by Aaron Atcheson and Rosa Mauro

Fixing OUR WATER INFRASTRUCTURE GAP

A simplified project finance model for municipal water and wastewater facilities

With a significant need for capital investment, municipal water and wastewater treatment would seem to be a logical asset for applying an alternative service delivery (ASD) model. The traditional public-private partnership (P3) model has been stress-tested and refined over the years in the provincial and federal government landscape. It is often perceived as too complicated, too costly, and not sensitive enough to address the political and regulatory approval landscape to which municipalities and their leadership are subject. That said, borrowing from and adapting a model used to finance renewable energy projects, we have developed a revised model that not only shifts risk to private parties, but also reduces, and perhaps even eliminates, the complications for a municipality. This simplified project finance model can provide a way forward for many municipalities across Canada to address the much needed capital investment required to bring municipal water and wastewater facilities to the required standards.

The Need

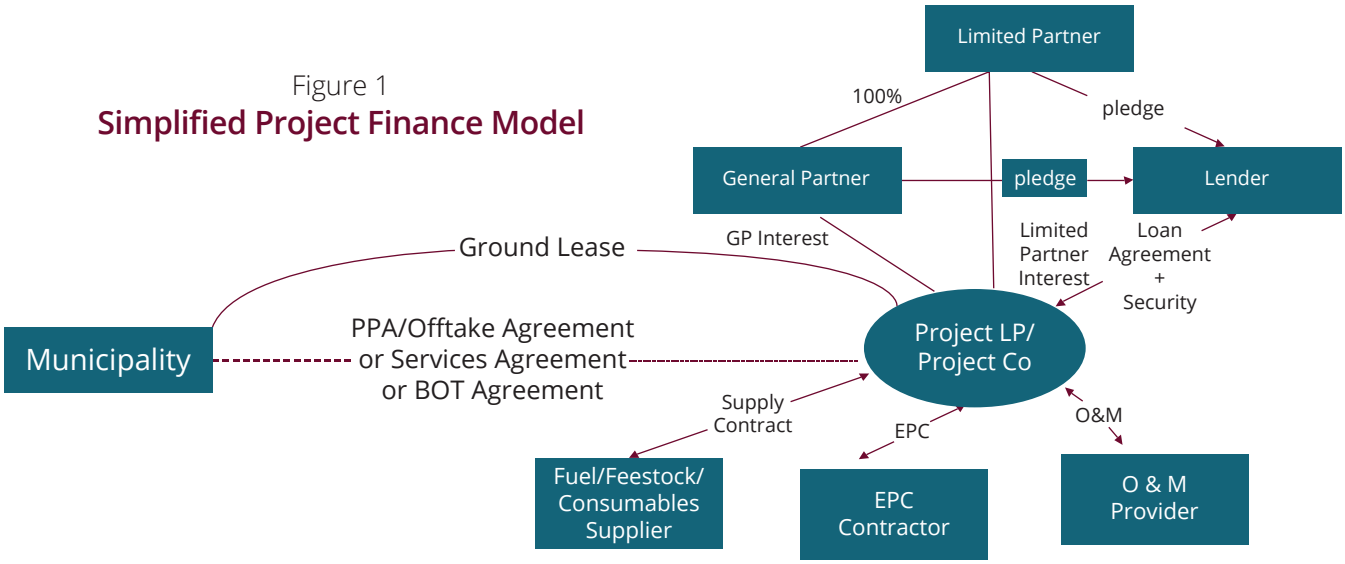
On December 12, 2016, the CBC reported that more than 205 billion litres of raw sewage and untreated wastewater was discharged into Canadian rivers and oceans in 2015. In the 2016 budget, the federal government committed $5 billion over five years for investments in water, wastewater, and green infrastructure projects across Canada, $2 billion over four years for immediate improvements to existing water and wastewater systems, and $2.24 billion to First Nations communities to improve water and wastewater infrastructure and waste management on the reserves. However, these funding commitments will only cover a fraction of the expected cost of capital repairs to water, wastewater, and stormwater systems across Canada. The Federation of Canadian Municipalities (FCM) expects the costs to bring wastewater treatment facilities in compliance with the 2012 Federal Wastewater Systems Effluent Regulations to be as high as $18 billion.

To put this into perspective, there are 106 high-risk municipal water and wastewater systems that must be upgrad-

AARON ATCHESON practices in the area of energy and infrastructure projects, commercial real estate, and business transactions. He is Chair of Miller Thomson's National Real Estate Group, and Co-lead of its projects group. He concentrates his practice on the development and financing of infrastructure facilities, with a particular focus on the energy sector.

ROSA MAURO is an Associate Counsel at Miller Thomson LLP. She has been practicing in the areas of construction, infrastructure, and procurement for over 13 years with an expertise in P3s. She advises both public and private sector clients on all of their project needs, including structuring.

Figure 1
Simplified Project Finance Model



ed by 2020 to be in compliance with the regulations. The estimated cost is $3.5 billion. Without significant investment in water and wastewater infrastructure, Canadian municipalities will fall short of complying with the national standards for wastewater treatment. The national standards were created to ensure that Canada's lakes and rivers are clean, and that Canadians have safe and reliable drinking water – obligations shared by all orders of government.

Options

Where governments fall short is in funding. This funding shortfall warrants an examination of alternatives to traditional construction delivery models. ASD models should be considered to procure, finance, construct/refurbish, operate, and/or maintain Canada's aging water and wastewater systems. ASDs can be specifically tailored to ensure: operational efficiencies and cost savings, diversified sources of financing, transfer of risk from municipalities to the private sector, regulatory and legislative compliance, as well as more efficient procurement processes and project execution. For other government asset classes such as transit or healthcare, Canada has relied on the P3 approach or the alternative finance and procurement (AFP) approach, both of which are ASDs, to address badly needed capital repairs that could not be deferred any longer. The decades of under-investment in water and wastewater infrastructure across Canada is creating a situation where all orders of governments will need to address the state of such infrastructure on an emergency basis. This can be far more costly than addressing such infrastructure through a fulsome capital planning exercise.

Canada's P3 model has historically, at least for the provincial and federal governments, provided for certain benefits. P3s are generally packaged as contractual arrangements between the public and private sector whereby the private sector assumes most of the risk associated with the financial, technical, operational, and maintenance risk of large-scale infrastructure projects. A P3 generally results in bundling the various components of a large-scale infrastructure project and, through the vehicle of a complex procurement process, identifying and awarding said P3 project to a capable consortium (Project Co) that has the capital, expertise, and longevity to deliver.

The P3 model, however, poses some challenges for municipalities. Unlike projects under the jurisdiction of the federal and provincial government, municipal projects must be approved by council in full public view, requiring staff to justify projects that appear more expensive on the surface than traditional projects. P3 structures are also often presented as necessarily complicated, and without much opportunity for simplification. The risk being assumed by the private sector is quite extensive, including assuming the risk of cost overruns and project/operational risk (e.g., failure of equipment). Transferring this type of risk to the private sector addresses the lack of expertise and institutional resources in municipalities, but a critic might view the P3 model as paying the private sector more money to take on risk than would otherwise rest with the government. If financed, having municipalities complete these projects "on balance sheets" poses its own problems, including bumping up against municipal debt limits.

Simplified Project Finance Model

What other ASDs are out there? Taking what works best from the P3 and AFP models, and coupling it with what works best in large electricity projects, may be the most cost effective and lowest risk solution – even more refined than the traditional P3 models. In the independent power producing world, the basic contractual structure of a project-financed project uses an engineering, procurement, and construction (EPC) contract. In this scenario, the EPC contractor is required to deliver a complete facility to a Project Co, and the Project Co will have entered into various contracts that will include a services agreement or build, operate, transfer (BOT) agreement, or concession agreement with a municipality that gives the Project Co a right and obligation to build and operate the water and wastewater facility for a fixed period of time (e.g., 25 years), after which it will transfer the facility to the municipality. Figure 1 provides a preliminary illustration of the proposed ASD model. Note that the involvement

> Regardless of which financing arrangement is used, a payment mechanism must be established. There are two types of payment mechanisms: availability for use or revenue-based.

of the municipality in the structure is limited to one agreement providing for delivery of the services, plus a ground lease allowing for location of the facility on municipal property. Everything else is the responsibility of the Project Co.

How it Would Work

Arguments have been made that municipalities should borrow more: the bond markets are strong, interest rates are low, and lenders have confidence in municipalities' ability to pay back loans. However, municipalities have limited sources of revenue to pay back loans, limited to transfers from other orders of government, municipal taxes and service fees, and a limited tolerance for risk. An ASD model would result in the financing risk being borne by the Project Co. There are generally four types of financing arrangements that arise in a traditional ASD model: bank financing, bond financing, private placement, or hybrid financing. Hybrid financing is used when the municipality is willing to bear some of the financial risk. This proposal would be more akin to a project financing, which in Canada often involves insurance companies and pension funds looking to invest funds at rates higher than full covenant bank financing, but accepting limited recourse to ultimate project owners in return for the ability to take over the Project Co in an enforcement scenario. Under this proposal, the municipality would not have any additional debt on its books, would not face completion, operation, or financing risk, but would have to be comfortable that a lender to Project Co would have the ability to enforce on the project assets and/or the ownership interests in Project Co, and transfer them to a qualified successor.

Regardless of which financing arrangement is used, a payment mechanism must be established. There are two types of payment mechanisms: availability for use or revenue-based. In its simplest form, a payment mechanism rooted in availability can be chosen where the municipality would make monthly payments to Project Co for making the water/wastewater facility available for use. In order to receive such payments, the operation of the facility must meet certain performance standards/benchmarks. If availability was limited in some manner during a period of time, a formula would provide for reductions in payments – significant enough so that Project Co will not make inappropriate decisions in respect of the provision of a critical government service. The revenue-based payment mechanism is connected to the demand and use of the water/wastewater facility, such that Project Co recovers its costs through user fees that are charged to the public for the use of the asset.

The municipality would retain demand risk under the availability for use payment mechanism, and Project Co would assume the demand risk under the revenue-based form of payment mechanism. Because of the ability of multiple orders of government and non-governmental stakeholders to affect demand for water, the lenders to these structures should have a strong preference for the availability model.

Another challenge in respect of these projects is that size might normally operate to eliminate many of them from consideration for private funding. However, the recent experience in Ontario using the project finance model on suites of mid-sized solar rooftop and ground mount projects is instructive; we believe that if the EPC contractor, O&M provider, and (to a certain degree) the fuel/consumables suppliers are consistent across a group of projects located in different municipalities, the model could allow for the bundling of similar projects of various sizes, and the successful finance, build out, and operation of these projects. Bundling could also help defray legal costs and to standardize documentation.

Closing the Gap

Municipalities are charged with a huge responsibility to ensure that the public receives clean, drinkable, and potable water and that Canada's lakes, rivers, and water sources are not threatened. The decades of under-investment in water and wastewater infrastructure across Canada need to be addressed. Capital planning that addresses underserviced regions and communities with water/wastewater facilities is critical. The capital planning exercise would include an assessment of where traditional delivery models are most appropriate and where ASDs may be the best way to go. The proposed simplified project finance model deserves consideration by municipalities and could be the way forward for this sector. **MW**

as published in

Municipal World

CANADA'S MUNICIPAL MAGAZINE – SINCE 1891

1-888-368-6125 *www.municipalworld.com*