An Analysis of a Public-Private Sector Partnership:
The Hamilton - Wentworth - Philip Utilities Management Corporation PPP

A Report Prepared for the Canadian Union of Public Employees

September 1999

Revised and updated edition
“Water privatisation is a rip-off, a steal, a plunder, a legalised mugging, piracy, licensed theft, a diabolical liberty, a huge scam, a cheat, a snatch, and a swindle.”

- Richard Freeman, Financial Times, 1996.

This report is an edited and revised version of a report released in January 1999 by David Anderson of McMaster University, entitled, Privatizing Water Treatment: The Hamilton Experience. Revisions and editing were undertaken by Salim Loxley under the supervision of Professor John Loxley of the Department of Economics, University of Manitoba.
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I. SUMMARY OF FINDINGS

WHAT IS IT ABOUT?

- Handing over the operation and maintenance of a publicly owned utility to a private company, Philip Utilities Management Corporation, owned 70% by Philip services and 30% by the Ontario Teachers Pension Plan board.

WHAT KIND OF PPP?

- An operations and maintenance service contract using publicly owned infrastructure.

THE CLAIMS:

- Cost savings
- Improved productivity through technological innovation
- Improved labour relations through successor rights, guarantees and bonuses for cost reductions
- Less political capital spending
- Maintenance of environmental standards
- Economic development promises and guarantees
- Risk transfer
- Proponents call the PPP “a model for re-inventing government and for competing in the new economy”

THE REALITY

- The contract was awarded to PUMC without being publicly tendered.
- PUMC receives the first $1 million on any cost-savings with any extra savings being shared with the Regional Authority on a 60-40 % basis. Gross profits to PUMC are estimated to be $4.8 million per year.
- PUMC’s promised operational cost-savings involved reducing the number of employees by half since 1995. Short-term guarantees were just that. Pressure is being put on remaining personnel to multitask.
Innovation and capital improvements remain the responsibility of the Regional Authority but on the advice of PUMC which stands to gain from any operating efficiencies which might result.

PUMC has claimed a share in cost-savings even when Hamilton-Wentworth Regional Authority initiated them.

There have been serious environmental problems since PUMC took over, the cost of which has been borne by region.

Risk transfer has been minimal.

Senior bureaucrats who were involved in the decision to award the contract to PUMC have left the Hamilton - Wentworth Regional Authority to work for PUMC.

Crucial information is not available to the public. For example, annual performance reviews have not been conducted since 1995, when PUMC failed abysmally.

Philip has moved its head office to Hamilton but has otherwise not delivered on its extensive economic development promises.

PUMC’s parent company, Philip Service, has been so fragile that its performance guarantees of PUMC have meant little. In May 1999, PUMC was bought by Azurix Corp. and is now under foreign ownership and control.

This project raises important ethical questions concerning how employee pension funds are invested.

II. INTRODUCTION

In December 1995, the Regional Municipality of Hamilton-Wentworth signed a ten year, $180 million contract with a new, one year old, company, Philip Utilities Management Corporation (PUMC). The contract transferred responsibility for the operation, management and maintenance of the Region’s water and sewage system to PUMC. When it was signed, the deal was the largest private-public partnership (PPP) agreement of this type in North America.

The PPP approach to doing business is gaining acceptance by governments around the world because of claims that it can deliver infrastructure and services more efficiently and at a lower cost than traditional methods. The trend toward PPPs is also very much a reflection of the fiscal policies that prevail in today’s conservative political climate. However, while the
proponents of PPPs are growing in number and are increasingly outspoken\(^1\), this approach to the provision of public services and infrastructure is also attracting criticism from groups who feel that these projects fall far short of their stated claims and impose more costs than benefits.

Indeed, while it has been hailed as “a model for re-inventing government and for competing in the new economy”, the Hamilton-Wentworth - PUMC arrangement has not been free of controversy. This paper will evaluate the Hamilton-Wentworth - PUMC arrangement in order to shed more light on the PPP approach used in its realization. Assessment of the PPP will be made on the basis of four criteria: 1) efficiency and cost savings; 2) financial risk transfer; 3) environmental risk and quality of service; 4) issues of accountability and transparency; 5) the impact of the project on workers and the community and 6) economic development benefits.

Before presenting the Hamilton-Wentworth - PUMC case study, a brief outline describing the nature of PPPs will be presented below.

III. THE GROWING TREND TOWARDS PUBLIC / PRIVATE PARTNERSHIPS

Facing tighter budgets, public authorities at all levels, from federal and provincial governments, through to civic governments and schools boards, are increasingly looking toward partnerships with the private sector for the provision of infrastructure and services. There are strong pressures from the political right to do so as a means of reducing the scope of government and opening up the public sector to private profit.\(^2\)

The growing popularity of PPPs is unlikely to be a passing fad. One can expect to see more of them, in greater variety, as pressures on public budgets persist and as the private sector begins to appreciate more fully the prospects of making profits through this type of cooperation.

It is important, therefore, that they are subject to close scrutiny so that a proper analysis can be made of their likely impact.

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\(^{1}\) The Canadian Council of Public Private Partnerships is a major advocate for PPPs in Canada

\(^{2}\) Earlier this year, the Canadian Council for Public Private Partnerships published an inventory of over 300 major PPPs in Canada which are being implemented or seriously considered for implementation. Of these, many were in the transportation and waste-water / environment area, but the largest number- nearly one third- were in the broadly defined area of civic services or facilities; from arenas to museums from housing to schools, from civic halls to casinos, from fire fighting to police and correctional services. All levels of government and all provinces and Territories were represented.
IV. TYPES OF PUBLIC / PRIVATE PARTNERSHIPS

Conceptually, one can envisage a continuum of possibilities in terms of private / public sector cooperation in services delivery. (See Figure 1). At one extreme, the public can be fully responsible for all aspects of service delivery or infrastructure provision, while at the other, the private sector could assume these responsibilities. In between, there are varying degrees to which the private sector can be allowed to contribute to services or infrastructure. Ideally, the main goal of PPPs should be to capitalize on the strengths of both parties while minimizing their weaknesses, so that the partnership is mutually beneficial. The wide range of possible types of PPP indicate the perceived different strengths and weaknesses of the two sectors in different parts of the country though, of course, these perceptions are deeply political.

Most archetypal PPP approaches have a number of variations that distinguish them. The Hamilton-Wentworth - PUMC PPP is an example of a Management Contract. This type of arrangement transfers the responsibility for the operation and maintenance of government-owned businesses to the private sector and can range from the performance of simple tasks to more sophisticated contracts such as the Hamilton-Wentworth - PUMC PPP. These generally introduce incentives for increasing efficiency and assign remuneration on the basis of meeting specific performance targets. Ownership of the assets remains with the public sector.

According to a World Bank Tool Kit on PPPs, “Management Contracts are most likely to be useful where the main objective is to rapidly enhance a utility’s technical capacity and its efficiency in performing specific tasks, or to prepare for greater private involvement”. In such PPP arrangements, the government generally remains responsible for any future investments and assumes most of the attendant commercial risks involved in the project.

V. THE PRIVATE SECTOR PARTNER

Philip Utilities Management Corporation (PUMC) was established in 1994 following a merger of its parent company, Philip Services, with the Waste Water Technology Centre, a

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4 Ibid.

5 Ibid
privatized federal research centre. The latter was headed by Stuart Smith, former leader of the Ontario Liberal Party, who went on to assume the Presidency of PUMC.

Philip Services has a 70% share in PUMC while the remaining 30% is held by the Ontario Teachers Pension Plan Board. The majority of its operations are centred within the Hamilton-Wentworth area, which has a population of just under half a million people. In total, PUMC operates 14 municipal water treatment facilities and two industrial pre-treatment wastewater facilities most of which are in the Hamilton-Wentworth area. The company also runs facilities in smaller cities such as Fort Frances, Thamesville, and Chalk River. Philip Utilities also owns Southwest Water, a utility in Texas. It owns the US engineering company, Philip Automation, Subsurface Utilities and is also involved in biosolids disposal or sludge management with such companies as Trimax, Envorganics and Braemar Acres. PUMC has an asset base of some $125 million according to Leo Gohier, Acting Commissioner Regional Environmental Department. However, at the time PUMC won the Hamilton contract it had absolutely no record of running any equivalent sized water facility.

PUMC’S major parent company, Philip Services, is based in Hamilton. It has 12,000 employees world-wide and had revenues of $1.7 billion US in 1998 mainly from waste management and metals recovery. Philip companies also have the contract for blue box processing in the Region and collect garbage for Ancaster, Flamborough and Stoney Creek. It also runs the now infamous Taro landfill sites near Hamilton on which it was found to be dumping toxic sludge from Michigan and hazardous waste from Ontario. However, the company ran into serious financial difficulties in 1998 as a result of extensive borrowing in order to buy up a large number of companies across North America. Philip’s debt rose to an estimated $1.1 billion US and the company was unable to meet payments on this debt or put up an $11.2 million guarantee required by the Ontario government for the operation of the Taro site. In

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6 See [http://www.philiputilities.com](http://www.philiputilities.com)


8 In 1998, Philip announced $346.2 million of write-downs, which cancelled its audited earnings for 1996 and 1997 and resulted in a net loss for 1997. In October 1998, a class action suit by shareholders was launched against Philip in Canada following one in the United States. Through a process which is still being negotiated, lenders are trying to force a restructuring of the company. In November 1998, Philip Services announced a 3rd
May, 1999, Philip services sold its 68 per cent interest in Philip Utilities to Azurix Corp. an affiliate of Enron Corp. of Houston Texas for $70 million.\(^9\)

**VI. THE HAMILTON-WENTWORTH - PUMC PPP AGREEMENT**

The contract between the Regional Municipality of Hamilton-Wentworth and PUMC was initiated by way of an unsolicited proposal by PUMC and its President, Stuart Smith, former leader of the provincial Liberal Party. In arriving at its decision to engage in a deal with PUMC, the Regional Authority (RA) chose not to consult the general public.

The contract, dated December 30, 1994, was drawn up between The Regional Municipality of Hamilton-Wentworth, PUMC and Philip Services (under its previous name, Philip Environmental Inc.). It transferred the operation, management and maintenance of the RA’s water and sewage plants to PUMC for a 10-year period. This gave PUMC control of the municipally-owned water treatment plant and three waste water treatment plants (Woodward the largest one, Dundas and Waterdown) as well as 129 pumping and outstations.

The contract stipulates that PUMC will be paid an annual fee of $18.6 million which is based on the RA’s previous budget for services. PUMC’s actual compensation is $17.9m, which is the fee less $0.5 million of cost savings in water treatment to the RA and $0.2 million for a contract administrator. The $0.5 million figure was based on taking the RA’s previous annual budget and then establishing a basic savings to the municipality.

PUMC’s incentive is a monetary one. If the company generates additional cost savings, these will be shared on a 40 / 60 % ratio between the RA and PUMC respectively. After the savings reach 20% of the annual budget PUMC’s rate rises to 80%. The company is also allowed to keep the first $1 million in savings indexed to the CPI (Article 5). Further savings

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were also to be made by massive upgrading and automating of the system, with the RA
promising to make investments of some $40 - 45 million by 2002.10

PUMC agreed to keep all jobs for the first 18 months in addition to respecting successor
rights legislation. It signed agreements with the two unions representing workers involved in
the operation of the facilities, the International Union of Operating Engineers, which represented
the majority of the workers (about 120) and CUPE, which represented about 5 people on the
workforce. This protected other union agreements concerning salaries, wages and benefits. In
addition, workers were offered an equal 10% share in expenditure reductions.

Employment opportunities were guaranteed by a commitment from PUMC’s parent
company, Philip Services, to create 100 new jobs somewhere in the RA over the next five years.
PUMC promises to pay $1 million, or $10,000 for each job Philip does not create.

Finally, Philip Services, the parent company, guarantees the overall contract
performance. However, according to Section 3:04, Philip is exempt from any liability if not
meeting the contract is linked to such factors as:

- quality or quantity of the influent
- limits of the capacity of the facilities
- RA’s failure to make capital, regulatory or emergency expenditures
- operating parameters of the outstations

VII. EVALUATING THE HAMILTON-WENTWORTH - PUMC PPP

In their own assessment of the benefits of PPPs, PUMC argues that privatization:

- creates an economical, cost-effective means of providing treatment services
- is the most cost-effective means of providing capital improvements to facilities
- allows access to financial resources
- allows access to new technologies
- creates operating efficiencies
- transfers risk / responsibility to the contractor
- enhances water quality and protects the environment

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10 Leo Gohier “What Did We Do?” at the “Forming Successful Public Private Partnerships” Toronto May 1997
fills the gap created by downsizing of government operations.\textsuperscript{11}

The following section will attempt to determine the extent to which this list represents the reality of the Hamilton-Wentworth - PUMC PPP.

\textbf{VII (1). EFFICIENCY AND COST SAVINGS}

As mentioned above, PUMC is entitled to make $1 million plus 60-80\% of any cost savings. On the other hand, the municipality benefits from an initial payment of $500,000 from PUMC plus 40-20\% of any cost savings. Thus, the lion’s share of any savings accrue to PUMC and increasingly so as time goes by.

PPP advocates argue that the advantage of many PPPs is that the private sector takes care of borrowing requirements for the project. This is not the case in the Hamilton-Wentworth - PUMC PPP. In this particular PPP arrangement, the RA is responsible for all capital expenditures while PUMC is only obligated to cover costs relating to maintenance.\textsuperscript{12} However, the contract contains an extraordinary clause which stipulates that the RA must take responsibility for any maintenance costs over and above the sum of $10,000 per year.\textsuperscript{13}

With respect to capital costs, Hamilton’s waste water structure has not had a major renewal since the 1970’s and is in need of major upgrading and automation of many operations.\textsuperscript{14} Given this fact, the contract stipulates that it will be the taxpayers who will ultimately provide the funding for any new capital and technological expenditures. PUMC, on the other hand will be able to take advantage of these increases in system efficiency, and, according to the PPP agreement, will be able claim the profits from running an upgraded system, for which taxpayers have paid.

This aspect of the contract is clearly a weakness and has already led to disagreements between the RA and PUMC. Indeed, in October 1995, annual savings of some $2.5 million were

\begin{itemize}
  \item \textsuperscript{11} From PUMC web site http://www.philiputilities.com/
  \item \textsuperscript{12} The RA did attempt, albeit unsuccessfully, to privatize capital development for sewage treatment through a share offering with RBC Dominion Securities. The Province disallowed the scheme.
  \item \textsuperscript{13} (Article 4:05 2)
  \item \textsuperscript{14} Klaus Stolch, PUMC Manager of the Woodward Plant
\end{itemize}
realized as a result of a proposed energy transfer from the Region’s solid waste incinerator to the sewage treatment plant. Philip layed claim to this amount but the RA disagreed, since the transfer of energy and with it, the accompanying cost savings, were a direct result of an $8 million expenditure to make the transfer possible.15 Three months later, the RA closed down a sludge incinerator at a PUMC - run plant because it required $10 million in repairs. PUMC began trucking the sludge to a landfill site saving $60 a ton on a daily production of some 150 tons. Philip received 60% of the savings and the RA 40%16.

Financially, PUMC is not inspiring confidence given that it has been consistently late in filing its financial statements.17 Consequently, as of January 1999, the RA has not benefited from any further cost savings. Furthermore, according to Marvin Caplan, City councillor, PUMC has paid no taxes to the RA for a number of years.18 The sum is worth several hundred thousand dollars. While the RA receives audited financial statements from PUMC, these are not made public. As a result, neither elected officials nor the public have any financial measure of how their money, some $18 million per year, is being used.

VII (2). FINANCIAL RISK TRANSFER

Risk, in the context of a capital project, is a situation of potential loss of investment resulting from operating in an uncertain business environment.19 Risk transfer is touted as one of the principal benefits of most PPPs because it allows one party to concentrate on those risks that it is better equipped to manage while passing off to another party those risks that it might not handle as well. In theory, the end result is supposed to be an increase in specialization and efficiency although this doesn’t always follow.

15 Peters, Ken, “Region, Philip have $25-million spat”, The Hamilton Spectator, Oct 11/95


18 Telephone interview Dec 29/98

There are a number of financial risks inherent in the operation and maintenance of a water utility. The more important ones of these include:

A) DESIGN RISK

This type of risk entails the costs and responsibilities that would accompany the design of a particular capital project. A faulty design can complicate or delay construction or prejudice ongoing operations and this usually has financial implications.

B) CONSTRUCTION / IMPLEMENTATION RISKS

This category of risk generally involves additional costs related to the building and operating of a capital project such as equipment, labour, time delays and maintenance costs.

C) FINANCING AND OPERATING RISKS

Financing and operating risks can involve interest rate fluctuations and ownership liabilities as well as property and operating risks associated with inflation and/or maintenance costs.20

With respect to design and construction risk it is clear that the RA bears the full burden of these risks. While PUMC is responsible for maintenance of the facility, this responsibility is one which is limited to a maximum value of $10,000 per year. Thus, the RA bears a burden of risk vis a vis maintenance as well. Finally, given that the RA still owns the utilities and is responsible for arranging financing for any upgrades to these facilities, the RA, then, bears the finance risk.

The problem with PPPs is that private companies are inherently unstable. Indeed, changes in ownership and the performance of management and competition can damage or sink a private company at any time. Such companies are also open to foreign take-over. All these factors are magnified in the case of PUMC and expose the RA to potential risks.

Not only is the danger of instability present, but due to the major financial problems of PUMC’s parent company, the situation (until the recent sale to Azurix) was even more unstable. Not a week went by without stories on the restructuring of the parent company and its financial problems appearing in the news, but the implications of any restructuring or bankruptcy for any of Philips’ subsidiaries was quite unknown. Clearly, the RA faced new types of financial and

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operating risks from the instability of its private partner which it would not have faced had it
continued to operate the utility itself.

VII (3). ENVIRONMENTAL RISK AND QUALITY OF SERVICE

While Philip Services, the parent company, has guaranteed the overall contract
performance of PUMC, its list of exemptions from liability (see above) are considerable and fail
to inspire confidence. Experience has also shown that they make it difficult to hold PUMC
responsible for any important accident. Environmental risk has not, therefore, been shifted to the
private sector partner.

Indeed, PUMC’s service record to date has been very poor. In January 1996, a major
spill occurred at the main pumping station at the sewage plant under Philip control. In this
accident, the worst disaster ever to affect the system, 180 million litres of raw sewage were
spilled into Hamilton harbour and surrounding areas. More than 115 houses and businesses were
flooded in the Stoney Creek area. In September 1996, a report by Rand Rosell of the RA’s legal
department said PUMC was responsible for the spill. Filer Consultants put the blame on
mechanical and operational failure caused by PUMC not the RA.21

While Philip was held responsible by an outside consultan’s report, the RA ultimately
had to pay for all damages. The total compensation paid out by the RA has not been published
but was likely a considerable sum of money. Remarkably, the Ministry of the Environment, said
it would not sue because the damages were internal to homes and not external to the
environment.22 PUMC later gave $27,000 to the Bay Area Restoration Council as a partial
means of repairing damage after the spill once the provincial government decided it could not
win the case against PUMC.23

The PUMC/Hamilton deal has also not resulted in any major improvements to the
environmental situation of water and waste water in Hamilton. Instead under PUMC


22 A number of other spills have occurred since Philip took over including one at Henderson Hospital in,
one at Dundas, one at Waterdown on September 15, 1998.

The Hamilton Spectator, Feb, 1998
management many serious environmental problems have remained unsolved. PUMC has often failed to meet governmental or RAP (Remedial Action Plan) standards for discharges of effluent. 

**Drinking water and sewage discharge**

While both the RA and the Ministry claim Hamilton drinking water meets all provincial standards, there have been no published documents analysing the testing done over the years to see how the quality varies. As a result one cannot decisively prove that Hamilton drinking water is any worse than in the past. Taste, however, appears to be a concern. At a meeting on January 12, the RA admitted as much by ordering a $50,000 feasibility study to attempt to improve water quality in taste and odour.24

Does the PUMC management of discharges contribute to this situation? One cannot but make the connection. Hamilton is one of the few cities in Canada with a single sewer system in which sewage and storm run-off flow through the same pipe. This runs into harbour and then Lake Ontario following treatment by PUMC at its waste water treatment plants. However, the reality is that an estimated 4.33 billion litres of untreated sewage flows into the harbour area each year25. A large part of this untreated flow comes from PUMC administered operations. Even the treated effluent from these plants often falls below government standards.

**Growing Levels of Ammonia**

Hamilton Bay water contains high levels of phosphorous and ammonia which contribute to poor water quality. This has been documented by the Remedial Action Plan (RAP) and Bay Area Restoration Council (BARC) organizations.26 According to Marilyn Baxter of the Bay Area Restoration Council, 80% of this contamination comes from the Woodward Avenue

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25 One of the major reasons for the contamination is that during intense wet, snow melts, or storm periods, the Hamilton system cannot handle the flow of waste water. The CSO (combined sewer overflows) holding tanks cannot handle the overflow either. In 1997 untreated sewage and run-off bypassed the plant entirely for 267 hours (more than 11 days). This sewage flowed directly into the harbour. This astounding figure was revealed for the first time at the January meeting of the Regional Environment Services Committee. In addition, some waste water is diverted once inside the plant system and does not receive the full plant treatment. This amounted to 0.1% of the total of Woodward Avenue flow. This has occurred both prior to and since 1997. McNeil, Mark, “Region’s aging sewage system slowing harbour restoration”, *The Hamilton Spectator*, Dec 6/97

26 See RAP and BARC 1998 reports in Bibliography
Treatment Plant. According to the Remedial Action Plan, the Woodward Avenue Plant is not yet meeting RAP targets.

While the unmet targets for phosphorus seem within reach, the ammonia targets of 2,270 kg have been exceeded with actual readings of 5,000 kg per day and climbing. Ammonia is added to waste water during the treatment process and these levels have increased since privatization.27

**PUMC Does Not Meet Targets**

PUMC’s sewage treatment plants are subject to Certificates of Approval (Cof A) rates which are set by the province. They are also subject to baseline performance criteria (BPC) for effluent quality after treatment which are set by the RA and are contained in its contract with PUMC. The RA’s BPC standards are superior to the provincial C of A ones.

In at least nine months, PUMC’s average effluent quality exceeded the BPC. At the Woodward Plant, in at least one month in 1998 (October according to the RA) and perhaps more according to the Ministry of the Environment, these C of A minimum standards were not met in terms of effluent quality in Suspended Solids (SS). For total phosphorus content here again the average exceeded the BPC over almost four years. In at least 8 months these standards were surpassed considerably.

For 1998 the average SS, and total Phosphorus effluent content exceeded the Baseline Performance Criteria but did meet the C of A limits for the year. C of A levels in SS were also exceeded twice at the Dundas plant in 1996 and three times in 1997.28 As well, Dundas and Waterdown had high phosphorus levels in 1998.

Local 772 of the IUOE sent a letter to the Ministry of the Environment in November 1998 which noted that the Woodward Avenue Plant had been in violation of its Certificate of Approval for 4 months in 1997 and in October and possibly November of 1998. The Ministry declined to investigate, as it believes the plant is “working on the problem”.29

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28 Ibid.

29 Buist, Steve, “N investigation at Woodward Avenue Plant”, *The Hamilton Spectator*, Nov 28/98, p.A4

As if the environmental problems in PUMC operations are not enough, other Philip companies have also been contributing to the poor waste water situation. Philip Services also runs the Taro West Landfill site (now closed).
Fixing the environment is not a short-term issue, but private companies usually function with short term goals of profitability and these goals often result in flagrant disregard for the environment. For society, however, a healthy environment is worth the price even if it means incurring costs in the short term. Public services are much more able to make these kinds of choices than private companies. Some observers feel that PUMC is choosing to operate at a much higher level of risk of environmental problems in order to reduce cost and increase its profits and a major influence in its decision to act this way is that PUMC derives the bulk of the benefits of cost reduction (in effect ‘labour’ reduction!) Meanwhile, the RA bears any financial consequences of the increased risk of damage to the environment.

The experience of privatization of the operations of utilities shows us that an independent and strong regulatory body is needed. Thus, the CRTC is considered an essential body for regulating the communications sector in Canada. When the regulatory body is weak, as was the case with OFWAT, the water regulatory agency in Britain, or non-existent as is the case in Hamilton, the PPP process is even less sensitive to meeting public needs and less open to transparency and public accountability.

VII (4). ISSUES OF ACCOUNTABILITY AND TRANSPARENCY

Perhaps the most disturbing element of the Hamilton-Wentworth - PUMC PPP is its apparent lack of accountability to the public. Private companies are not required to be transparent about their financial situations and are, nevertheless, reticent to publish their financial or operational dealings which they see as a proprietary or competitive issues.

which poured 430 million litres of leachate per year into the sewer system. This leachate contained toxic compounds like benzene and phenols. Philip paid a special surcharge to the RA for dumping directly into the sewer system. Since some of the chemicals in the leachate could not be treated by the Woodward Avenue Plant - into which they flowed - they were simply discharged directly into Hamilton Harbour. Taro contributed 1,000 tonnes out of 15,000 tonnes of calcium chloride dumped into the Bay via the Woodward Avenue Plant. In 1993, Philip had agreed to build a leachate pollution treatment plant for Taro for $8.6 million but this was never done. Instead of the plant, Philip offered $1 m to retrofit RA salters in a deal which it said would save the RA $.5 million per year in wasted salt. The RA concluded it could make this change itself without Philip. The RA voted to end Philip’s special dumping rights practice on November 10, 1998. However it later gave Philip a four month extension until March 1999 meaning that the leachate could be continued to be dumped into the sewer system to that date. Lee Prokaska, “Council gives Taro 4 months to work out leachate deal”, The Hamilton Spectator, Nov 18/98 pA3
Indeed, in the case of the Hamilton-Wentworth - PUMC PPP the reporting criteria to the RA and the Ministry of Environment are very vague. When public operations are privatized, as is the case in Hamilton, the need for provincial regulation is even more essential. This, however, does not seem to have been recognized in Hamilton-Wentworth - PUMC PPP. No quarterly or monthly reports are required although the Ministry revealed in an interview that spills must be reported immediately. Public reporting criteria is non-existent. The contract does not specify that Philip or the RA has to address the issue of public access to information. There are no clauses in the contract which mandate regular consultation with the public. The contract itself was awarded to PUMC without being tendered publicly. This in itself was highly unusual and was justified because of the supposed economic development potential of the PUMC deal, which are discussed later.

While the contract contains a requirement for an annual performance review (Article 17) there is no stipulation that this review should be made public. Instead, the 1995 review was only obtained by the IUOE under the Freedom of Information Act in the fall of 1998. In it, the RA Contract Co-ordinator notes that, on most issues, PUMC’s performance in the first year, on a scale of 1 to 4 is a ‘1’. In other words it is inadequate.

**The municipal elections and Philip companies**

Quebec long ago outlawed the practice of corporate donations at the provincial or municipal level. The practice of corporate donations opens the door to the potential for corruption or for the appearance of influence pedalling. The practice is even more dangerous when the donors are corporations involved in private public partnerships.

In the case of Hamilton, while PUMC itself has not been active, Philip has been a major contributor to candidates in the municipal elections. Philip ranked 10th in total contributions to candidates in 1994. Did contributions from Philip (ranging from $250-500 or so) “buy off”

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30 The Ministry of the Environment has lost some 1,000 employees out of 2,400 since 1995. Under these austere conditions one wonders whether or not the Ministry can perform its functions in an adequate manner.

31 John Percy, Ministry of the Environment interview January 1999

32 This information is publicly available from the Clerk’s Office on the Second Floor of the City Hall. I gathered the 1997 figures and Don McLean the 1994 ones.
candidates in the municipal elections? Arguably not. While this practice is perfectly legal in Ontario, it is nevertheless a disturbing one especially since the benefactors are striving to make in-roads into the private provision of public services in Canada. Such practices are hostile to the fostering of a transparent democratic process.\textsuperscript{33}

**Foreign ownership potential**

Privatization also opens the road to foreign ownership and this too raises further questions of transparency and accountability. Philip Services’ stock is traded on the New York Stock Exchange and is probably foreign owned to a large degree. CN Rail is an example of a privatised company where majority ownership now resides in the USA. This is an inevitable result for any widely traded private company. Philip started in Hamilton but sold shares on the international market. If a public service is privatized when the privatiser is foreign owned, the possibility exists that the ultimate decision making will no longer exist in the same country let alone the same town! (This was written before the takeover by Azurix Corp. Foreign ownership is now a reality!)

**VII (5). IMPACT ON WORKERS AND THE COMMUNITY**

The facilities were represented by two unions. The bulk of the employees, some 120, were members of the International Union of Operating Engineers which initially endorsed the project. CUPE represented 5 employees and was against the project from the very beginning. The agreement stipulated that Philip Services (not PUMC) would guarantee employment opportunities by creating 100 new jobs somewhere in the RA over five years. PUMC promised to pay $1 million, or $10,000 for each job Philip did not create. Furthermore, workers were offered an equal 10% share in any expenditure reductions.

There are only two major ways to bring about more efficiency in water treatment plants. The first way involves updating and upgrading the capital equipment. The second way involves downsizing the number of employees doing the same work. The cost of wages and benefits was around $6 million and salaries were about $1.2 million. This amounts to about $7 million of a total budget of $18 million in 1995.

\textsuperscript{33} Here is the total list for 1994
Obviously, by reducing this amount PUMC would stand to make a considerable profit on operations at a rate of 60 - 80% after $1 million. Indeed, from September 1995, PUMC’s attitude toward labour began to change. In April 1996 layoffs began. Philip cut some 60 of the 120 or so workers leaving 58 staff including management by the end of 1999. No CUPE members will remain beyond the end of 1999. There were also 19 vacant positions at the operations when PUMC took over. These positions were never filled.

The rosy view on which the privatization was sold to one of the unions was that there would be more advantages for workers in a large multinational, as it set out to conquer or at least compete in the North American water market. A more cynical viewpoint of the RA’s handling of this issue would say that the service was privatized in order for the RA to avoid having to do the cost-saving lay-offs associated with automation or pay decent lay-off compensation. PUMC is paying those laid-off workers the strict minimum of one week’s pay for one year’s work, for those with over five years seniority. In other words, workers bore the brunt of the savings cuts and have no job guarantees or decent severance packages in the agreement.

Philip’s termination of 60 jobs is in keeping with the practices of other private companies in the water sector. In England and Wales, in the 10 privatised water authorities jobs went from 53,524 in 1985 to 46,728 in 1989.\textsuperscript{34} The number has since fallen even lower by 4,951 from 1989-1994.\textsuperscript{35} Overall, the water industry in England made nearly £2 billion profits in 1997, compared to £1 billion in 1991.\textsuperscript{36}

Another approach used by private companies to maximize their benefits from labour is to enforce flexibility and multi-tasking. The mantra of one of the major privatised water companies in England is that they “will require all employees to work with complete job flexibility around the principle that everyone should be contracted to perform whatever duties are within their capability wherever required to do so”.\textsuperscript{37} The key here is increasing flexibility, eliminating

\footnotesize{\textsuperscript{34} Stuart Ogden, The Reconstruction of Industrial Relations in the Privatized Water Industry, British Journal of Industrial Relations March 1994

\textsuperscript{35} Daily Mirror July 29, 1994, p7

\textsuperscript{36} BBC Waterweek site at http://news.bbc.co.uk/hi/english/sttic/waterweek/issues01.html

\textsuperscript{37} ibid}
trades and broadening job definitions. As the Director of Philip Utilities operations pointed out, there is no point in sending a cleaning person to one of the pumping stations which PUMC runs when something technical has to be adjusted. The maintenance person can also do the cleaning!\(^{38}\)

PUMC is attempting to multitask and multiskill most jobs. The CUPE jobs in administration and in cleaning are all being eliminated. These functions will be transferred to management or head office or in the case of cleaning simply ‘multitasker’ on to other employees.

**Musical chairs**

The problems with privatisation and PPPs are not limited to concerns with quality of service of the quality of jobs and work. Privatisation brings its own special problems to municipal services and politics. Any privatisation deal automatically includes the transfer of employees from the public sector to the private sector. However, in the case of Philip, this was not only those who were directly involved in the wastewater operations. Many knowledgeable upper level civil servants not directly related to the day to day functioning of the system also moved to the private sector.

The following management staff of the RA that helped negotiate the initial contract also moved to Philip:

- Jim Halliday, Senior Environment Director of the RA went to Philip in 1996 as water treatment superintendent.
- Teresa Gregoroff moved from Finance Director at the RA to Executive Assistant to the Vice-President of Investor Relations at Philip.
- Lora Fontana moved from being the Director of Human Resources at Hamilton Street Railways to Director of Labour Relations at PUMC.
- Jeff McIntyre moved from training for the RA to training for Philip and back to the RA to the RA’s water control Technology division.
- Tan Spencer who had been a long time Commissioner of Engineering with the RA but who had most recently been in the Peel Region public service moved to Chief Operating Officer of PUMC and is now Senior Vice-President of PUMC.

\(^{38}\) Klaus Stolch in conversation at Local 167 on December 15/98
These developments tend to deflate the widely held precept that the public sector needs the business expertise of the private sector to better run its services and that is why this kind of deal is necessary. In the case of PUMC, ironically, much of that “new expertise” seems to be the same people who ran the public system! The back and forth between public and private, but mainly public to private, blurs the important line that should exist between civil servants who represent the public good business people who have their own private and profit-driven interests at heart. Important issues of transparency and accountability are again raised here. Having said this, no one, least of all public sector unions, would argue that public institutions are model employers. However, the unionisation rate in the public sector in Canada is over 60%; in the private sector, it is around 20%. Private sector employers take over a publicly run operation with the goal of reducing costs, partly, at least, through layoffs and by negotiating a cheaper contract. This is no secret.

VII (6). ECONOMIC DEVELOPMENT BENEFITS

One of the reasons there was no tendering for this contract was that Philip was a local company which, with assistance from the RA, could become a national or global leader in this field bringing significant economic development benefits to the Hamilton-Wentworth region. As Leo Gohier said, “The basis of the negotiations was essentially to develop a contract that would allow a local firm to develop expertise and experience in the contract operations of a major municipality’s water and waste water facilities, while providing the RA with a vehicle for economic development”. For example, the RA was intent on helping Philip obtain export contracts (Article 12) by assisting it on trade missions. In the same article, Philip promised to develop an environmental enterprise centre, establish an international training centre with Mohawk College, spend $15 million on new capital projects over five years, build a new head office building and even collaborate with McMaster University! As of writing, the only one of these initiatives that had been realized was the moving of Philip’s head office to Hamilton. However, rather than investing in a new building, the RA allowed PUMC to renovate existing office space.39

VIII. WHAT'S IN IT FOR THE PRIVATE SECTOR?
In the conclusion to the recently obtained 1995 performance review, the Contract Co-ordinator states:

In general, the performance of PUMC during its first year of contract operations has been significantly below expectations. The relationship has been consistently confrontational, difficult, tense and frustrating. In our opinion, PUMC’s focus on this contract has been changing from a cooperative spirit of business development and economic development to one of profitability only. We recognize that there have been a number of personnel changes within the PUMC organization; however, there still must be acceptance of the fact that the facility is publicly owned and with that form of ownership comes a unique responsibility towards sensitive management.  

By its very nature, a private company has different goals than a public authority. The main aim or a private company is to achieve maximum profits for its shareholders; the main goal of a public authority is to provide public service to citizens. No matter how efficient and how upstanding a private company is, any public service component can only be a secondary goal. When the company can make more money by a new process then perhaps it will be implemented; if that process costs too much then the company will either forego it or force the public sector to pay for it. The PUMC track record on quality speaks for itself. But how profitable has the deal been for Philip?

In a press release on January 29, 1999, the Region argued that taxpayers had been guaranteed annual savings of $2 million, ‘that have been reinvested in the maintenance of public infrastructure’. Using this number and the compensation details in the contract, it is possible to estimate the gross profit earned by Philip. The first $0.5 million in savings was written into the original contract as payable to the RA. Philip keep the first $1 million in savings on top of that. Thereafter, the company retains 60 per cent of any further savings until savings reach 20 per cent of the annual budget after which Philip retain 80 per cent of savings. Since 20 per cent savings would equal about $3.72 million, this suggests that Philip is making at least $4.78 million a year on the deal. This also suggests that the budget for these operations has been cut by $4.78m +

40 Performance Appraisal of the Philip Utilities Management Corporation, January 1, 1995 to December 31, 1995
41 This is arrived at as follows: Savings to the RA of $2m a year suggest that total savings are well in
$2m = $6.8m or by 37% of its 1995 level. Little wonder that the workforce has been decimated to the point where environmental standards cannot be met.

IX. ETHICAL INVESTMENT CONCERNS

Their investment in PUMC puts the teachers’ unions in Ontario in an extremely contradictory situation. On the one hand, they are trying to defend public education from privatization while, on the other hand, one of the companies in which their own pension fund is a major investor is seeking to dismantle this same public sector at the municipal level. Unfortunately, given the way in which pension funds are administered, the unions themselves have no direct say and the government appointed administrators claim to be following rules of financial prudence and due diligence. Leaders of the Ontario teachers have been quite incensed by the decision of their trustees to invest in PUMC, but their protests have been to no avail. They claim that the $20 million investment is negligible in the scheme of things, their pension funds now reaching about $60 billion. This particular situation, of workers’ money being used to promote privatization and the laying off of other workers, is but one of many ethical dilemmas arising in the investment of workers’ pension funds and, as Jim Stanford has argued, there are no simple answers. What is clear, however, is that workers ought to have a direct say in how their pension funds are invested and the option of declining certain investments which do not meet pre-determined ethical criteria, recognizing that this may well reduce the financial returns to and therefore the growth of their funds.

X. CONCLUSIONS

As was shown above, none of the major selling points which PUMC and Philip Service promised the RA, have been met, with the exception of the headquarters move. The cost savings excess of $3.72m or 20% of the original budget. On the first $1.5m in savings, $0.5m accrues to the RA and $1m to PUMC. On the balance of the first 20% savings ($3.72-1.5m = $2.22m), PUMC retain 60% or $1.332m and the RA retain 40% or $0.888m. If the RA has saved $2m in total, it means that the balance of its savings come from 20% of $2m-0.5m-0.888m = $0.612m. If the RA gains $0.612m on 20% of additional savings, then PUMC gains $0.612/0.4 = $2.448m on this portion. Total returns to PUMC = $1m + $1.332 + 2.448 = $4.78m.


that were meant to be achieved came at the expense of half the utility’s labour force and more recently PUMC has not even bothered to file its taxes or report its financial position to the RA. PUMC has assumed a minimal amount of risk in this operation and has made significant profits while its operations continue to pose a risk to the environment. It is clear that the Hamilton-Wentworth - PUMC PPP is not a good agreement for the people of Hamilton - Wentworth or for the environment.

Given the trend toward PPPs in Canada the poor record of the PPP in question does not inspire confidence about the possibility of other PPPs in the provision of public sector services. There are, however, still considerable benefits to the traditional approach to infrastructure and service delivery and not every government is leaning toward the PPP approach. York RA was rumoured to have done a major privatisation deal with Consumer Utilities but in fact, the deal turned out to be much more limited. York did not go private because in the York case it was shown that a public sector company can raise debt more cheaply than can a private sector corporation. York RA was also exempt from numerous taxes such as the GST and in looking at the PPP option it was discovered that, unlike municipalities, private companies cannot collect development charges.

44 With respect to the Hamilton - Wentworth Regional Authority, the RA could definitely have modernised, saved money and kept the contract in the public sector. Regional Authorities all across Ontario, from Halton right next door to Ottawa, have cut annual costs by modernising the infrastructure but at heavy cost in terms of investment. Ottawa spent some $300 million on a state of the art plant. The modernisation that Hamilton needs is, likewise, not cheap and automation of certain operations could certainly mean fewer employees are needed to do the same tasks. However, in the public service, workers could be re-trained for other jobs, bump for other positions or, as a last resort, receive decent severance packages. In the end, a publicly controlled situation would have been cheaper as all the future benefits of the capital spending would go to the RA, whereas under the Philip deal, the private sector gains the lion’s share of any cost savings, whatever their origin. Perhaps in recognition of this reality, in December, 1998 Peel RA chose the publicly-owned Ontario Clean Water Agency (OCWA) to manage its water operations over a number of private bidders, including PUMC.

44 Global Water Report May 23, 1997 “Fast Track turns into Rocky Road in Canada”
This does not mean, however, that PPPs are not a continual threat to public sector employees and citizens in general especially with regard to water provision. OCWA, the provincially-owned water agency is once again (March 19998) on the block for possible privatisation, according to Rob Sampson of the Office of Privatization in Ontario. In Moncton, the US Filter led consortium, Greater Moncton Water Ltd., is building a $23.1 million plant that it would then run. At the same time, the company is trying to receive a special exemption from paying the GST.

The continued threat of PPPs inspires the question: What can be done?

XI. RECOMMENDATIONS

1. The RA should examine how to break the contract and re-instate public management, as is the case in the overwhelming majority of Ontario cities. Articles 18 and 11 of the contract allow the RA to terminate the contract if PUMC or Philip Services defaults by a series of measures such as “stops making payments to its creditors in the ordinary course of business” or any proceedings relating to bankruptcy or insolvency. In other words, the grounds are already there for the RA to break the contact and move back to being a public manager.

This is the RA’s chance to admit that the deal has been a failure and that, rather than an example to follow for the future, the Philip contract has been a costly mistake for all concerned.

2. The RA should, in the mean time, appoint an independent regulatory body composed of independent observers to monitor and examine contract compliance in a public and transparent fashion.

3. No more privatizations should be contemplated without a full public discussion and an election on the issue. Then, if the proposal is approved, there must be a full public tendering process.

4. The immediate publication of all financial items related to the PUMC contract including the audited PUMC annual statements.

5. Companies which are the subject of RA or City contracts should not be permitted to contribute financially to campaigns of municipal candidates.

6. All laid off workers at PUMC should be given a decent severance package paid for out of Philip profits from the cuts.

7. The annual reports on contract compliance should be re-stated and the missing years 1996, 1997, and 1998 produced and released.

8. The contract and all subsequent changes should be published.

9. All information regarding drinking water and effluent quality, content and changes, and all information on spills should be made public on a monthly basis.

10. The quality of Hamilton’s water and wastewater should be benchmarked against other large Ontario Regions and published on a regular basis.
XII. FIGURE 1

The following diagram illustrates the spectrum from little to overwhelming corporate involvement in the public sector.
XIII. BIBLIOGRAPHY

AMSA, “Evaluating Privatization”, an AMSA checklist

Arnold, Steve, “Philip wrong not to tell region about job cuts: Morrow” *The Hamilton Spectator*, Apr, 6, 1996


Bernadetti, Paul, “Homeowner hoping he can flush sewer decision”, *The Hamilton Spectator*, Mar. 6, 1997


Buist, Steve “Phillip crisis has become political football”, *The Hamilton Spectator*, Nov. 14, 1998


Buist, Steve, “No investigation at Woodward Avenue Plant”, *The Hamilton Spectator*, Nov 28/98, p.A4

Buist, Steve “Region may dump Philip’s Taro Sewage deal”, *The Hamilton Spectator*, Nov. 17, 1998, p. A8

Burman, John, “Phillip loses $1billion”, *The Hamilton Spectator*, Nov. 14, 1998

Burman, John, “Phillip’s fate on table”, *The Hamilton Spectator*, Nov. 18, 1998, p. c6


Canadian Centre for Policy Alternatives, *The Cost of Privatisation: Olsten Corporation and the Crisis in American For-profit Home Care*.


D’Angelo, Carmen “Phillip should live up to landfill site commitments”, September 29, 1998

Davison, Mike, “You can see it doesn’t always pay to pare the payroll”, *The Hamilton Spectator*, Oct. 20, 1995

*Daily Mirror* July 29, 1994, p7


Davy, Denise, “Homeowners cry foul over sewage flood”, *The Hamilton Spectator*, Jan 22, 1996

Dobbin, Murray. *In Defence of Public Services: Preserving the dream of a just society*. Canadian Centre for Policy Alternatives, Ottawa


Dreschel, Andrew, “Uncharted Waters”, *The Hamilton Spectator* May 6, 1996


Formo, Tony. Deputation Bill 107, Given to the Standing Committee on General Government Conducting hearings on the Water and Sewage Services Improvement Act, April 15, 1997

Freeman, Richard, “Privatisation of water is thievery”, In Executive Intelligence Review, November 8, 1998


Global Water Report May 23, 1997 “Fast Track turns into Rocky Road in Canada”


Gohier, Leo, “What Did We Do?” at the “Forming Successful Public Private Partnerships” Toronto May 1997


Goudriaan, Jan-Willem and David Hall. The Problems with Privatising Water: Private Companies rife with corruption, incompetence. 1997


Gray, Barry “Environmental Assessment has few fans”, The Hamilton Spectator, May 6, 1996


Hughes, Rick, “Region balks at expense of sweeter water”, The Hamilton Spectator

Hughes, Rick, “Suspect sludge had exemption”, The Hamilton Spectator, Nov. 6, 1998


Laxer, James. “Don’t let Harris dry up public waterworks” *The Toronto Star*, November 11, 1996, A 15


Loft, Fred, “Region should not pay sewer damage”, *The Hamilton Spectator*, Feb.2, 1996


Ontario Public Service Employees Union, *Your Water Works: Should Foreign Corporations Profit from Peel Region’s Water Supply?*


Peters, Ken, “Region, Phillip have $25 million spat”, *The Hamilton Spectator*, Oct. 11, 1995

Peters, Ken “ Sewage can mean cold cash”, *The Hamilton Spectator*, Dec. 19, 1995


Pettapiece, Mike, “Embattled Phillip appoints two new directors”, *The Hamilton Spectator*, Nov. 25, 1998


Poiling, Jim, “Region has Phillip options”, *The Hamilton Spectator*, Nov. 18, 1998


Prokaska, Lee, “Nothing is sacred in Region’s budget”, *The Hamilton Spectator*, Jan. 11, 1999

Prokaska, Lee, “Council gives Taro 4 months to work out leachate deal”, *The Hamilton Spectator*, Nov. 18, 1998


Reaume, Brad, “Drinking water must be protected”, *The Burlington Post*, March 5, 1997

Reaume, Brad, “Special water charge possible to offset costs” *The Burlington Post*, Nov. 27, 1996, A11

Regional Municipality of Peel Public Works Department, Request for Proposals: Regional Municipality of Peel Competitive Contract for the Operations and Maintenance of the South Peel Water and Wastewater Treatment Facilities, May 27, 1998

Regional Municipality of Ottawa-Carleton, Robert O. Pickard Environmental Centre Expansion and Rehabilitation Programme: Project synopsis, Nov. 1993

Rogers, Ed, “Halton to ask Peel price of water to develop Milton”, The Hamilton Spectator, June 17, 1997


Sandlos, John, Deputation on Bill 107, April 6, 1997.


Stewart, Ian, “Some things are not meant to be- the expressway”, The Hamilton Spectator, Jan. 11, 1999, p. A8

Stolch, Klaus, PUMC Manager of the Woodward Plant

Stuart Ogden, The Reconstruction of Industrial Relations in the Privatized Water Industry, British Journal of Industrial Relations, March 1994


Wallen, David, “Profitteering claims mark British privatisation”, The Globe and Mail

Water and Sewage Improvement Act, 1997: Compendium


**Interviews and Contacts**

Greg Hoath, IUOE  
Gus Olivera, President CUPE local 167  
Ed Thomas, CUPE Recording Secretary local 5  
Sarah Miller, CELA  
Andrew Horvath, City Councillor  
Leo Gohier, Director Water and Waste Water  
Klaus Stolch, PUMC Director of Operations  
Marilyn Baxter, BARC  
George Sorer, McMaster University  
Steve Buist, Hamilton Spectator  
Paula Fletcher  
John McCracken, CUPE Communications  
Ron Crawly, CUPE Research  
Mark Schuler, Pell Region Head of Water and Waste Water  
Don McLean, University of Waterloo  
John Percy, Ministry of the Environment  
Jocelyne Villeneuve, City Ottawa  
John Loxley, University of Manitoba  
Klaus Stolch in conversation at Local 167 on December 15/98  
John Percy, Ministry of the Environment interview January 1999