Don Lowry
President & Chief Executive Officer

Factors for success:
Public and private sector roles in securing a safe and reliable water supply in a time of global change

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CHECK AGAINST DELIVERY

Mr. Chairman, distinguished guests, ladies and gentlemen,

Thank you very much for inviting me here today. I am honoured to be the first business leader to have been asked to address this distinguished gathering.

Specifically, I would like to thank Dr. Henry Vaux, Chairman of the Advisory Committee of the Rosenberg Foundation, and Bob Sandford, Chair of the United Nations Water for Life Decade Canadian Partnership Initiative, for asking me to speak at this fifth edition of the Rosenberg International Forum on Water Policy. Their interest in having me address this very important forum is rooted in a desire expressed by Mr. Rosenberg to link scientific and policy scholarship to business practice here and elsewhere in the world. I appreciate this opportunity to share some of our views and experiences at EPCOR.

I've been asked to speak about the challenges and obstacles Canadians are facing to maintain safe and sustainable water systems. Evaluating the respective critical roles of the private and public sectors, and how these roles must be reconsidered in order to ensure we have healthy safe water, is a critical part of this discussion. Overall protection of our upland watersheds is also part of this discussion, as is the state of Canadian water infrastructure.

But first, let me begin by introducing EPCOR to you.

Simply put, we are one company with two lines of business – power and water – operating in three regions: Alberta, B.C and the U.S. Pacific Northwest, and Ontario and the U.S. Northeast.

EPCOR is one Canada's 25 largest privately-held corporations, and the 6th largest utility by revenue, which totaled $2.7 billion last year. [1]

Our people have developed some of North America's most sophisticated water and wastewater systems. This includes treating acid water drainage from an abandoned copper mine in B.C., developing process water solutions for challenging applications in Alberta's oil sands, and delivering clean, safe drinking water to more than 1 million Canadians living in more than 50 communities. We also have an interesting history. Our company was created as a municipal utility a century ago. In 1996, EPCOR was transferred from a city department to an independently-managed city-owned corporation. This transformation led to a market-oriented, customer-focused organization that is North American in scope.

Our company is perhaps unique in that it designs, builds, operates and finances new infrastructure. Our expertise includes advanced and highly automated water treatment systems, ultraviolet (UV) disinfection, and remote systems capable of monitoring all sizes of facilities.

[1] Canada's Top 100, Report on Business, *The Globe and Mail*, July/August 2006

Advances in both Artificial Intelligence and Remote Monitoring have helped us deliver best-in-class water quality standards to smaller communities in Western Canada. Our ability to monitor and maintain water and wastewater systems under the trained eye of water professionals right here, in Edmonton, is particularly beneficial for those struggling with tightening regulatory requirements.

EPCOR's water sustainability and delivery function is important when considered in the wider Canadian context of increasingly serious water system challenges.

To an audience familiar with the global water crisis, it may be surprising to hear Canadians talk about serious water quality and availability issues. In a world where a billion people do not have access to adequate, reliable water supply – and in which five million people a year die from largely preventable water-borne diseases, the situation that exists in Canada must seem hardly urgent.[2]

In comparison to so many others, Canadians should have little to worry about when it comes to water management and supply. Indeed, Canada is endowed with one of the greatest per capita fresh water supplies in the world.

Canada's rivers annually discharge 7% of the world's renewable water supply.[3] And while water has been a significant source of trans-boundary conflicts in the world, we live peaceably alongside our neighbors, with 40% of Canada's boundary with the United States composed of water.[4]

But, as other speakers at this forum will indicate, our water systems are being seriously challenged by growing populations, declining infrastructure and inadequate watershed protection practices. This will oblige Canadians to make significant changes to our existing water system strategies if we are to continue to deliver safe and reliable water and if we don't want water availability and quality issues to limit our future development.

In my opinion, that means we have to:

- Work to dispel the myth of a limitless abundance of water in southern Canada.
- Pay the full cost of water supply and delivery so we can afford to build new infrastructure and maintain existing ones.
- Enforce laws presently on the books so water operators have incentives to invest in infrastructure and innovative water quality systems.
- Give communities the right tools to meet the challenges they face. We believe this requires challenging existing service delivery models, and building partnerships between governments and the private sector. Working together, well-structured partnerships can help deliver improved quality, lower costs to communities.
- Finally, we have to move toward better integration of watershed management strategies with larger land-use policy.

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[2] United Nations Millennium Project, http://www.unmillenniumproject.org/press/press2.htm, 2006.
[3] Environment Canada, "Water Quickfacts". www.ec.gc.ca/WATER/en/e_quickfacts.htm
[4] Environment Canada, "Water Quickfacts". www.ec.gc.ca/WATER/en/e_quickfacts.htm

Our success in achieving these goals will demand that we transcend some of the negative stereotypes that exist in this country as a result of unfortunate situations abroad with respect to the private operation of public water treatment and distribution systems.

The Canadian Water Supply Condition

Because we take water for granted – which I am sure many of you wish you could do - Canadians do not act upon issues relating to water until there is a crisis. A crisis, however, is looming which will force Canadians to reconsider the value of water. That crisis revolves around the fact that increasing demand for safe water in Canada is overwhelming a rapidly aging and unreliable infrastructure. Adding additional stress is the fact that about 60% of our fresh water drains north while 85% of the population lives within 300 km of the southern border with the United States.[5]

This audience will recognize that this is not a unique challenge. It is one faced by many nations. We are not used to facing such problems. As a result, Canadians are having difficulty grasping what they mean. What these problems are telling us is that we are not different than anyone else. As some recent tragic incidents have revealed, we are beginning to face the same challenges everyone else is facing. We are not special.

Six years ago seven people died and 2,300 people fell seriously ill in Walkerton, Ontario because their drinking water was contaminated with the E-Coli bacteria.

In 2001, a Cryptosporidium outbreak endangered the health of 7,000 residents in North Battleford, Saskatchewan.

Last year, contaminated water forced the residents of a largely aboriginal community in Kasechewan, Ontario to evacuate their homes because of water contamination.

Each year hundreds of Canadian municipalities have to issue Boil Water Advisories because of the existence of or the threat of contaminated water. As of August 4th of this year, 83 Boil Water Advisories had been issued on Indian reserves across Canada.[6] In Alberta, Health Authorities issued 123 advisories between 2002 and 2004. Today, 59% of reserve drinking water systems are considered "at risk".[7]

Health problems related to water pollution in general cost Canadians an estimated $300 million per year.[8]

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[5] Water Survey Canada (Environment Canada)
http://www.wsc.ec.gc.ca/hydrometric/main_e.cfm?cname=hydrometric_e.cfm , August 9, 2006

[6] "Fix our water, First Nations groups urge," Halifax Chronicle Herald, Canadian Press, August 14th 2006.
http://thechronicleherald.ca/NovaScotia/522249.html

[7] "The state of drinking water on Canada's reserves," CBC News online, February 20, 2006. www.cbc.ca/slowboil/

[8] Environment Canada, "Water Quickfacts," www.ec.gc.ca/WATER/en/e_quickfacts.htm

The City of Edmonton experienced a Giardia outbreak in 1982 that was linked to 895 cases of illness.[9] That scare prompted a vigorous response – first by the City's water department, and later by EPCOR.

The response included increased time for chlorine to be in contact with the water, use of activated carbon particles to improve the water's taste, smell and colour plus the use of electronic monitors on the systems clarifiers and filters. Today, in Edmonton alone in 2005, EPCOR performed 109,000 tests on the region's drinking water, monitoring 326 different physical, chemical and microbiological parameters.[10]

EPCOR also installed what was then one of the largest UV treatment systems in the world. In 2002, Edmonton became the first Canadian city of its size to have its drinking water protected with UV treatment. As an aside, we later installed UV technology in a much smaller community called Canmore, which you would have passed on your way to Banff.

Edmonton is just one city and Canada is a huge country. Inadequate infrastructure remains one of the most serious challenges facing our water systems. Across Canada, many municipalities are facing severe infrastructure deficits for both water and wastewater services. The government of Canada recently reported that the nation's wastewater treatment facilities had exhausted 63% of their useful life by 2003.[11]

An Ontario report found that in that province alone, $30 to $40 billion of new investment was required in water and wastewater facilities.[12] Here in Alberta, the value of actions outlined in the province's Water for Life Strategy in February 2004 was $916 million over 10 years.[13]

Toward System Sustainability and the Public / Private Sector Role

The challenges facing our water systems are multidimensional and multi-faceted in their origins and certainly are not unique to Canada. It requires a diverse stakeholder approach that reconsiders and appropriately defines the role of public and private sectors.

Our ability to consistently deliver a safe and reliable supply of water depends on two key factors: securing a sustainable quantity and quality of raw water, and building and managing sustainable systems for its treatment, distribution and effective demand management.

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[9] Emergency Services Hazard Analysis Report, City of Edmonton, June 2002. http://www.edmonton.ca/EmergServ/HazardAnalysis.pdf

[10] EPCOR Water Utilities Statistics 2005. http://www.epcor.com/Customers/HomeSmallBus/Water/WaterUtilitiesStats2005.htm

[11] Statistics Canada, www.statcan.ca/english/research/11-621-MIE/11-621-MIE2006035.htm

[12] Expert Panel on Water and Wastewater Strategy, "Watertight: The Case for Change in Ontario's Water and Wastewater Sector", July 2005, p. 53. www.waterpanel.ontario.ca

[13] Alberta Government, www.waterforlife.gov.ab.ca/html/background7.html

An effective system must involve a strong and vigorous public sector, one that sets a clear, rule-based regulatory regime, working in tandem with municipal and private sector players to offer sustainable and reliable water supply, open to alternative-delivery models. Neither the public nor the private sector can deliver effective results alone. What we need are strong and well structured partnerships.

First, how do we deal with the urgent need for building and managing infrastructure?

Full-cost Recovery Model

A key starting point is coming to grips with the real cost of water. Water is not a free good – it is a precious resource that should be used responsibly and conserved. We need to pay the full cost of water and water delivery so we can invest in necessary system improvements and new infrastructure.

According to the Organization for Economic Cooperation and Development, Canadians pay some of the lowest water rates in the world.[14] In many communities, water rates remain low because they are subsidized by municipal governments through allocations to water utilities in municipal budgets. A recent report by an expert panel in Ontario reviewing Ontario's water system noted that municipalities in the province recovered only 65% of the total costs of providing water services.[15]

While low rates may create the illusion of affordability, these limit opportunities for reinvestment, and prevent overall system sustainability. Reflecting on the capital-intensive nature of water and wastewater services, the report noted that "utilities are starved for the funds they need to maintain their systems properly."[16] Ultimately, rates that do not reflect the full cost of producing and delivering the service eventually lead to a gap between what the system is expected to deliver -- and what that system can deliver without on-going subsidies.

Provincial governments in Canada use water license systems to control how much water is withdrawn, for what purpose, and by whom. But there are far too many instances where the true cost of treating and distributing water is hidden by subsidies, or absorbed by the tax system.

Customers of water and wastewater services should fund their full cost of building, operating and maintaining the system for two reasons.

First, it creates a pool of funding that is sufficient for the ongoing maintenance of the system – as long as the contributions remain dedicated to the system, and not diverted to

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[14] OECD Observer, "Water and Farms: Toward Sustainable Use", http://www.oecdobserver.org/news/fullstory.php/aid/1801/Water_and_farms:_Towards_sustainable_use.html. March, 2006.

[15] Expert Panel on Water and Wastewater Strategy, "Watertight: The Case for Change in Ontario's Water and Wastewater Sector", July 2005, p. 53. www.waterpanel.ontario.ca

[16] Expert Panel on Water and Wastewater Strategy, "Watertight: The Case for Change in Ontario's Water and Wastewater Sector", July 2005, p. 53. www.waterpanel.ontario.ca

other uses. Second, it sends an appropriate price signal – one that reminds us to conserve and make more prudent use of our resources. If it's free, we assign it no value.

Only 61% of Canadian urban water consumption is metered. Estimates show that consumption in unmetered areas is almost double: 474 litres per person per day, compared to 272 litres per person in a metered home.[17]

More fundamentally, we do not appropriately price for large-scale raw water extraction as we do for most other resources we withdraw from the environment. For every square cubic meter of timber that is logged in Canada, governments charge the logger anywhere from $8 in Ontario to over $20 on the British Columbia coast.[18] In oil producing provinces such as Alberta, the government charges a royalty rate based on the amount of oil or gas being produced and the market price for oil, which generally varies between 5% and 40% of production at a current day barrel price of around $70 per barrel [19] For minerals, the Alberta government charges 55 cents per tonne for coal used for electricity purposes, and 37 cents per tonne for silica sand. [20]

And yet for raw water in Alberta, the government charges an annual one-time fee – for example, users are charged only $150 annually for 125,000 cubic meters of water.[21] Irrigation water fees are paid only according to land area irrigated, not the volume of water applied to irrigated acres. Typically license fees for water merely serve to cover license administration costs.

The question I would pose to you, and to anyone concerned with the future of our water resource, is this: does charging more for sand than we do for water really reflect our values as Canadians, and is it the best way to manage the resource?

We believe that if governments mandate that pricing regimes transition toward full cost recovery then our public and private water utilities will be able to properly maintain existing facilities and build new ones, and together we will succeed in conserving our water resource.

Political realities pose a significant challenge; no one wants to pay more for basic services, and many consider water a free good, on principle. Customers are accustomed

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[17] Environment Canada, 2004 Municipal Water Use Report. http://www.ec.gc.ca/water/en/info/pubs/sss/e_mun2001.htm

[18] http://ilmbwww.gov.bc.ca/ilmb/lup/lrmp/coast/qci/docs/Licensee_LUP_Presentation.pdf#search=%22%22Stumpage%20rates%20by%20province%22%22

[19] Royalty rates decrease with lower rates of well production, and increase at higher rates of production. Canadian Association of Petroleum Producers, http://www.capp.ca/raw.asp?x=1&dt=NTV&e=PDF&dn=100066#search=%22government%20royalties%20per%20barrel%20oil%22

[20] Government of Alberta, Ministry of Energy. http://www.energy.gov.ab.ca/448.asp

[21] Government of Alberta, Alberta Environment. http://www3.gov.ab.ca/env/water/Legislation/FactSheets/GeneralInfo.pdf

to paying rates well below the real cost of water. The process of transition will require time, and it will require public education.

EPCOR's own experience tells us that full cost recovery models can work.

Working with its regulator, the City of Edmonton, EPCOR adopted a performance based rate structure in 2001. The performance based rate structure establishes performance targets EPCOR is required to meet for water quality, system reliability, customer service, safety and the environment. Failure to meet these targets can result in financial penalties.

Rates are set annually, with cost increases at a rate below inflation. This is a built-in incentive for EPCOR to achieve its targets efficiently, as the company was limited in the costs it could flow-through to customers. In fact, many of EPCOR's internal standards exceed the province of Alberta's provincial drinking water standards, which themselves are more stringent than the National Guidelines for Canadian Drinking Water Quality recommended by Canada's Department of Health.

Since the initiation of the performance based rate structures, water consumption has declined 14% in the City of Edmonton.

EPCOR has used this model to maintain appropriate rates aimed at cost recovery to ensure continued investment and efficiencies in the system, while at the same time successfully improving performance. For example, Edmonton water main breaks are at their lowest level since the 1960's, and the water loss rate is less than one-half the national average. Why? We replace 2% of Edmonton's water mains a year, and for the last decade have been renewing our cast iron pipe infrastructure.

Enforcing Our Laws

Another aspect of water system management that needs significant reform is our regulatory and enforcement regime. We must begin enforcing our existing laws.

Enforcement encourages good management, and provides a strong incentive for investment in the system. Owners and operators of water and wastewater systems will invest in their operations if they are held liable for poor performance.

Our governments have rarely held operators accountable for failing to meet essential regulatory requirements or damage done to public health and the environment.

In fact, studies show that publicly-run operators are among the most frequent offenders. Why? The reason is because many municipal governments are protected by liability limitations and have the capacity to pass on the costs of non-compliance to taxpayers. There is also a difficult conflict: since provincial governments often provide capital grants to municipalities for publicly-run water facilities, they also understand that strict enforcement could require expensive upgrades.[22] In many cases, governments that carry

[22] Elizabeth Brudbaker, Liquid Assets: Privatizing and Regulating Canada's Water Utilities. 2002. p. 131.

a regulatory responsibility also understand that by prosecuting offenders they would actually be prosecuting themselves.

The numbers are significant. In Ontario, for example, 101 sewage facilities were out of compliance with provincial government limits in 2002. These 101 instances of non-compliance were penalized by a total of 3 charges and 1 fine – a $10,000 penalty for failing to ensure the facility was run by a licensed operator.[23] This situation occurs in many other jurisdictions.

Of the 78 Indian Reserve water operations in Alberta, only 14 were fully-certified as recently as last February.[24] Numbers like this are not only indicative of enforcement shortfalls but also serve to show us that communities are struggling to attract and keep qualified staff.

This brings me to my next point of discussion: opportunities for public and private sector partnerships.

Partnerships

Private sector organizations can offer resources to communities that the public sector may not otherwise be able to effectively provide. All levels of government and private sector partners need to work together to deliver effective watershed management strategies, create value through facility-sharing and seek the benefits of alternative service delivery methods.

Partnerships between governments and private sector actors allow the public sector to share costs and risk, while maintaining a public interest in a key, vital service to local communities. This does not mean governments should necessarily divest themselves of assets and retreat to a purely regulatory role. Rather, using its interest or ownership in certain water system assets, governments can ensure pre-determined levels of service are maintained without playing a direct management and operational role.

Public-private partnerships offer a number of potential benefits. First, in a well-structured partnership the risks of cost-overruns, service demand and schedule delays are borne by the private sector, not the taxpayer. Competitive tendering can encourage innovative private sector solutions to facility management, design and construction. These partnerships also offer government greater flexibility to tailor projects to best meet local needs.[25]

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[23] "Revisiting Water and Wastewater Utility Privatization," by Elizabeth Brudbaker, Executive Director, Environment Probe. Presented at the "Public Goals, Private Means" Research Colloquium, Faculty of Law, University of Toronto, October 3, 2003.

[24] "The state of drinking water on Canada's reserves," CBC News online, February 20, 2006. www.cbc.ca/slowboil/Alberta.html

[25] "Creating the Winning Conditions for Public-Private Partnerships in Canada", Toronto Dominion Bank Special Report, June 22, 2006.

Opponents to public-private partnerships often suggest these projects experience higher costs since the private sector must borrow at higher interest rates than government because government is considered a less risky investment – governments can always return to the taxpayer in the event of cost overruns.

Yet, despite higher borrowing costs, the evidence points to the contrary. In the United Kingdom, reports by the Treasury Department indicate that public-private partnerships experience overall cost savings of 20% compared to publicly procured operations. The report also found that only 24% of these projects were delivered late, compared to 70% in the public sector. Cost-overruns occurred only 22% of the time under these partnerships compared to 73% in the public sector.[26]

EPCOR has delivered similarly positive results for many communities using public-private partnership models; bringing major construction projects in on-budget and on-time. On Vancouver Island, British Columbia, for example, we worked with the District of Sooke to build that community's first sewer system and wastewater treatment plant for 8,700 residents. The project was completed for $5 million less than budget, six months ahead of schedule. Even more importantly, it represents a step toward resolving a long-standing concern around the dumping of raw sewage into the ocean.

Looking Ahead

Stepping back, we must acknowledge that Canada is endowed with remarkable supplies of natural resources. We have not faced the same challenges that so many states do with respect to inter-state conflict over water. We have also made positive strides toward improving our water systems in the wake of recent water quality incidents, including making greater use of innovative technologies.

Governments are also tightening regulatory requirements and making better efforts to control and monitor water quality. The Alberta government has made better efforts to educate the public about water scarcity through its "Water for Life" program. This strategy, which was conceived by former Environment Minister Dr. Lorne Taylor is successfully increasing awareness and points to a new way of governing water in this province in the future.

But overall, our society is still behaving as if water is an infinite resource.

It is not. That is why we have to do so much more in order to protect this precious resource.

I cannot stress enough the importance of governments, industry and citizens working together to agree on solutions to the challenges I outlined today. Our experience in many communities shows that these challenges can be overcome, especially when we work together.

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[26] "Creating the Winning Conditions for Public-Private Partnerships in Canada", Toronto Dominion Bank Special Report, June 22, 2006.

We believe that when well structured, partnerships have the ability to manage infrastructure and personnel challenges in pursuit of long-term goals toward building strong and reliable water systems. The process begins with proper upland watershed management. It is supported by broader public awareness of the importance of water to our way of life and our future. But in the end, it means the supply of clean water to people. Though global and climate change challenges will add new dimensions to these challenges, we hope that our continuing efforts will serve as an example that will help others be more successful in managing their water.

Going forward, our company, and the 450 professionals within our water business, will continue contributing solutions to what we believe is one of the most pressing issues facing our world today. We look forward to working with many of you to make those solutions a reality.

Thank you.