrella. The corporation would sub-contract water and wastewater operations and maintenance to the private sector.³⁷

Canada: Understanding successes and failures

Municipalities in other provinces have likewise experimented – still to a very limited extent – with privatization. Most examples concern operating contracts for publicly owned utilities. Privately owned utilities remain rare, except in British Columbia, where 187 private water utilities serve approximately 30,000 households.³⁸ More than half of these utilities are very small, serving fewer than 50 customers in trailer parks, resort areas, subdivisions, or isolated communities. The largest – White Rock Utilities – has been operating since 1913 and supplies 18,500 people.³⁹

The other side of the continent offers one of Canada's best examples of privatization's potential. In the 1990s, Moncton suffered from discoloured, foul-tasting, sub-standard water. Under periodic boil-water orders, the city resorted at one point to trucking in tankers of water from another community's treatment plant. Unable to obtain provincial or federal funding for a water treatment system, Moncton sought private-sector assistance. In 1998, after a competitive bidding process that initially saw expressions of interest from nine consortia, it signed an agreement with Greater Moncton Water, a company owned by USF Canada and the Hardman Group (the latter

of which was later bought out by the former). USF Canada financed, designed, and built a state-of-the-art water filtration plant; it now operates and maintains the plant.

Privatization brought immediate financial benefits to Moncton. In addition to relieving the city of the need to invest capital, it brought substantial cost savings. Greater Moncton Water built the plant for \$23 million – \$8 million to \$10 million less than a publicly designed and built plant would have cost. Those savings resulted in part from a 40 percent reduction in the size of the building, which was made possible by the choice of a particular kind of filtration. Operating costs will also be lower than they would have been at a publicly-run plant. All told, the city expects to save between \$14 million and \$17 million in capital and operating costs over the course of the 20-year lease. The city will pass along these savings to consumers. The average household will pay \$91 a year for the plant instead of the \$119 anticipated under the public alternative.⁴⁰

Moncton's privatization also brought dramatic health benefits. The contract requires the operator to meet or exceed Canadian drinking water guidelines. Its requirements for aluminum and colour are considerably stricter than the guidelines. Greatly reduced turbidity has not only improved the taste and smell of the water but also significantly reduced chlorine requirements and subsequent trihalomethane formation.⁴¹

Across Canada, decisions *not* to privatize have, of late, been more significant than decisions to privatize. What now appears to be a Canada-wide retreat from water and wastewater privatization began in 2001, with Vancouver's decision to cancel its plans to engage the private sector in the design, construction, and operation of the Seymour water filtration plant. The Greater Vancouver Regional District had issued a request-for-qualifications in the fall of 2000 and, the following winter, had announced a shortlist of four consortia from which it would invite full proposals. It expected to issue a request-for-proposals later in the year, to award a contract in 2002, and to see the plant completed in 2005. It envisioned a contract with a 20-year operating term. The proposal was primarily driven by the desire to tap into private-sector efficiencies, which were expected to result in savings of between 15 and 20 percent.⁴²

In the end, opposition spearheaded by CUPE and the Council of Canadians defeated the proposed plan. More than 1,000 noisy protesters showed up at public meetings, creating an atmosphere of fear and distrust. Opponents trumpeted their fears that international trade agreements would enable a foreign operator to wrest control from public regulators. They claimed that unclear language in the North American Free Trade Agreement and the General Agreement on Trade in Services could give the operator grounds to complain about a future change in regulation, a decision by the municipality to terminate the contract, or any other measure that reduced its profitability.⁴³ In June 2001, the Water District Board, concerned about legal uncertainties and intimidated by the prospect of a prolonged political struggle, announced its decision to abandon the design-build-operate arrangement.⁴⁴

Two weeks later, CUPE likewise convinced the councillors in Kamloops to reject a privatization option for their city's drinking water. Kamloops, whose turbid water frequently fails to meet

Canadian drinking water guidelines and whose residents are periodically advised to boil their water or to purchase bottled water, had explored a private solution to its problems. The city retained PriceWaterhouseCoopers to study options for a new water treatment plant. The consultant acknowledged that selecting a private firm would take time and could lack strong political support. Nonetheless, it recommended that the private sector design and build the plant and operate it for 20 years. It also recommended private financing as the best way to reduce the city's risks and risk-adjusted costs: "If the full benefits of risk transfer are recognized and greater affordability is desired, the preferred delivery model for the plant would be Design, Build, Finance, Operate."⁴⁵ Labour fought back with presentations to city council stressing, among other issues, Vancouver's change of heart on privatization. The arguments had their intended effect. Councillors, expressing concerns about trade agreements, project delays, irreversible commitments, and community opposition, voted against entering into a private-public partnership for the operation of the treatment plant.⁴⁶

The following spring saw Moncton turn away from a plan for the rehabilitation, operation, and maintenance of its water distribution and collection network – a project that it had hoped would be carried out by the firm that built and operates its water treatment plant. The city was criticized by public interest groups and a would-be competitor for approaching the project as an extension of the existing water treatment contract rather than subjecting it to public scrutiny and a competitive bidding process. In March 2002, city council decided to seal the draft agreement and commission an independent study of the needs of the system and the costs of upgrading it, putting further privatization on hold for the foreseeable future.⁴⁷

Privatization took another blow in June 2003, when Winnipeg decided against using a design-build-operate approach to obtain a water treatment plant. Councillors based their choice of a public model on a staff report that associated privatization with loss of control and that warned that a public review of the private option might be controversial.⁴⁸

Case study: Halifax

Most disturbing to advocates of privatization was Halifax Regional Council's decision, in June 2003, to pull out of its agreement with a private consortium to build and operate three new sewage treatment plants. Had it gone forward, the project would have put an end to the city's centuries-old practice of dumping raw sewage – currently at the rate of more than 150 million litres a day – into its harbour. The privatization process started in 1998 with a request for expressions of interest that drew 22 responses. Halifax received final proposals from two private consortia and a reference bid from municipal staff. Council approved draft agreements with the Halifax Regional Environmental Partnership (HREP) – a consortium led by Suez and its North American subsidiary, United Water – in May 2002.

The deal unravelled as the two parties squabbled over who should bear responsibility for the quality of the effluent from the new treatment plants. Although the city insisted that HREP should bear full responsibility for meeting standards, the consortium was not confident that it could do so using the level of treatment specified by the city – at least, not without the city

guaranteeing substantial improvements to the quality of the “influent,” the sewage entering the treatment plants.⁴⁹

In explaining why this disagreement arose months after the initial agreement was signed, HREP claimed that potential problems with influent quality came to light only when the federal government issued its environmental screening report for the project. Prior to that, it relied on out-of-date data provided by the city and by local industry. Yet when negotiating a performance contract – one in which payment will rest on the achievement of a specified effluent quality – a private provider would be expected to ascertain for itself the severity of the challenges facing it and the nature of the solutions required. Halifax insisted that it provided ample opportunities for testing and that it would have been reasonable for the consortium to do due diligence.⁵⁰

Leaving aside the issue of who should have known what, HREP’s proposed allocation of risk was logical. As a rule, a risk should be assigned to the party that has the most control over it and the greatest ability to reduce it. Halifax controls what goes into its sewer system. Only it can prevent hard-to-treat industrial pollutants from contaminating the influent. Through a sewer-use bylaw passed in 2001, Halifax plans to improve the quality of the influent. But the city’s regulation of discharges from some 5,000 sources will only be as effective as the monitoring and enforcement behind it. Project manager Mike Labreque insisted that the city’s commitment to source control was “well understood.” But understandings were not enough for HREP, which wanted the city’s responsibility clarified in the contract.⁵¹

The parties’ inability – or unwillingness – to resolve this matter likely reflects larger issues. In the five years since Halifax initiated competition for its sewage treatment project, the city lost a reform-minded mayor and his chief administrative officer, both of whom were committed to a private-sector solution to the city’s sewage woes. Management and strategy also changed in the companies leading HREP. As will be discussed below, Suez experienced difficulties with several contracts in the Third World, and United Water’s relationship with Atlanta soured. Such experiences have made both firms more averse to risk and have convinced them to leave bad relationships and avoid new mistakes.⁵²

Initially, Suez and United Water were prepared to take risks to establish a presence in Canada – a country seemingly rich in opportunities for their industry. They have doubtless revised their expectations. Canada is harder to do business in than anyone could have anticipated five years ago. The payback for making concessions in Halifax – contracts across Canada, in our many communities with substandard water and sewage facilities – had grown increasingly tenuous. Any reasonable company could be forgiven for cutting its losses and concentrating its efforts in more receptive jurisdictions.

The United States: Thousands of experiments

The United States certainly offers a more receptive environment for private water and wastewater firms. Private companies have supplied water to U.S. consumers since 1652. At the

beginning of the nineteenth century, private water companies served 94 percent of the U.S. market. Their share of the market then fell steadily as governments stepped in to service unprofitable areas.

A survey conducted in 1995 by the United States Environmental Protection Agency (EPA) found that 28,500 privately owned water systems served approximately 14 percent of the U.S. population.⁵³ These private systems were located primarily in small communities. Nonetheless, private systems did serve many larger communities. Twelve percent of the systems serving more than 10,000 people were privately owned.⁵⁴ The EPA did not calculate the number of privately owned wastewater facilities. Its privatization coordinator estimated the number to be in the low thousands, primarily in trailer parks and small developments.⁵⁵ A 1995 study by the National Regulatory Research Institute reported that public utility commissions regulated approximately 1,300 small, privately owned wastewater systems in 28 states.⁵⁶

The more common approach to privatization in larger U.S. municipalities is the contracting out of the operation and maintenance of publicly owned water and sewage utilities. Such contracts, pioneered in the early 1970s, remained fairly rare in the 1980s, covering perhaps a few hundred facilities. The 1990s saw a rapid increase in their numbers. In 2002, firms surveyed by *Public Works Financing* operated more than 2,400 water or wastewater facilities.⁵⁷ Cities contracting out water system operations now include Indianapolis, Phoenix, Seattle, and Tampa Bay. Those contracting out sewage system operations (or one element of the system, such as sludge) include Boston, Honolulu, Indianapolis, Milwaukee, New Haven, and Sacramento.⁵⁸

Although U.S. communities are embracing privatization for a variety of reasons, there is one overarching theme: Financially stressed communities with inadequate infrastructure cannot meet tough health and environmental standards on their own. A tremendous amount of capital-intensive work is required if municipalities are to meet the demands of the Safe Drinking Water Act and the Clean Water Act. In 2002, the Congressional Budget Office estimated that communities will have to invest between US\$492 billion and US\$820 billion in water and wastewater infrastructure over the next 20 years.⁵⁹ The EPA put the figure at between US\$485 billion and US\$896 billion.⁶⁰ Local governments are seeking private-sector capital to meet those needs, private-sector efficiency to help stretch that capital as far as possible, and private-sector expertise to determine the most effective solutions.

Recent assessments of privatization in the U.S. have, on the whole, been positive. In 2002, the U.S. General Accounting Office issued a report comparing public and private management of water and wastewater facilities. It found that private firms tend to be better prepared for future challenges than their public counterparts: “The plans [for managing existing capital assets] developed by privately owned drinking water utilities tended to be more comprehensive than those developed by publicly owned utilities.... [Furthermore,] public drinking water utilities were more likely than their privately owned counterparts to defer maintenance and major capital projects.... Also, public drinking water utilities were somewhat more likely than privately owned systems to have concerns about future funding.”⁶¹

The National Research Council also reported on water and wastewater privatization in 2002. While it cautioned that “no single model of public or private services ... best fits all situations,” it concluded, “given appropriate incentives, authorities, and responsibilities, water utility privatization will represent a viable option to public ownership or operations.”⁶²

Several surveys conducted by industry associations and think-tanks have found that water companies have invested considerable sums in infrastructure. A National Association of Water Companies survey of 84 investor-owned water utilities serving 5.7 million households and businesses found that the firms had invested almost US\$983 million in 1998 and planned further capital expenditures of almost US\$4.2 billion in the following five years.⁶³ In 1998, the Hudson Institute surveyed 29 water management contracts or asset sales in 11 states. It found that although the 16 firms involved in operations and maintenance contracts or outsourcing agreements made no significant capital expenditures, the nine firms that purchased assets invested US\$38 million in new or upgraded facilities and equipment (exclusive of acquisition costs), while the four involved in long-term leases invested US\$18 million.⁶⁴

The private sector’s capital investments, along with its expertise, have paid off in improved environmental performance. Of the facilities surveyed by the Hudson Institute, 12 had been out of compliance with environmental regulations at the time of privatization. Within one year, all had achieved full compliance.⁶⁵

Surveys of private operations have also revealed a legion of efficiencies. By streamlining finance, design and engineering, procurement, and construction practices, private firms have reduced construction times and costs. Free from political constraints, they have cut staffing levels. They have invested in costly equipment promising long-term savings. They have developed innovative management information systems and data processing technologies to improve cash flows, accounting, metering, billing, and debt collection. Large firms have taken advantage of bulk prices for chemicals and other supplies and have benefited from economies of scale in design, expertise, and equipment. Estimates of the savings resulting from various efficiencies are impressive. The Reason Foundation has repeatedly found private firms to be between 20 and 50 percent more efficient than their public counterparts.⁶⁶ *Public Works Financing’s* estimates of the operating savings resulting from outsourcing, based on 45 operations and maintenance contracts with terms of over ten years, fall in roughly the same range: 20 to 45 percent.⁶⁷

Perhaps most telling, privatization has been popular with municipalities. Its success is reflected in high contract renewal rates. *Public Works Financing* obtained information on contract renewals in 2002 from six companies. It reported that 97 percent of the 529 contracts that came up for renewal remained under private operation, with incumbent operators renewing 94 percent and competitors winning 3.5 percent. Less than 2 percent reverted to municipal operation.⁶⁸

Case study: Atlanta

Atlanta was the focus of considerable attention when it signed a 20-year contract with United

Water Services Atlanta (UWSA) to operate and manage its water system. In the largest American drinking water privatization to date, the city anticipated extraordinary savings from some of the world's most experienced water providers. After just four years, those interested in privatization once again turned their attention to Atlanta, but for another reason: They were trying to discern what went wrong in the country's highest-profile privatization failure.

Before privatization, severe problems beset Atlanta's drinking water system. One local newspaper called the improperly functioning system "a dangerous embarrassment;" another recalled it as being "in a shambles."⁶⁹ State inspectors had cited the city for problems with record keeping, monitoring, staffing, and discharges. Water main breaks were common in the winter. A former chair of the Utilities Commission described the poorly run, costly water department as "a poster child for government inefficiency."⁷⁰

Privatization, it was hoped, would solve many of these problems. The contract, which took effect in January 1999, specified improved performance. Even more important to politicians, it was a mechanism for freeing up money for repairs to both the water and sewer systems while moderating rate increases. It set UWSA's annual operations and maintenance fee at US\$21.4 million – 44 percent less than the US\$49 million the city had previously spent running the system. Some costs, including power, insurance, and contract-monitoring, remained with the city. Regardless, with 20 years of annual savings of more than US\$20 million, the city anticipated savings of US\$400 million over the life of the contract.

From the beginning, UWSA faced unanticipated problems. It inherited from the city a backlog of between 4,000 and 7,000 outstanding requests for service, some of which were three years old.⁷¹ A construction boom in the service area created additional demands. Worse, Atlanta's aging system – some parts of it dating back to 1875 – proved to be in surprisingly bad shape. The city had, in its initial specifications, considerably under-estimated the costs of repairing water mains, meters, and hydrants.

Despite the challenges, UWSA's performance seemed promising. The firm reduced water losses by 28 percent and improved equipment maintenance.⁷² Drinking water quality neither dramatically improved nor worsened during the four years of private operations. Sampling and testing increased – the latter, from 10,000 to 50,000 a year. Some contaminant levels decreased while others increased. At its best, UWSA reduced levels of coliform bacteria, turbidity (at one plant, by 87 percent), lead, and trihalomethanes. At its worst, although it stayed well within the limits imposed, it increased levels of coliform bacteria, turbidity, fluoride, copper, lead, nitrogen, and trihalomethanes.⁷³

Although a consultant's audit of the firm's first-year performance noted some problems, it was generally favourable.⁷⁴ Feedback from Mayor Bill Campbell was consistently positive. In 1999, the mayor professed his administration "extremely pleased with our transition in this public-private partnership."⁷⁵ The following year, he announced his intention – which would remain unrealized – to build on the success of water privatization by privatizing the city's sewer system.⁷⁶ The mayor's enthusiasm persisted. In 2001, he boasted of spearheading the "bold"

arrangement that brought savings, inner-city investment, and service improvements.⁷⁷

Shirley Franklin's assumption of the mayorship in January 2002 marked the beginning of the end of the city's relationship with its water contractor. Mayor Franklin, who had worked with USFilter on its unsuccessful 1998 bid for the Atlanta water contract, was not philosophically opposed to privatization. But she found UWSA's performance unsatisfactory. In June 2002, she put the firm on notice regarding its failure to collect outstanding bills, its backlog of meter installations, its improper letter of credit, and its inadequately trained maintenance staff.⁷⁸

UWSA defended its record. It blamed insufficient collections on delinquent public customers, a directive from the former administration not to cut off water service to some customers, and a lack of legal authority to cut off others. Regarding meters, it pointed out that the number of broken meters, and the cost of repairing them, had exceeded the city's initial estimates by up to ten times.⁷⁹ It objected that it had spent US\$10 million on unremunerated tasks. In addition to requesting compensation for these costs, it requested that its annual rate be raised by US\$4 million. The city rejected the request.⁸⁰

Other problems also arose during this period. The spring of 2002 brought complaints about discoloured water, and several boil-water advisories were issued. The city accused UWSA of failing to flush the system, while the firm blamed factors beyond its control, such as aging infrastructure and power failures.⁸¹ UWSA complained that Atlanta, which had retained responsibility for most capital investments, was not living up to its responsibilities. Rather than pumping savings from privatization back into the system, it charged, the city had diverted the money to other municipal uses. In January 2003, the city auditor confirmed that the city had indeed failed to reinvest savings in its utility: By charging its water department an annual franchise fee, the city had transferred US\$9.8 million a year to its general fund.⁸²

Further controversy concerned the extent of the cost savings realized by Atlanta. The January 2003 audit reported that the water contract had saved the city US\$29.4 million over three years – just half of what had been projected. United Water countered that it had saved the city approximately US\$17.5 million annually.⁸³ Whatever the correct figure, few dispute that the city's savings came at great cost to the firm: An audit found that UWSA incurred US\$47 million in debts over the first 44 months of the contract.

To no one's surprise, Atlanta and UWSA jointly announced the termination of their contract in January 2003. The city promised to create a new Bureau of Water to operate the system, to increase the workforce by 15 percent, and to raise water rates considerably. The vice-chair of Atlanta's utilities committee, assessing the task ahead, told reporters, "I'm terrified."⁸⁴

Reaction to the cancellation within the industry was gloomy. Andy Seidel, CEO of USFilter, blamed United Water for a slowdown in the development of large projects. "The Atlanta and Halifax fiascos," he said, "have hurt the image of the industry."⁸⁵ Critics of privatization exploited the cancellation, calling it a "debacle," "a powerful warning," "a red flag," and "a huge setback for privatization."⁸⁶ The press sounded similar warnings, with *The New York Times*

calling the collapse “a cautionary tale.”⁸⁷ Even the Reason Foundation was less than positive: “If nothing else, it teaches us what not to do.”⁸⁸

Indeed, Atlanta’s experience does hold important lessons for both municipalities and water companies. Like Halifax, it points to the importance of solid information about the state of infrastructure. Municipalities often lack good data on their systems and their needs. They may lack complete records of the demands placed on their systems or of work performed or pending. Without such information, it is difficult to establish a baseline, either to enable private firms to accurately bid on the work or to later compare the performance of the public and private operators.

Water companies, aware of the limits of municipal information, must take some responsibility for scrutinizing systems and operations before submitting a bid that will commit themselves to a price. In Atlanta, where in hindsight parent company Suez complained that “the initial contract as it was signed ... didn’t reflect the actual status of the system,”⁸⁹ UWSA could have been expected to do better due diligence. As the Reason Foundation explained, “Some of the blame must fall on UW. All of the bidders knew about the lack or quality of data ahead of time before they bid. Furthermore, UW has a lot of experience running old systems ... and it should have built that expertise into its proposal.”⁹⁰

On the other hand, requiring several competing firms to study a system extensively would be inefficient. Producing numerous feasibility studies would push up the costs of the bids and, by making the bidding process too expensive for small firms, reduce competition. The better choice is for a city to conduct a thorough study of its system and its needs before privatizing. To the extent that information remains elusive, contracts can identify parameters, spell out contingencies, and attach costs wherever possible.

It is possible, of course, that UWSA was aware of just how bad things were, and that it decided to take a financial risk to win the job. The firm desperately wanted the contract, which was seen within the industry as a key entry into the U.S. drinking water market. A representative of one large water company recalled that, in the bidding process, “It all boiled down to who wanted to lose the most money for the longest time.” Remedios Del Rosario, who ran Atlanta’s water department at the time of privatization, charged that UWSA “lowballed the bid.”⁹¹ If true, subsequent experience points to the hazards of pursuing contracts at a loss. A water company cannot safely assume that a municipality will be willing to re-negotiate its contract.

Nor *should* the municipality renegotiate, in most circumstances, if the integrity of a competitive bidding process is to be maintained. A contract must include mechanisms for holding accountable a firm promising deep savings and for ensuring that it lives up to its long-term service obligations. Assuming that the municipality has fully disclosed accurate information during the bidding process, and that the contract provides for contingencies, it is the firm that must bear the risks of a low bid. Nonetheless, the municipality must balance the costs and benefits of pushing bids downwards through fierce competition, remembering that emphasizing low costs over other factors can backfire.

Another lesson to be taken from Atlanta's experience – one echoed in Hamilton – is that dividing responsibility for operations and capital improvements between a firm and a municipal owner can lead to unresolvable disputes. It becomes too easy for each side to pass the buck to the other. Too often, an operator will blame poor performance on an owner's failure to invest in infrastructure. Had UWSA's agreement with Atlanta taken the form of a long-term concession assigning responsibility for all aspects of the system, or had the system been fully privatized, the firm could have only pointed a finger at itself when rusty water poured from the pipes. With greater responsibility comes greater accountability.

Atlanta's experience also underlines the importance of strong political support for privatization and the challenges associated with changes in political leadership and priorities. Former mayor Bill Campbell – interestingly, a populist democrat – championed privatization with energy, enthusiasm, and determination. Indeed, he remained a fan until the very end. In a written statement issued days before the contract's termination, he deemed the project a success, saying, "Issues of performance under the current contract, while very important, should not obscure the intrinsic financial benefit of privatization to the city."⁹²

Europe: Two models, one spectacular success⁹³

Europe is the source of two dominant privatization models: contracting out (in its many variations) and asset sales. Publicly owned, privately operated water and wastewater systems have long been a part of the French landscape. Both of the French water giants – Suez and Générale des Eaux – were established in the nineteenth century. Along with Saur, they now provide water services to almost 80 percent of the French population and wastewater services to 40 percent. Despite the prominent private role, the French system is not by any stretch a private market. Water systems are generously subsidized; regulation is highly politicized; the water companies enjoy close ties to the government; and the government protects the companies from foreign competition. To find a truer private regime, one must look across the channel, to England and Wales.

Case study: England and Wales

In 1989, Margaret Thatcher's government sold off the assets of the 10 regional water and wastewater authorities in England and Wales. A host of problems had long plagued the underfunded systems. More than a quarter of the treated water disappeared through leaking distribution and supply pipes, some of which dated back to the Victorian era.⁹⁴ Almost a third of the drinking water zones breached limits on pesticides and iron, and almost a quarter breached limits on lead.⁹⁵ Only 66 percent of designated beaches met European bathing water standards.⁹⁶ The government estimated that £24 billion would be required within 10 years to repair the water and sewage systems and to meet new European standards. For both political and financial reasons, it wanted the investment to come from the private sector rather than the public sector.

To prepare for privatization and to enable the public water and wastewater authorities' private

successors to meet tough environmental standards, the government wrote off £5 billion of their debts and provided them with a “green dowry” – a £1.6 billion cash injection. It then transferred their infrastructure and most of their functions to 10 new “water service companies” and sold shares in these companies in a public offering.⁹⁷ There is general agreement that the flotation price was low – to some degree, intentionally so, in order to ensure the offering’s success. The shares were oversubscribed.⁹⁸

The new companies provided sewage services to all of the connected population and water services to approximately three-quarters of the connected population. The remaining quarter continued to be served by one of 29 previously existing private water supply companies, some of which had been in business since the seventeenth century. The government established environmental, health, and economic regulators to oversee both the new water service companies and the long-established water supply companies. This combination of privatization and regulation has by many measures – including capital investment, drinking water quality, environmental performance, and customer service – been a success. Indeed, it exemplifies just how much privatization, when managed wisely, can accomplish.

The 10 new water service companies have invested enormous sums in infrastructure. Capital investment has averaged £3.5 billion a year since privatization.⁹⁹ By the end of 2005, the private companies will have invested £50 billion¹⁰⁰ – the equivalent of more than Cdn\$110 billion. As one official from the Department of the Environment noted, “You just couldn’t contemplate that kind of expenditure in the absence of privatization.”¹⁰¹ Indeed, annual capital expenditures before privatization averaged just £1.9 billion in the 1980s.¹⁰²

Whether the private water companies have invested their capital as efficiently as possible is subject to debate. While generally enthusiastic about the efficiencies achieved, then Director General of Water Services Ian Byatt questioned the cost effectiveness of some early expenditures, suggesting that some projects designed to improve water quality “showed poor value for money.”¹⁰³ Some companies may have initially over-invested in infrastructure, thanks to incentives in their early years to “gold-plate” investment plans.¹⁰⁴ It is also possible that the marginal returns of more recent capital investments have declined as major environmental and health goals have already been met.¹⁰⁵

Despite some inefficiencies, the water companies’ investments have paid substantial health and environmental dividends. In addition to financing the construction of new primary treatment facilities for the wastewater of more than seven million people and new secondary treatment facilities for the wastewater of more than 15 million people, the money has gone into upgrading more than 70 water treatment plants and nearly 600 wastewater treatment plants, improving more than 2,400 combined sewer overflows, and building or renovating tens of thousands of kilometres of water mains and sewers.¹⁰⁶

Drinking water quality has steadily improved since privatization, with companies increasingly meeting or exceeding standards for coliforms, iron, turbidity, nitrate, lead, aluminum, and pesticides. Chief Inspector Jeni Colbourne, in presenting the Drinking Water Inspectorate’s

Annual Report for 2002, paid tribute to “a decade of year on year improvement in compliance with the drinking water standards by the water companies.”¹⁰⁷ Her pride was unmistakable: “Thanks to a system of rigorous enforcement by our inspectors and investment by water companies, the quality of drinking water in England and Wales is the best it has ever been.”¹⁰⁸ Of the nearly three million tests carried out in 2002, 99.87 percent complied with drinking water standards. The 0.13 percent of the tests that failed to meet standards represented a significant improvement over the 1 percent that had failed at the time of privatization.¹⁰⁹

Environmental performance has improved by a number of measures. The percentage of plants meeting the requirements in their “discharge consents” has risen to 99 percent from 90 percent.¹¹⁰ The discharge of suspended solids from sewage treatment plants has fallen from approximately 140 thousand tonnes per year in 1990 to approximately 70 thousand tonnes per year. The discharge of biochemical oxygen demand has fallen from more than 110 thousand tonnes to less than 40 thousand tonnes.¹¹¹

Freshwater quality has improved significantly in the last decade. Between 1990 and 2002, the biological quality of 28 percent of rivers (net) improved, while the chemical quality of 42 percent of rivers (net) improved.¹¹² In 2001, the Environment Agency announced that rivers were the cleanest they had been since before the industrial revolution and that fish, otters, and other wildlife were returning to waters long devoid of life.

Privatization has also made coastal beaches swimmable. Compliance with European standards has risen dramatically, climbing from 76 percent in 1989 to 99 percent in 2002. During this period, the number of designated coastal beaches in England and Wales has also increased, rising from 401 to 482.¹¹³ Privatization has thus “created” 173 swimmable beaches.

Much work remains to be done before privatization can be said to have fulfilled its environmental mandate. Water companies remain among the worst polluters in England and Wales. The water industry caused 150 serious pollution incidents in 2002.¹¹⁴ However, there is little doubt that the remaining improvements to infrastructure and operations are more likely to be made under the new private system than under the former public system, if for no other reason than that the regulatory environment is far stricter than it was before privatization. As the University of British Columbia’s Karen Bakker has pointed out, prior to privatization, the “water authorities were run as self-regulating Crown corporations.” “Despite having been privatized, the water industry in England has been re-regulated rather than de-regulated.”¹¹⁵ The increasingly stringent regulations, rising number of prosecutions (despite the falling number of serious pollution incidents), their higher public profile, and the increase in the levels of fines demonstrate a far tougher attitude towards pollution.¹¹⁶ In 2002, nine companies incurred almost £1 million in fines resulting from Environment Agency prosecutions.¹¹⁷

While the massive investments in water and wastewater infrastructure have raised consumer prices, the increases have been modest. The average household bill for water and sewage has risen by 21.3 percent in real terms since 1989.¹¹⁸ (The nominal average cost of water and sewerage services to unmetered domestic customers had climbed more than 22 percent during

the seven years preceding privatization, when far less was being invested in infrastructure.¹¹⁹) Water bills did rise dramatically in the early years of privatization, and it took some time for Ofwat, the economic regulator, to get them under control. As prices rose, customers were particularly sensitive to water company executives' lavish salary, benefit, and bonus packages, and to the water companies' generous profits and dividends. Such concerns encouraged the new Labour government elected in 1997 to levy a one-time "windfall tax" on the profits of privatized water, electricity, and other utilities; the water companies' share was £1.65 billion.¹²⁰

In the early years of privatization, the water companies' practice of disconnecting non-paying customers also drew fire. With fewer than 10 percent of households on water meters, most people could do nothing to keep their costs down.¹²¹ The private companies demonstrated little patience with non-paying customers. The number of households disconnected for not paying their water bills soared to 21,282 in 1991-92 – more than double the 9,218 households that public water companies had disconnected the year before privatization. After 1991-92, the number of disconnections fell steadily, reaching 1,129 in 1998-99. In 1999, the Water Industry Act banned disconnection of households and vulnerable water users such as day care centres, doctors' offices, nursing homes, and schools.¹²²

Despite early controversies over prices and disconnections, most would agree that privatization has increased the accountability of water companies to consumers. Dissatisfied customers have access to redress – in the form of set compensation payments – if companies fail to meet guaranteed standards for service. These guaranteed standards require payments for interruptions in water supply, low water pressure, flooding from sewers, and poor customer service. The payments can be substantial. For example, when 6,000 homes in southeast London were without water for five days in September 2003, Thames Water faced compensation payments of more than £300,000.¹²³ The industry has paid out more than £7.6 million in compensation and rebates since 1991.¹²⁴ Such payments create strong incentives to provide good service. Indeed, they likely help account for post-privatization service improvements, reflected in steep declines in the number of properties at risk of either low pressure or sewer flooding.¹²⁵ Whatever the cause, Ofwat's Deputy Director General suggested five years into privatization, "In many ways, better customer care has developed more significantly than any other facet of the water industry."¹²⁶

In recent years, it has been the water companies, rather than their customers, who have cried out for better care. The combination of the windfall tax and the 1999 economic review, in which Ofwat imposed an average 12 percent reduction in prices, sent share prices falling and prompted at least one water company to complain that it could no longer make any money from owning a water business.¹²⁷ In the coming years, Ofwat will have to maintain a fine balance between protecting consumers and ensuring that the water companies have the financial means to carry out their functions.

In July 2003, *The Economist* reviewed water privatization in England. "How does the record look 14 years on? In terms of quality, service delivery and efficiency, the answer is excellent; in terms of stockmarket performance, less so."¹²⁸ Two months earlier, the magazine turned its attention to the same issue, summing up its assessment as follows: "Privatization works. State

ownership is costly and inefficient.” To bolster its arguments, it compared services in England to those in Scotland, where water remains a nationalized industry, and in Northern Ireland, where water is managed by a government department. It found that English utilities score better on drinking water quality tests, comply more often with sewage discharge regulations, and lose less water to leakage than do Scottish or Irish utilities. Furthermore, English utilities provide these superior services at lower costs. Average household bills are lower in England than in Scotland or Northern Ireland. Most striking is the difference in commercial water bills: A medium-sized Scottish office pays 16 times more for water than its English counterpart. *The Economist’s* conclusion was inescapable: “Private water firms beat the public sector on all counts.”¹²⁹

The Developing World: The real lessons

The scope of the developing world’s water problems is, obviously, very different from that of Canada’s. Between 1.2 billion and 1.4 billion people lack access to clean drinking water.¹³⁰ Between 2.5 billion and 3 billion people lack adequate sanitation.¹³¹ Millions – perhaps as many as 12 million – die each year from diseases related to water and sanitation.¹³² Solving these problems could require investments of as much as US\$100 billion a year.¹³³ Despite the enormous difference in scale, many of the developing world’s needs – for capital, expertise, innovation, efficiency, and accountability – are all-too-familiar in the developed world. Accordingly, many call for solutions similar to those being tried in North America and Europe.

In the 1990s, cities and regions in the developing world began to experiment with various approaches to privatizing their water and wastewater utilities. By 1997, *World Water and Environmental Engineering* described “a seemingly irreversible and rising tide of private sector involvement in the provision of water supply and sewage treatment services all around the globe.”¹³⁴ According to the World Bank, between 1990 and 2001, 202 private water and sanitation projects reached financial closure.¹³⁵

Despite several high-profile cancellations and renegotiations, the great majority of these projects have remained viable. Less than 4 percent have seen the exit of the private sector.¹³⁶ Nonetheless, enthusiasm in both the public and private sectors appears to be dwindling. Several visible failures have generated pessimism about the privatization process, the almost inevitable battles over pricing, and the effects of outside factors, such as currency devaluations.

One of the most often repeated cautionary tales concerns Cochabamba, Bolivia, which awarded a 40-year concession to a subsidiary of Bechtel in 1999. The process – which proceeded with little public consultation, required the construction of an uneconomic dam and tunnel to boost water supplies, involved no competition, and resulted in unanticipated and extreme price increases – was doomed to fail. It did so tragically, in April 2000, after general strikes, mass demonstrations against price hikes, the declaration of martial law, and the death of six people.¹³⁷

A gentler failure occurred in Western Manila, where, in 1997, a 25-year water and wastewater concession went to Maynilad Water Services, a consortium including Filipino-owned Benpres

and Suez. Maynilad succeeded in expanding services: Coverage increased from 58 to 84 percent. But the consortium suffered many problems. Compared to the concessionaire for Eastern Manila, it operated inefficiently. The system suffered from the effects of severe droughts and the government's delays in completing a river-basin project. Maynilad's most severe problems resulted from the Asian financial crisis and Manila's subsequent refusal to adjust rates to enable the firm to recover large foreign exchange losses, as agreed in contract. In December 2002, the debt-ridden Maynilad announced its intention to terminate the agreement.¹³⁸

Similar financial problems plagued privatization in Buenos Aires, where Aguas Argentinas, a consortium led by Suez, won a 30-year water and wastewater concession in 1993. Aguas Argentinas accomplished much. It increased water coverage from 70 to 83 percent, increased collections from 90 to 95 percent, and increased operating efficiency considerably. Although it initially promised to reduce tariffs by almost 27 percent, over the years it obtained a number of price adjustments, the first because of the city's inadequate records and the unexpectedly poor condition of the water distribution network. The Argentine financial crisis of early 2002 wreaked havoc on the concession. Once the peso was "de-pegged" from the dollar and devalued, Aguas Argentinas had trouble servicing its debt, most of which was denominated in U.S. dollars. When the government refused to raise prices to offset the devaluation, the consortium announced its desire to pull out of the agreement, and the matter went into arbitration.¹³⁹

Although the above failures have largely been attributed to macro-economic crises (or, in the case of Cochabamba, to bad processes and political interference) rather than to privatization per se, critics have seized on them to discredit the privatization process. In so doing, they have tended to exaggerate both the failures and their implications for Canada. This dynamic was exemplified by the reaction to an April 2003 World Bank report on privatization in the developing world. Writing in *The Globe and Mail*, Madelaine Drohan claimed that the bank has experienced "a crisis of faith."¹⁴⁰ According to Ms Drohan, the bank, in *Private Participation in Infrastructure in Developing Countries*,¹⁴¹ concluded that "privatization is no panacea" and that "selling a water or electricity system to the private sector does not solve the essential problem – which is how to pay for such systems in the first place." The report, she wrote, "has implications ... for developed countries like Canada who still have government assets – like water utilities and electricity systems – left to sell." The implications, as understood by Ms. Drohan, were that "there are limits to what the private sector can and should do. Not every public service should be a candidate for private ownership."

Only an extremely selective reading of the report could lead one to such conclusions. The report's author, Clive Harris, reviewed the rise and fall of private investment in infrastructure projects in the developing world. Between 1990 and 2001, he reported, US\$754 billion was invested in almost 2,500 projects in more than 132 developing countries. (More than US\$40 billion of this investment went to water infrastructure projects.) After peaking in 1997, private investment dropped significantly – although it still amounted to US\$57 billion in 2001. Harris attributed the reduced enthusiasm for privatization to a number of factors, including macro-economic crises and challenges associated with the pricing and regulation of public services. He was quick to point out that these challenges beset public and private providers alike. In many

cases, he explained, privatization simply “flushed into the open the problems that had been left unattended during the era of public sector provision.” Clearly, he noted, such problems “will not be solved by a reversion to public ownership.”¹⁴²

Indeed, Harris was extremely critical of public sector monopolies, which he described variously as underfunded, inefficient, overstaffed, mismanaged, undisciplined, unaccountable, and ineffective at expanding services to meet new demands. In contrast, he credited the private sector with a host of benefits, including increased investments, improved services, and lower prices. Due to improved productivity and efficiency, he reported, private provision tends to reduce costs by between 10 and 30 percent. A move to private provision also tends to enhance regulation by reducing the “fundamental conflicts of interest” that occur when governments both own and regulate services. He explained, “by separating oversight from ownership, an arms-length relationship can be introduced, along with real punishments and incentives for compliance.” Harris’s preference for private-sector solutions was clear: “Well-designed private participation schemes can produce real improvements in the quality and quantity of infrastructure services, as well as major benefits for the efficiency of provision.”¹⁴³

This is not to say, Harris hastened to add, that privatization will automatically solve all problems. A privatization must be well-designed in order to succeed. Critical to its success are competition, risk shifting, independent regulation, and transparency. Fundamentally important – and politically difficult – is sustainable pricing. Public services have historically been underpriced. In the early 1990s, revenues recovered just 30 percent of the costs of providing water in developing countries. Although privatization has helped rationalize tariffs, increases have often cost the proponents popular – and ultimately, political – support. Regardless, Harris concluded, privatization is most likely to meet the challenges of pricing, and thus to facilitate the provision of much-needed infrastructure: “Most of the concerns about the sustainability of private infrastructure really reflect the difficulties governments have in sustaining cost-recovering tariffs and commercial principles in these sectors. This is likely to be a bigger problem when provision is public rather than private; hence we are likely to see less resources flowing to the infrastructure sectors under public provision, everything else being equal. The real issue is not public infrastructure versus private infrastructure. Put this way, it is more simple: the argument is about less infrastructure versus more.”¹⁴⁴

Making Sense of the Debate in Ontario

A persistent question remains: If privatization has been promoted by experts and embraced (in theory if not in practice) by provincial politicians and bureaucrats, if it has been largely successful around the world, why are not more Ontario municipalities privatizing? There is certainly a crying need for the capital, expertise, innovation, efficiency, and accountability that, experience indicates, privatization can bring. What explains municipal resistance to privatization?

Doubtless, many factors have contributed. The public – and subsidized – Ontario Clean Water

Agency will operate water and wastewater systems for municipalities that are unwilling or unable to do so on their own. Tax policies tilt the playing field in favour of the public sector. Provincial requirements that municipalities repay past grants if they sell their facilities discourage full privatization. Opposition from labour unions raises the political costs of privatizing.

Perhaps more important, Ontario's municipalities have no pressing incentive to privatize. The promise of grants and subsidies reduces their need for private financial assistance. Rather than seeking private-sector capital to construct and upgrade facilities, and private-sector efficiencies to stretch their limited dollars, municipalities seek public money – preferably in the form of grants that need not be repaid. Loath to require their residents to bear the full costs of treating their water and cleaning their sewage, they lobby for provincial or federal assistance. When it fails to flow freely enough to meet all of their needs, they simply defer improvements pending the next round of grants or the announcement of a new infrastructure program.

The lax enforcement of laws protecting public health and the environment further dampens municipalities' incentives to seek private-sector assistance to improve their systems. Despite recent progress in inspecting drinking water facilities and issuing orders to those that fail to comply with provincial regulations, MOE's enforcement remains weak. In the first eight months of 2003, the ministry announced fines relating to 11 water systems and charges relating to an additional four systems. The fines, ranging from \$100 to \$40,000 (plus a victim surcharge) were generally modest; only one exceeded \$16,000.¹⁴⁵ Such mild deterrents go far in explaining widespread non-compliance: Sixty-one percent of municipally owned water treatment plants failed provincial inspections in fiscal year 2002-03.¹⁴⁶

The enforcement of laws and regulations governing sewage treatment is just as lax. Although Environment Canada calls municipal wastewater effluents “one of the largest threats to the quality of Canadian waters,”¹⁴⁷ municipalities understand that they can exceed discharge limits with impunity. According to Pollution Watch, in 2001, the country's 15 largest water polluters were municipal sewage treatment plants, six of which were located in Ontario. Facilities in Toronto, Ottawa, Hamilton, and Mississauga released a variety of pollutants, including ammonia, nitrate, mercury, hexachlorobenzene, manganese, zinc, chlorine, and copper.¹⁴⁸ These facilities were by no means the only ones polluting Ontario's waters. That year (the last for which information is available), 101 sewage facilities were either out of compliance with legal limits or out of conformance with provincial policies and guidelines.¹⁴⁹

Despite the consistently poor performance of wastewater facilities across the province, prosecutions have always been – and remain – rare. In the first eight months of 2003, MOE announced charges relating to just three sewage operations – two regarding unlicensed operators and one regarding a failure to report on the capacity and condition of sewage works. During this period, MOE announced only one fine regarding sewage works – a \$10,000 fine for failing to ensure that a licensed operator ran a sewage works.¹⁵⁰

Weak enforcement assures municipalities that their problems do not require immediate attention.

The Chief Judge of the Yukon Territorial Court made this point in March 2003 when sentencing Dawson City for pumping untreated sewage into the Yukon River. The judge noted that, although the city had breached the conditions of its water-use licenses for years, the territorial water board had continued to grant it new licenses. The conduct of the board, he said, “constituted passive encouragement of non-compliance by the City.” So, too, with Environment Canada’s failure to prosecute the city’s numerous breaches of the Fisheries Act. “This lack of action over a period of almost 20 years sent only one clear message to the City of Dawson: non-compliance is not a serious matter. It is a message that the City of Dawson received in clear and unequivocal terms, and goes some way in explaining its somnambulistic attitude for the better part of 20 years.”¹⁵¹ The judge referred to an often cited 1980 court decision on the same point: “If the responsible government agency is not pressing for compliance, or it’s actually encouraging non-compliance through tacit or explicit agreements to permit non-compliant operations, the corporations cannot be severely faulted.”¹⁵²

Both the promise of public money and the tolerance of poor performance relieve pressures on municipalities and reduce their incentives to seek private-sector assistance in solving even their most persistent water and wastewater problems. In this all-too-comfortable environment, decision makers are vulnerable to arguments against privatization – even those that are founded more on fear than on fact.

The state of the debate

In the last decade, the quality of the debate regarding water and wastewater utility privatization has deteriorated, with an increasingly emotional opposition making unfounded claims with impunity. Perhaps more troubling than the prevalence of misinformation is the movement away from information altogether. We have entered a new stage of the debate, one that emphasizes how one *feels* about water and how one feels about companies making a profit from providing water services.

Canadians profoundly mistrust the profit motive. Lawyer and journalist Karen Selick only slightly exaggerated when she wrote that Canadians “have mentally divided the world into two distinct groups. Everyone who works for a profit is a greedy, money-grubbing, corner-cutting, cheat-his-own-grandma sleaze-bag, while everyone employed by a non-profit institution is a conscientious, selfless, caring, sharing saint.”¹⁵³ Sadly, even some of the work coming out of Canadian universities lives up to that caricature.

In July 2003, the Munk Centre, with the Federation of Canadian Municipalities, published *Good Governance in Restructuring Water Supply*. Written by Karen Bakker, the handbook expressed the commonly held belief in the goodness of the public sector. The author summarized the primary roles of decision makers in idealized models of resource management.¹⁵⁴ Under the planning model, where governments own and manage utilities, decision makers’ goals are to minimize risk and meet legal and policy requirements. Under the market model, where private corporations own and operate utilities, the goals are to maximize profit and perform efficiently. Missing from this jejune schema was any acknowledgment that, in real life, public decision

makers are utterly failing to minimize risk or meet legal requirements. Nor did the author express any understanding that a private water manager cannot maximize profit in the long term without avoiding costly risks and meeting legal requirements.

A distaste for profit in the water sector appeared in the Spring 2003 issue of *Alternatives*, the quarterly journal of the Environmental Studies Association of Canada. Guest Editor David McDonald, Director of Development Studies at Queen's University, introduced the volume with the challenge, "What can we do about the increasing commercialization of this precious resource?"¹⁵⁵ Tony Clarke elaborated, "The central concern is that water is a fundamental human right and a public good that should not be entrusted to for-profit corporations."¹⁵⁶ Karen Bakker identified a key divide in the debate: "Is water a commons or a commodity?... Those who advocate a commons view assert that water is a resource essential for life, and that converting it into a business opportunity would be unethical."¹⁵⁷

Antagonism to profit is, of course, not relegated to universities. In a statement circulated before the World Water Forum held in Kyoto in March 2003, several prominent critics of privatization, including the Council of Canadians and CUPE, put forth the "unwavering principle" that water is "an inalienable human right and a public trust." Since "no person or entity has the right to profit from" water, it reasoned, the management of water services must remain in public hands.¹⁵⁸ The Council of Canadians's Maude Barlow expanded on the theme: "The primary role of business is not to provide accessible and quality water: it is to make a profit for its shareholders. Their objectives, and the needs of people and nature, are fundamentally at odds."¹⁵⁹

Such arguments demand that those considering privatization mount a defence of capitalism itself, or, at a minimum, engage in a debate of daunting breadth. It requires them to confront fundamental assumptions about the ways in which human beings, corporations, and governments function. It is hardly surprising that many municipalities, wary of controversy, shrink from the challenge.

It may be possible to soften aversion to profit in water by pointing out the success with which the private sector produces and distributes food, housing, or other essential products. It may be useful to remind those who promote the water commons that treating water as a good – one priced to reflect its scarcity – will give people incentives to use it wisely. Or it may be possible to use Public Choice arguments to disabuse people of their illusions about the public sector – to convince them that public and private enterprises alike are directed and staffed by individuals who have their own interest at heart. Luci Yamamoto made this point in the February 2003 issue of *Public Works Financing*, when she wrote of public works projects, "The implicit objective is the public interest, yet players are inherently self-serving."¹⁶⁰ In sentencing Dawson City, the Chief Judge of the Yukon Territorial Court cast the argument somewhat differently, pointing out that public decision makers profit from pollution: "Although not commercial corporations, municipalities do 'profit' from delaying major capital projects.... [T]he capital funds can be used for other projects more popular with voters, resulting in political gains for elected officials, perhaps with an eye to the next municipal election."¹⁶¹

Ultimately, however, it is not for municipalities to debate the niceties of self-interest in the public and private sectors. How people feel about profit is beside the point. How the private sector has performed and what mechanisms are required to ensure future success are far more important. As Gary Podesto, Mayor of Stockton, California, said on the subject of his city's decision to sign a 20-year contract for its water, wastewater, and stormwater utilities, "This can't be a decision of the heart. It must be a decision of the mind."¹⁶²

The myth of public-sector accountability

The other great divide in the debate about water and wastewater utility management concerns the issues of control and accountability and whether they are enhanced or impeded by privatization. The Polaris Institute linked privatization with loss of control in its January 2003 publication, "Global Water Grab: How corporations are planning to take control of local water services." Likewise, in a collaborative effort with CBC Radio, the Center for Public Integrity warned in February 2003 that the explosive growth of private water utilities raises fears that "accountability will vanish, and the world will lose control of its source of life."¹⁶³

In reviewing the advantages and disadvantages of various business models, Karen Bakker's report for the Munk Centre perpetrated the myth of public-sector accountability. When a utility is owned and operated by a municipal government, she wrote, "clear and direct accountability exists through municipal council." She listed the key sanctions against public utilities for failing to maintain services as state authority backed by coercion, political process via elections, and litigation. In contrast, under delegated management she suggested, "accountability to consumers is reduced, particularly in the case of long-term contracts."¹⁶⁴

While municipal accountability may sound good in theory, it rarely works in practice. As evidenced by the extraordinarily high rate of non-compliance among Ontario's water and wastewater utilities, sanctions are rarely applied. Municipal politicians, managers, and operators are rarely held accountable – by regulators, by voters, or by the courts – for failing to maintain services. Indeed, many enjoy formal liability protections that virtually erase their accountability. Municipalities and their employees enjoy certain liability limitations under the Municipal Act. In tort law, courts grant municipal governments broad immunity from the consequences of policy making. When courts do find governments liable, fewer remedies are available, since they cannot grant injunctions against the crown or its servants. And of course, the consequences of liability are limited, since public decision makers rarely foot the bill for their mistakes, instead passing costs along to taxpayers.¹⁶⁵

Private water and wastewater firms enjoy fewer legal protections than do their public counterparts. Equally important, they are held accountable by the markets in which they operate. Investors punish firms for poor performance. Share prices fall. Even small mistakes can destroy reputations and cost firms future business. As the president of Azurix said, "If you are negligent, you are history."¹⁶⁶ The ultimate punishment of being put out of business does not threaten municipal or provincial service providers – a fact that dramatically reduces their accountability. (Private firms' vulnerabilities also create risks for their municipal clients, who will want to

require guarantees from parent companies, letters of credit, bonds, and/or insurance policies to protect themselves from their service providers' failures.)

Those who advocate privatization as a means of gaining control and increasing accountability understand that governments cannot effectively regulate utilities that they own, operate, or finance. When regulating themselves, governments are too often restrained by conflicts-of-interest. Privatization in England and Wales was driven, in part, by a growing understanding of this fact. In 1987, the Secretary of State acknowledged that in a publicly owned system, the government acted as both "gamekeeper" and "poacher." While responsible for controlling the discharge of pollutants, it was a major discharger in its own right. These dual roles put it in an inescapable conflict and made good regulation impossible. Privatization, it was proposed, would separate the polluter from the regulator, thereby freeing the latter to regulate. Experience has proved the wisdom of such an approach. David Kinnersley, who served first as a chief executive for a water authority and later as a board member of the new regulatory agency, identified the formation of clearly defined units monitored by independent regulators as the "most significant gain" of the British water privatization. He praised the new "clarity of purpose in the different agencies," saying, "This could be a framework in which water utility privatization comes to be seen as sustainable."¹⁶⁷

A study of best practices in the water sector, prepared for SuperBuild in April 2002 by the Cadmus Group, KPMG, and NuWater, made the following contribution to the debate about control and accountability: "While superficially ceding public control of utilities, private sector involvement in, and alternative forms of governance of, water and wastewater utilities, can enhance utilities' accountability to stakeholders and to public policy objectives in general. A key element of that accountability is the separation of operations and the regulation of operations, which can help ensure better enforcement compared to self-regulation. Private sector involvement tends to lead to a greater separation of such functions ... [T]he extent to which accountability is enhanced depends on the calibre of: the contract provisions and the contract manager (for limited-term contractual franchises) [or] the regulators themselves (for indefinite-term, non-contractual franchises)... [A] better focus of inquiry lies in 'accountability' as opposed to 'control.'"¹⁶⁸

Indeed, it is critically important, when privatizing, to ensure that effective accountability mechanisms are embedded in both the contract and the regulatory regime. Contracts must specify performance criteria, financial assurances, penalties for non-compliance, and incentives for improved performance. And strict, enforceable regulation must govern economic and environmental performance. In the public mind, privatization and deregulation are often associated with one another. In the case of water and wastewater monopolies, however, deregulation is as inappropriate as it is unusual. Generally, the more complete the privatization, the more demanding the regulatory regime. In the United States, privately owned water and wastewater utilities face regulatory scrutiny that their public counterparts avoid. In England and Wales, privatization brought with it a tough new regulatory regime. Through enforceable contracts and improved regulatory frameworks, privatization will create a degree of accountability unheard of in the public sector.

Endnotes

1. This paper frequently draws from Elizabeth Brubaker, *Liquid Assets: Privatizing and Regulating Canada's Water Utilities* (Toronto: University of Toronto Centre for Public Management, 2002).
2. Figures are for the fiscal year ending March 31, 2003. John Steele (Ontario Ministry of the Environment), Telephone conversation with Elizabeth Brubaker, September 19, 2003.
3. Ontario Ministry of the Environment, 2001 Environmental Compliance Reports [online] [consulted June 4, 2003] <<http://www.ene.gov.on.ca/envision/comp01/index.htm>> As of September 5, 2003, results for 2002 were posted for only six of the 22 district or area offices.
4. Canadian Water and Wastewater Association, *Municipal Water and Wastewater Infrastructure: Estimated Investment Needs 1997 to 2012*, April 1997, revised April 1998, p. 27.
5. For a brief overview of many of these studies, see Elizabeth Brubaker, *The Privatization of Water Utilities: Supplementary Information*, Submission to the Walkerton Inquiry, August 13, 2001.
6. Larry Clay and Satish Dhar, Briefing note regarding MOEE Cabinet submission on the provincial role in sewer and water, August 6, 1996, p. 1.
7. Ontario Cabinet Minute No. 7-29/96, Cabinet meeting of August 14, 1996, p. 1.
8. Ontario Ministry of Environment, *1997 Business Planning Cycle Update*, September 1996, p. 15.
9. Submission to the Cabinet Committee on Privatization, May 1997, p. 11.
10. Ontario SuperBuild Corporation, *SuperBuild Policies and Priorities*, Ontario Budget Paper, May 2001, p. 26.
11. Ontario SuperBuild Corporation, *Building Ontario's Future: A SuperBuild Progress Report*, December 2000, p. 8.
12. Walkerton Inquiry, *Transcript*, June 27, 2001, p. 230, lines 3-10 and p. 235, lines 1-3.
13. PriceWaterhouseCoopers, *Organization of Municipal Water and Wastewater Systems in Ontario*, Produced for Ontario SuperBuild Corporation, June 2002, p. 131.
14. Dennis O'Connor, *Report of the Walkerton Inquiry: Part Two* (Toronto: Ontario Ministry of the Attorney General, May 2002), p. 279.
15. For examples of smaller contracts, see Canadian Council for Public-Private Partnerships, *Public-Private Partnerships: Canadian Project and Activity Inventory – 1998*, September 1998.
16. USFilter, "Haldimand-Norfolk, Ontario," *Statement of Qualifications*, September 2000.
17. City of London, "Contract awarded for water supply systems," Press release, September 20, 2001.
18. Art Leitch, E-mail to editor@summitconnects.com, February 3, 2000; and Canadian Council for Public-Private Partnerships, *Overview of Successful Public-Private Partnerships in the Water Sector*, November 2000, p. 2.

19. Jon Wells, "Water deal with PUMC called a horror story," *Hamilton Spectator*, January 30, 1999, quoting CUPE president Judy Darcy.
20. John Anderson, *Privatising Water Treatment: The Hamilton Experience*, Report prepared for CUPE, January 1999, p. 6, citing Leo Gohier, presentation to *Forming Successful Public Private Partnerships*, Toronto, May 1997.
21. The Region of Hamilton-Wentworth, Philip Utilities Management Corporation, and Philip Environmental, *Plant Operations Agreement*, December 30, 1994, Article 12.01, pp. 56-8.
22. Nolan Bederman, "Philip Utilities Management Corp. and the Region of Hamilton-Wentworth: Public-Private Partnership for Wastewater Treatment," in *Case Studies in Public-Private Partnerships*, Nolan Bederman, Frank DeLuca, and Michael J. Trebilcock, jointly sponsored by the Canadian Council for Public-Private Partnerships and the Centre for the Study of State and Market at the University of Toronto Faculty of Law, August 1996, p. 29.
23. M. Stirrup and K. Stolch (signatories), *1998 Philip Utilities Management Corporation (PUMC) Performance Review (ENV99025)*, March 25, 1999.
24. *Plant Operations Agreement: Fourth Amending Agreement and Consent*, May 17, 1999, Section 2 (d), p. 6 and Schedule S.
25. M. Stirrup and K. Stolch (signatories), *1998 Philip Utilities Management Corporation (PUMC) Performance Review (ENV99025)*, March 25, 1999; and *Plant Operations Agreement: Fourth Amending Agreement and Consent*, May 17, 1999, Section 2 (d), p. 6. Azurix further strengthened local employment numbers by locating its North American headquarters in Hamilton and moving an engineering division there.
26. The Region of Hamilton-Wentworth, Philip Utilities Management Corporation, and Philip Environmental, *Plant Operations Agreement*, December 30, 1994, Article 5.01, p. 30, and Schedule M.
27. *Plant Operations Agreement: Fourth Amending Agreement and Consent*, May 17, 1999, Section 2 (c), p. 4; and Art Leitch, E-mail to editor@summitconnects.com, February 3, 2000.
28. City of Hamilton and Azurix North America, *Achieving the Vision: The True Story of Hamilton and Outsourcing*, Submission to the Walkerton Inquiry, August 2001, p. 10.
29. City of Hamilton, Proposed Sale of Azurix North America Corp. to American Water Services, Inc., Schedule "D" Term Sheet, pp. 15-16; and Dave Clancy, E-mail to Elizabeth Brubaker, February 19, 2002.
30. Mark Hudson, E-mail to Elizabeth Brubaker, February 12, 2001. Others' figures on staffing levels vary. The *Plant Operations Agreement* (Schedules G1, G2, and G3) lists 138 positions (not all of which were filled) in 1994. According to Leo Gohier and Jeff McIntyre, approximately 25 voluntary retirements at the end of 1994 brought the number of positions down to approximately 113, approximately 12 of which were vacant. Thus, PUMC started out with approximately 101 filled positions. Meeting with Elizabeth Brubaker, December 20, 2000. According to Mr. Hoath, the number of filled, unionized positions fell from 108 before privatization to 32 in January 2001. E-mails to Elizabeth Brubaker, January 25, 2001 and February 21, 2001.
31. Effluent quality data for the period from 1990 through 1999 were provided by Water Quality Manager Mark Stirrup, April 12, 2000.
32. Steve Buist, "Ministry investigates Woodward sewage spill," *Hamilton Spectator*, February 2, 1999; Steve Buist, "Sewage plant can't handle volume," *Hamilton Spectator*, February 2, 1999; John Percy, Letter to Greg Hoath, March 18, 1999; and Rick Hughes, "Ministry, region at odds over effluent measuring," *Hamilton Spectator*, March 13, 1999.

33. Steve Buist, "Ministry investigates Woodward sewage spill," *Hamilton Spectator*, February 2, 1999; and Wylie Rogers, "Illegal wastewater dumping triples," *Hamilton Spectator*, October 11, 1999.
34. Eric McGuinness, "Sewage upgrade tab is \$570m," *Hamilton Spectator*, April 28, 2000.
35. Terry O'Neill, Telephone conversation with Elizabeth Brubaker, January 26, 2001. Thirteen of the charges are described in Eric McGuinness, "Sewage plant firm charged," *Hamilton Spectator*, January 16, 2001.
36. Lisa Hepfner, "Sewage plant operator cited for pollution, licence offences," *Hamilton Spectator*, July 7, 2001; and Mark Hudson, Telephone conversation with Elizabeth Brubaker, July 2001.
37. Art Leitch, Telephone conversation with Elizabeth Brubaker, September 19, 2003.
38. B.C. Ministry of Environment Lands and Parks, Water Management Branch, Utility Regulation Section, *Annual Report for the Period Ending March 31, 2000*, draft; and Rick Couroux, Telephone conversation with Elizabeth Brubaker, May 15, 2000.
39. Chester Merchant, Telephone conversation with Elizabeth Brubaker, May 17, 2000.
40. City of Moncton, New Brunswick, and USFilter, "Canada's first major drinking water public-private partnership begins delivering water," Press release, October 21, 1999; L. E. Strang, E-mail to Elizabeth Brubaker, May 9, 2000; L. E. Strang, letter to Ken Meech, Chief Administrative Officer for Halifax Regional Municipality, February 29, 2000; and USFilter, "Moncton, New Brunswick," *Statement of Qualifications*, September 2000.
41. James Forster, "Water treatment begins," *Moncton Times and Transcript*, October 21, 1999; City of Moncton, *Annual Water Quality Report*, 1998, pp. 4, 7; and USFilter, "Moncton, New Brunswick," *Statement of Qualifications*, September 2000.
42. Greater Vancouver Regional District, Seymour Filtration: Project Overview, September 2000; and Larry Pynn, "GVRD cools to idea of private water plant," *Vancouver Sun*, June 22, 2001.
43. Steven Shrybman, *A Legal Opinion Concerning the Potential Impact of International Trade Disciplines on Proposals to Establish a Public-Private Partnership to Design Build and Operate a Water Filtration Plant in the Seymour Reservoir*, Prepared for CUPE, May 2001.
44. Greater Vancouver Regional District, "GVWD decides against design-build-operate arrangement for construction of drinking water filtration facilities," Press release, June 29, 2001; and George Puil, Presentation to Canadian Council for Public-Private Partnerships conference, November 25, 2002.
45. City of Kamloops, "Minutes of a regular meeting of the municipal council of the City of Kamloops," June 26, 2001, pp. 6-7.
46. City of Kamloops, "Minutes of a regular meeting of the municipal council of the City of Kamloops," July 10, 2001, pp. 2-6, 20-1.
47. James Foster and Craig Babstock, "Moncton wants cost of fixing city water system," *Moncton Times and Transcript*, March 5, 2002.
48. Dan Westell, "Winnipeg Water Rejects DBO," *Public Works Financing*, Volume 174, June 2003, p. 22.
49. Halifax Regional Municipality, News release, June 20, 2003; Jeffrey Simpson, "Cleanup contract goes down the drain," *Halifax Herald*, June 21, 2003; and Jeffrey Simpson, "City opted for lower-level sewage treatment – consortium," *Halifax Herald*, June 24, 2003.

50. Mike Labrecque, Telephone conversation with Elizabeth Brubaker, July 18, 2003.
51. Labrecque, *Ibid.*; and Gail Lavielle, Telephone conversation with Elizabeth Brubaker, July 18, 2003.
52. "United Water's New CEO Pulls Back," *Public Works Financing*, Volume 175, July-August 2003, p. 5.
53. United States Environmental Protection Agency, *1995 Community Water System Survey: Overview, Volume I*, EPA #815R97001A, pp. 7-8.
54. United States Environmental Protection Agency, *Small Water System Characteristics*, prepared by the Cadmus Group using data from *1995 Community Water System Survey*, draft dated January 7, 1999.
55. Haig Farmer, United States Environmental Protection Agency, E-mail to Elizabeth Brubaker, January 21, 2000.
56. Janice A. Beecher, G. Richard Dreese, and John D. Stanford, *Regulatory Implications of Water and Wastewater Utility Privatization* (Columbus, Ohio: The National Regulatory Research Institute, July 1995), p. 23.
57. William G. Reinhardt, "U.S. Water/Wastewater Fees Up 13% in 2002, Contract Renewal Rate Rises to 97%," *Public Works Financing*, Vol. 171, March 2003, p. 1.
58. "U.S. Water Partnership Scorecard: Communities with Long-Term Contracts," *Public Works Financing*, Volume 175, July-August, 2003.
59. Congressional Budget Office, *Future Investment in Drinking Water and Wastewater Infrastructure*, November 2002.
60. United States Environmental Protection Agency, *The Clean Water and Drinking Water Infrastructure Gap Analysis*, EPA-816-R-02-020, September 2002.
61. United States General Accounting Office, *Water Infrastructure: Information on Financing, Capital Planning, and Privatization*, August 2002, pp. 7-8.
62. Committee on Privatization of Water Services in the United States, National Research Council, *Privatization of Water Services in the United States: An Assessment of Issues and Experience* (Washington: National Academy Press, 2002), pp. 1-2.
63. National Association of Water Companies, *1998 Financial and Operating Data for Investor-Owned Water Utilities* (Washington: NAWC Economic Research Program, 1999).
64. Hudson Institute, *The NAWC Privatization Study: A Survey of the Use of Public-Private Partnerships in the Drinking Water Utility Sector* (Washington: National Association of Water Companies, June 1999), pp. 35, 39.
65. Hudson Institute, *Ibid.*, pp. 35, 39.
66. Kathy Neal, Patrick J. Maloney, Jonas A. Marson, and Tamer E. Francis, *Restructuring America's Water Industry: Comparing Investor-Owned and Government-Owned Water Systems*, Policy Study No. 200 (Los Angeles: Reason Foundation, January 1996), pp. 3, 10; Adrian Moore, *Clearing Muddy Waters: Private Water Utilities Lower Costs and Improve Services* (Los Angeles: Reason Public Policy Institute, 1997), p. 1; Reason Public Policy Institute, "Wastewater Treatment," *Privatization Database* [online] [consulted December 16, 1999] <<http://www.privatization.org>>

67. "Tampa Bay Water DBO Award," *Public Works Financing*, Vol. 139, April 2000, p. 5; "Newport, R.I., Votes for Earth Tech," *Public Works Financing*, Vol. 146, December 2000, p. 7; "Water/Wastewater Privatization Hits a Growth Spurt," *Public Works Financing*, Vol. 127, March 1999, p. 17; "IRS Rules in Favor of Pension Portability," *Public Works Financing*, Vol. 129, May 1999, p. 2; "Water Privatization Scorecard," *Public Works Financing*, Vol. 126, February 1999, p. 8; "Market Awaits Enron's Answer," *Public Works Financing*, Vol. 127, March 1999, p. 3; and "Tampa Bay Water Plant DBO," *Public Works Financing*, Vol. 129, May 1999, p. 8.
68. William G. Reinhardt, "U.S. Water/Wastewater Fees Up 13% in 2002, Contract Renewal Rate Rises to 97%," *Public Works Financing*, Volume 171, March 2003, p. 1.
69. "Campbell bridges troubled water issue," *Atlanta Business Chronicle*, September 4, 1998; and D.L. Bennett, "Atlanta, water firm split," *Atlanta Journal-Constitution*, January 25, 2003.
70. Frank Koller, "No silver bullet," CBC Radio, February 5, 2003 [online] [consulted September 8, 2003] <<http://www.cbc.ca/news/features/water/atlanta.html>>
71. Ann Hardie, "City, firm up to their necks in complaints," *Atlanta Journal-Constitution*, September 6, 1999.
72. Rich Henning, Data provided to Elizabeth Brubaker, July 29, 2002.
73. United Water Services Atlanta, *Atlanta's 1998 Drinking Water Quality Report*; United Water Services Atlanta, *Atlanta Water System Water Quality Report for 1999*; United Water Services Atlanta, *Atlanta Water System Water Quality Report for 2000*; United Water Services Atlanta, *Atlanta Water System Water Quality Report for 2001*; and City of Atlanta, Bureau of Water, *Atlanta Water Quality Report 2002*.
74. "United Gets Good Marks on Atlanta Water Report Card," *Public Works Financing*, Volume 141, June 2000, pp. 3-4; and Robin Johnson and Adrian Moore, *Opening the Floodgates: Why Water Privatization Will Continue*, Policy Brief 17 (Los Angeles: Reason Public Policy Institute, August 2001).
75. United Water, *1999 Annual Report*, p. 13.
76. Bill Campbell, "Building the New Atlanta Through Effective Partnerships," 2000 State of the City Millennium Business Breakfast [online] [consulted April 5, 2001] <<http://www.ci.atlanta.ga.us/mayor/2000%20Speech/Page2.htm>>
77. City of Atlanta, "Accomplishments of Mayor Bill Campbell," *City Beat Online*, Vol. 3, No. 49, June 9, 2001 [online] [consulted October 29, 2001] <<http://www.ci.atlanta.ga.us/pdf/V3%20-%20No.%2049.pdf>>
78. City of Atlanta, "Mayor Shirley Franklin Initiates Review of United Water Contract," Press release, June 11, 2002.
79. Rich Henning, Telephone conversation with and fax to Elizabeth Brubaker, July 29, 2002; and Doug Reichlin, Telephone conversation with Elizabeth Brubaker, August 8, 2002.
80. Geoffrey F. Segal, "Atlanta Water Privatization Continues to Play Out," *Privatization Watch*, Reason Public Policy Institute, December 2002.
81. Milo Ippolito, "Dirty tap water stirs flood of complaints," *Atlanta Journal-Constitution*, June 8, 2002; and D.L. Bennett, "Franklin assails United Water," *Atlanta Journal-Constitution*, June 12, 2002.
82. William Reinhardt, "How Atlanta Lost its Low-Bid Bet on Water Ops," *Public Works Financing*, Volume 169, January 2003, p. 1.

83. D.L. Bennett, "Water service audit shows goals unmet," *Atlanta Journal-Constitution*, January 22, 2003.
84. William Reinhardt, "How Atlanta Lost its Low-Bid Bet on Water Ops," *Public Works Financing*, Volume 169, January 2003, p. 2. Shook's remark was also reported in D.L. Bennett, "Atlanta, water firm split," *Atlanta Journal-Constitution*, January 25, 2003.
85. "US Filter Reorganizes Operating Services," *Public Works Financing*, Volume 175, July-August 2003, p. 7.
86. Douglas Jehl, "As Cities Move to Privatize Water, Atlanta Steps Back," *New York Times*, February 10, 2003; Kristin Roberts, "U.S. water privatization effort trips in Atlanta," Reuters, January 29, 2003; and Rick Brooks, "A Deal All Wet: Atlanta's Plan For Water Privatization Failed," *Wall Street Journal*, January 31, 2003.
87. Jehl, *Ibid.*
88. Geoffrey Segal, "The Atlanta Water Privatization: What Can We Learn?" Reason Public Policy Institute, January 2003.
89. Rick Brooks, "A Deal All Wet: Atlanta's Plan For Water Privatization Failed," *Wall Street Journal*, January 31, 2003.
90. Geoffrey F. Segal, "Atlanta Water Privatization Continues to Play Out," *Privatization Watch*, Reason Public Policy Institute, December 2002.
91. D.L. Bennett and Julie B. Hairston, "Atlanta may throw out United Water," *Atlanta Journal-Constitution*, January 19, 2003.
92. Bennett and Hairston, *Ibid.*
93. Ian Byatt, then the water industry's chief economic regulator, praised the results of one decade of privatization and regulation in England and Wales: "There have been spectacular successes." Ian Byatt, "Life after the 1999 Periodic Review," WTI Keynote Seminar, Royal Aeronautical Society, London, January 26, 2000.
94. Ofwat, *Leakage of Water in England and Wales*, May 1996, pp. 4, 11, 13.
95. Sue Tabb, ed., *Waterfacts '97* (London: Water Services Association of England and Wales, 1997), p. 29, citing *Drinking Water 1996: A Report by the Chief Drinking Water Inspector*.
96. Donna Burnell, ed., *Waterfacts '95* (London: Water Services Association of England and Wales, 1995), p. 31.
97. Ofwat, *Privatisation and History of the Water Industry*, Information Note No. 18, February 1993.
98. Shaoul compares the assets' sale price of £5.25 billion to their net book value of £8.87 billion. He also notes that the sale price was less than the debt write-off and the green dowry, concluding that, by any measure, the sale "constituted a loss to the Government and taxpayers." Jean Shaoul, "A Critical Financial Analysis of the Performance of Privatised Industries: The Case of the Water Industry in England and Wales," *Critical Perspectives on Accounting* (1997) 8, p. 486.

The former Director General of Water Services points out that while taxpayers may have lost initially, they recouped their losses through the windfall tax levied in 1997. Ian Byatt, "The Water Regulation Regime in England and Wales," in *Regulation of Network Utilities: The European Experience*, eds. Claude Henry, Michel Matheu, and Alain Jeunemaitre (Oxford: Oxford University Press, 2001), p. 81.

99. Ofwat, *Financial Performance and Expenditure of the Water Companies in England and Wales: 2002-2003 Report*, August 2003, p. 8.
100. Ofwat, *Water and Regulation: Facts and Figures*, May 2003.
101. Anonymous, Telephone conversation with Elizabeth Brubaker, March 18, 1997.
102. Ofwat, *Financial Performance and Expenditure of the Water Companies in England and Wales: 2002-2003 Report*, August 2003, p. 8.
103. Ian Byatt, "Life After the 1999 Periodic Review," Speech to Royal Aeronautical Society, January 26, 2000.
104. Caroline van den Berg, "Water Privatization and Regulation in England and Wales, *Public Policy for the Private Sector*, The World Bank, June 1997, p. 10.
105. David S. Saal and David Parker, "Productivity and Price Performance in the Privatized Water and Sewerage Companies of England and Wales," *Journal of Regulatory Economics* 20:1, 2001, pp. 77-8.
106. Ofwat, *The Urban Waste Water Treatment Directive*, Information Note No. 24, revised June 1998; Sue Tabb, ed., *Waterfacts '97* (London: Water Services Association of England and Wales, 1997), p. 58; Water UK, *Waterfacts '98* (London: Water UK, 1998), p. 61; and Thompson Gow and Associates, *Canada's Untapped Resource: Public-Private Partnerships in Water Supply and Wastewater Treatment*, Prepared for Technology Transfer Office, Environmental Technology Advancement Directorate, Environment Canada, Technology Transfer Series 2E, September 1995, p. 30.
107. Jeni Colbourne, Letter to the Secretary of State for the Environment, Food and Rural Affairs and the Minister for Environment, Planning and Countryside, National Assembly for Wales, July 9, 2003.
108. Drinking Water Inspectorate, "Tap Water Quality – Taken for Granted, A Measure of Trust?" Press release, July 9, 2003.
109. Ofwat, *Levels of Service for the Water Industry in England and Wales, 1998-99 Report*, September 1999, p. 28; and Drinking Water Inspectorate, Chief Inspector's Statement, *Chief Inspector's Report 2002*, July 2003.
110. Environment Agency, *Spotlight on Business Environmental Performance: 2002*, July 2003, p. 26; and Ofwat, *Water and Regulation: Facts and Figures*, May 2003.
111. Environment Agency, *Ibid.*
112. Rachel Anning, "River Quality – An Overview," *Environmental Facts and Figures*, Environment Agency, 2003.
113. Environment Agency, *State of the Environment: Bathing Water Quality*, 1999; and Jenny Evans, "Bathing waters are cleanest ever," Environment Agency press release, November 11, 2002.
114. Environment Agency, *Spotlight on Business Environmental Performance: 2002*, July 2003, p. 27. Information in brackets from Susanne Baker, "Repeat offenders take the shine off pollution reductions," Environment Agency press release, July 30, 2003.
115. Karen Bakker, *Good Governance in Restructuring Water Supply: A Handbook*, Commissioned by the Federation of Canadian Municipalities and the Program on Water Issues at the University of Toronto's Munk Centre for International Studies, July 2003, pp. 34, 18.

116. Environment Agency, "Water Companies: Things Can Still Get Better, Says Agency," Press release, September 1, 1999"; Environment Agency, *Spotlight on Business Environmental Performance: 2002*, July 2003, pp. 11, 13; Environment Agency, *Achieving the Quality*, June 2000, pp. 1-2, 11, 23; and Ofwat, *Financial Performance and Expenditure of the Water Companies in England and Wales: 2001-02 Report*, August 2002, p. 9.
117. Environment Agency, *Spotlight on Business Environmental Performance: 2002*, July 2003, p. 27.
118. Ofwat, *Water and Regulation: Facts and Figures*, May 2003.
119. Donna Burnell, ed., *Waterfacts '95* (London: Water Services Association of England and Wales, 1995), p. 35; and Water UK, *Waterfacts '98* (London: Water UK, 1998), p. 46.
120. Institute for Fiscal Studies, "Taxing the Privatised Utilities," *The Economic Review*, Vol. 15, No. 4, April 1998.
121. Ofwat, *Paying By Meter*, Information Note No. 27, November 1995, Revised March 1996.
122. Department of the Environment, Transport and the Regions, *Water Industry Act 1999: Delivering the Government's Objectives*, p. 4.
123. "A dry week for some 6,000 Londoners," *Edie Weekly Summaries*, September 19, 2003.
124. Ofwat, *Water and Regulation: Facts and Figures*, May 2003.
125. Stuart Ogden and Fiona Anderson, "Representing Customers' Interests: The Case of the Privatized Water Industry in England and Wales," *Public Administration*, Vol. 73, Winter 1995, p. 536; Sue Tabb, ed., *Waterfacts '97* (London: Water Services Association of England and Wales, 1997), p. 20; Ofwat, *Summary of the Director General's Annual Report 1997*, June 1998; and Ofwat, *Water and Regulation: Facts and Figures*, May 2003.
126. Alan Booker, Deputy Director General of Ofwat, "British privatization: balancing needs," *AWWA Journal*, March 1994, pp. 61-2.
127. City Editor, "Kelda finds an income stream in a dried-up backwater," *Electronic Telegraph*, June 15, 2000.
128. John Peet, "Priceless: A Survey of Water," *Economist*, July 19, 2003, p. 6.
129. No author, "Water Industry: Frozen Taps," *Economist*, May 31, 2003, p. 56.
130. Anna Peltola, "Simple fixes could bring water to millions, say experts," Reuters, August 13, 2003; and Steven Edwards, "Lack of water threat to peace, prosperity," *National Post*, August 13, 2003.
131. United Nations Economic and Social Council, *Progress Made in Providing Safe Water Supply and Sanitation for All During the 1990s*, Doc. No. E/CN.17/2000/13, March 14, 2000, pp. 7, 13; and Asian Development Bank, "Special Theme: Water in the 21st Century," in *Annual Report 1999*, p. 13.
132. Anna Peltola, "Simple fixes could bring water to millions, say experts," Reuters, August 13, 2003.
133. Kenji Hall, "Tackling world's water crises would cost up to US\$100 billion a year, says U.N. official," Associated Press, March 6, 2003.
134. Carl Myers, "Privatisation: value for money?" *World Water and Environmental Engineering*, March 1997, Volume 20, No. 3, p. 10.

135. World Bank Group, "About contract design for water services," undated [online] [consulted August 27, 2003] <<http://rru.worldbank.org/Resources.asp?results=true&stopicids=33>>
136. Clive Harris, *Private Participation in Infrastructure in Developing Countries: Trends, Impacts, and Policy Lessons*, World Bank Working Paper No. 5, April 2003, p. 10.
137. Kathleen Slattery, "What Went Wrong?" *Annual Privatization Report 2003*, Reason Public Policy Institute, April 2003; William Finnegan, "Leasing the Rain," *New Yorker*, April 8, 2002, pp. 43-53; "Bolivian Water Concession Blows Up," *Public Works Financing*, Volume 140, May 2000, pp. 17-21; and Associated Press, "Bolivia backs off water price increase," *Globe and Mail*, April 11, 2000.
138. Slattery, *Ibid.*; and John Peet, "Priceless: A Survey of Water," *Economist*, July 19, 2003, p. 7.
139. Slattery, *Ibid.*; and Peet, *Ibid.*
140. Madelaine Drohan, "Now they tell us: Privatization is no panacea," *Globe and Mail*, August 6, 2003.
141. Clive Harris, *Private Participation in Infrastructure in Developing Countries: Trends, Impacts, and Policy Lessons*, World Bank Working Paper No. 5, April 2003.
142. Harris, *Ibid.*, pp. 1, 2, 6, 15.
143. Harris, *Ibid.*, pp. 3, 4, 17, 22, 24, 25, 26, 27, 40.
144. Harris, *Ibid.*, pp. 13, 24, 25, 29, 37, 41.
145. Ontario Ministry of the Environment, 2003 News Releases and Media Backgrounders, January 2003 - August 2003 [online] [consulted September 5, 2003] <<http://www.ene.gov.on.ca/envision/news/2003/index.htm>>
146. John Steele (Ontario Ministry of the Environment), Telephone conversation with Elizabeth Brubaker, September 19, 2003.
147. Environment Canada, *Environmental Signals*, Canada's National Environmental Indicator Series, 2003, p. 34.
148. Pollution Watch, "Canadian polluters increased chemical releases by 20% from 1995 to 2001," Press release, June 19, 2003; and PollutionWatch, "Ranking Facilities by Water Releases" [online] [consulted June 19, 2003] <www.pollutionwatch.org>
149. Ontario Ministry of the Environment, 2001 Environmental Compliance Reports [online] [consulted June 4, 2003] <<http://www.ene.gov.on.ca/envision/comp01/index.htm>> As of September 5, 2003, results for 2002 were posted for only six of the 22 district or area offices.
150. Ontario Ministry of the Environment, 2003 News Releases and Media Backgrounders, January 2003 - August 2003 [online] [consulted September 5, 2003] <<http://www.ene.gov.on.ca/envision/news/2003/index.htm>>
151. *R. v. Dawson (City)*, Yukon Territorial Court, Lilles C.J. Terr. Ct., March 5, 2003, [2003] Y.J. No. 22, paras. 46-7. Also see Sarah Elizabeth Brown, "'These charges are serious,' Dawson told," *Whitehorse Star*, March 5, 2003.
152. Judge Stuart, *R. v. United Keno Hill Mines Limited* (1980), 10 C.E.L.R. 43 (Terr. Ct.)
153. Karen Selick, "Economics for sheep: profits are baaad," *Financial Post*, September 4, 2003.

154. Karen Bakker, *Good Governance in Restructuring Water Supply: A Handbook*, Commissioned by the Federation of Canadian Municipalities and the Program on Water Issues at the University of Toronto's Munk Centre for International Studies, July 2003, p. 19.
155. David McDonald, "Water is Life," *Alternatives Journal*, Volume 29, Number 2, Spring 2003, p. 3.
156. Tony Clarke, "Water Privateers," *Alternatives Journal*, Volume 29, Number 2, Spring 2003, p. 11.
157. Karen Bakker, "Liquid Assets," *Alternatives Journal*, Volume 29, Number 2, Spring 2003, p.18.
158. "Water is Life: A Civil Society World Water Vision for Action," Vision statement, March 2003.
159. No author, "Civil Society, Corporate Water at odds over global water future," March 19, 2003 [online] <http://www.blueplanetproject.net/cms_publications/19Mar03_E.pdf>
160. Luci Yamamoto, "No Lying Game," *Public Works Financing*, Volume 170, February 2003, p. 28.
161. *R. v. Dawson (City)*, Yukon Territorial Court, Lilles C.J. Terr. Ct., March 5, 2003, [2003] Y.J. No. 22, para. 53.
162. Adrian Moore, "Stockton – Hardball and Hypocrisy," *Public Works Financing*, Volume 170, February 2003, p. 21.
163. International Consortium of Investigative Journalists, "The Water Barons," Center for Public Integrity, February 2003 [online] [consulted March 3, 2003] <<http://www.icij.org/dtaweb/water>>
164. Karen Bakker, *Good Governance in Restructuring Water Supply: A Handbook*, Commissioned by the Federation of Canadian Municipalities and the Program on Water Issues at the University of Toronto's Munk Centre for International Studies, July 2003, pp. 9, 14, 19.
165. For an extensive discussion of the liability limitations enjoyed by municipal utilities, see Elizabeth Brubaker, "There's Nothing Like a Hanging," Chapter Nine of *Liquid Assets, Privatizing and Regulating Canada's Water Utilities* (Toronto: University of Toronto Centre for Public Management, 2002), pp. 129-45.
166. John Stokes, Meeting with Elizabeth Brubaker and Mark Hudson, February 9, 2001.
167. David Kinnersley, *Coming Clean: The Politics of Water and the Environment* (London: Penguin Books, 1994), p. 53, 204.
168. The Cadmus Group Inc., KPMG LLP, and NuWater Ltd, A Study of Best Practices in the Water and Wastewater Sector: Final Report, Prepared for the Ontario SuperBuild Corporation, April 2002, p. 95.