

July 28, 2014

To: His Worship the Mayor  
and Members of City Council

Re: Regina Wastewater Treatment Plant Upgrade Project - Award of Request for Proposals  
#2245

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### RECOMMENDATION

That this report be received and filed.

### CONCLUSION

Administration has completed the procurement for *Request for Proposals #2245 Design, Build, Finance, Operate, and Maintain (DBFOM) of the City of Regina Wastewater Treatment Plant (WWTP) Upgrade Project* (Project). On July 3, 2014, the City of Regina (City) entered into the DBFOM Agreement (Project Agreement) with EPCOR Water Prairies Inc. (EPCOR) for the WWTP Upgrade Project.

EPCOR and the City agreed to design requirements (i.e. project-specific output specifications), a schedule, and a set price which are stipulated in the Project Agreement. The Project Agreement outlines these commitments and binds both parties to a commercial transaction that will result in EPCOR designing, building, financing, operating, and maintaining the WWTP for a 30-year period. The Project Agreement includes provisions for significant financial penalties if the Project does not meet the design requirements, is delivered late or operational performance is not met. The Project Agreement is for a fixed price so the Project will not go over budget.

The WWTP Project's procurement met all requirements in the February 25, 2013 City Council approval resolution. DBFOM was selected over design, bid, and build (DBB) for strategic reasons and because the Project's business case showed that there was a possible \$35.2 million net present value (NPV) saving (6.9%), which rose to a \$79.6 million NPV saving (15.5%) when the PPP Canada Ltd. funding was included. Based on preliminary engineering and financial analysis, City Council approved a project capital cost of up to \$224.3 million. A future report will summarize the financial results of the value for money analysis on an NPV basis.

The DBFOM procurement was highly competitive and savings were even greater than anticipated in the business case evaluation. The actual capital cost for the Project is \$180.8 million. This includes both EPCOR's and the City's costs for the capital portion of the Project. This results in a \$43.5 million savings in comparison to the projected capital cost of \$224.3 million. The PPP Canada Ltd. funding will be \$48.2 million as the eligible capital costs were significantly lower than anticipated. In addition to the construction savings, there are also substantial savings in the long term operating period. The projected costs over the entire term of the project, including construction, was set at \$858.2 million. The Project Agreement and City costs for the Project are \$610.7, providing a \$247.5 million savings over the entire 30-year life of the Project.

The WWTP construction will be substantially completed by December 31, 2016. The upgraded WWTP will reduce ammonia, nitrogen and phosphorus levels in the effluent through new

treatment technology that is more efficient than the current WWTP. The WWTP will have a greater treatment capacity to accommodate Regina's future growth. The reuse of offline storage through repurposed lagoons will allow the WWTP to manage large storms and still provide full treatment. The WWTP will be handed back to the City at the end of the 30-year Project Agreement in good condition as a result of high maintenance and renewal standards that are included in the Project Agreement.

EPCOR's Project Agreement prices are fixed over the next 30 years with the City continuing to set rates through the water and wastewater utility. The City retains 100% ownership of the WWTP with no ownership transfer occurring as part of the Project Agreement.

## BACKGROUND

It was essential that the City upgrade the WWTP to:

- Better protect public health and the environment;
- Improve water quality for downstream residents and businesses; and
- Meet the needs of a growing population.

City Council approved the DBFOM delivery model for the procurement of the WWTP Upgrade Project at the February 25, 2013 meeting (CR13-26). As part of this approval, City Council authorized the Deputy City Manager of City Operations to:

- Prepare and issue a Request for Qualifications (RFQ) to identify short-listed proponents who could deliver the Project;
- Award an opportunity to participate in the Request for Proposals (RFP) process to the three highest scoring proponents identified by the RFQ process;
- Prepare and issue a RFP to identify the Preferred Proponent who will deliver the Project; and
- Award the RFP to the Preferred Proponent.

In addition, City Council also approved the funding (CR13-26) for the DBFOM procurement for the Project. The approval required that the Project receive funding through the P3 Canada Fund.

### **Issuing the RFQ and Subsequent Referendum**

On May 14, 2013 the City issued the Project RFQ (No. 2153). During the RFQ process, the City of Regina held a Referendum on September 25, 2013 with the question determining the delivery model for the Project. The referendum results supported the February 25, 2013 decision of City Council, and the City was able to proceed with the Project through a DBFOM delivery model.

The RFQ process was originally scheduled to conclude in July 2013, but was halted during the referendum period, and was concluded on October 16, 2013 with the announcement of the proponent shortlist. The following three proponents, in alphabetical order, were shortlisted in the RFQ process:

- EPCOR Saskatchewan Water Partners (now incorporated as EPCOR Water Prairies Inc.);
- Prairie Water Partners; and
- Wascana Environmental Partners.

### **Reassignment of Delegated Authorities**

On October 15, 2013, City Council reassigned the authorities granted to the Deputy City Manager of City Operations in City Council Report CR13-26 to the City Manager or his or her delegate (CM13-12). On October 16, 2013 the City Manager delegated this authority to the Deputy City Manager and Chief Financial Officer, Corporate Services. As a result of organizational change, on January 1, 2014 the City Manager maintained consistent executive leadership through delegated authority to the same individual as the Deputy City Manager and Chief Operating Officer.

### **RFP Process**

On October 16, 2013 the City issued the RFP for the Project to the three shortlisted proponents. The RFP submission deadline was May 22, 2014.

The RFP evaluation team included representatives from the City, as well as a number of external technical and business advisors. The team evaluated each proponent's design, construction schedule, financial offer, and 28 required management plans, including plans for construction, operation, asset management, permitting, and safety. The selection process for the RFP was based on the evaluation of the submissions and the ranking of the financial offers. The proponent whose technical submission met all the technical and financial requirements and provided the financial offer with the lowest total cost on a net present value (NPV) basis was selected as the preferred proponent.

All three proponents met the technical requirements for the Project and all financial offers were within the authority granted by City Council (CR13-26). The lowest NPV financial offer was provided by EPCOR and as a result, on May 29, 2014 the City announced that EPCOR was selected as the preferred proponent to deliver the Project.

### **PPP Canada Ltd. Funding for the Project**

On June 21, 2013, PPP Canada Ltd. announced that the Project had been approved for funding under the P3 Canada Fund. The Project was eligible for the lesser of 25% of the eligible capital costs of the WWTP upgrade, as determined by PPP Canada Ltd. or \$58.5 million. On October 16, 2013, the City and PPP Canada Ltd. entered into the Conditional Financial Agreement and on May 26, 2014 the City and PPP Canada Ltd. entered into the Final Financial Agreement.

### **Borrowing Bylaw 2014**

On June 23, 2014, City Council approved CR14-70 instructing the City Solicitor to prepare a borrowing bylaw that, in accordance with *The Cities Act* and public sector accounting standards established by the Chartered Professional Accountants of Canada, the construction cost of the upgraded WWTP asset would be classified as debt. As a result, a borrowing bylaw was approved by City Council for \$158,464,000.

### **DISCUSSION**

The purpose of this report is to inform City Council that the City entered into a fixed price 30-year Project Agreement to design, build, finance, operate and maintain the WWTP with EPCOR on July 3, 2014. All conditions for the DBFOM from the City Council approval (CR13-26) on February 25, 2013 were met. An overview of the key elements of the Project is provided below.

WWTP Finance

The DBFOM procurement process was extremely competitive, resulting in a 30-year fixed price Project Agreement for the WWTP upgrade and operation that is significantly under budget.

On February 25, 2013, City Council decided to support the DBFOM delivery model over the design, bid and build (DBB) model. The Administration’s analysis of the various procurement models showed an estimate of a \$79.6 million NPV value for money through the DBFOM delivery when the potential funding from PPP Canada Ltd. was taken into account (See: CR-13-26 Appendix A: City of Regina Wastewater Treatment Plant Expansion & Upgrade Project, Summary of Delivery Model Assessment).

As noted in CR13-26, the capital cost for the WWTP through DBFOM delivery was projected at \$224.3 million. Following award of the Project Agreement to EPCOR the capital cost for the WWTP will be \$180.8 million. This cost includes all of EPCOR’s construction costs, all City procurement costs, and a City contingency. The Project Agreement capital commitment is \$43.5 million under the budget prior to taking PPP Canada Ltd. funding into account. Note if the \$7.9 million in City risk contingency is not fully expended, there will be additional Project savings.

PPP Canada Ltd. funding for the Project was awarded at 25% of eligible capital costs up to \$58.5 million. EPCOR’s proposal provided significant savings over the capital cost budgeted, so the PPP Canada Ltd. funding is now estimated at \$48.2 million.

**Capital Commitment**

<b>Expenditures</b>	<b>Amount (millions \$)</b>	<b>Funding Source</b>	<b>Amount (millions \$)</b>
Construction Cost (including procurement)	172.9	PPP Canada Ltd. Grant	48.2
Retained Risk Contingency	7.9	Private Party Financing	78.7
		Previously Approved Capital funding	27.5
		General Utility Reserve	26.4
<b>TOTAL</b>	<b>180.8</b>	<b>TOTAL</b>	<b>180.8</b>

Not only was the construction cost significantly lower than projected, but the long term operation and maintenance cost also has significant savings. The costs projected for the entire Project, including construction in cash flow dollars for 30-years was \$858.2 million. The Project Agreement and City costs in cash flow dollars for 30-years are \$610.7 million. The entire Project is \$247.5 million under budget for the 30-year Project Agreement.

The sum of \$610.7 million is an all-in cost for the Project Agreement and City costs over the 30-years. The \$610.7 million includes: design; build; finance; operate; maintain; staffing; utilities; City management; all City consultants; inflation; and contingencies. This is a complete cost that will provide a facility that will be returned to the City in good condition at the end of the 30-year Project Agreement.

**Total Project Cost Over 30 Year Term**

<b>Expenditures</b>	<b>(millions \$)</b>	<b>Funding Source</b>	<b>(millions \$)</b>
Capital Payments to EPCOR	165.5	PPP Canada Ltd. Grant	48.2
Milestone Payment to EPCOR	30.0	Previously Approved Capital Funding	27.5
Substantial Completion Payment to EPCOR	49.7	General Utility Reserve (through utility rates)	510.4
Payments to EPCOR for O&M, Renewal, plus City Direct Costs (Commodities and 2014 Labour)	324.4	Utility SAF Reserve (applied to capital financing cost)	24.5
City Procurement Costs and Operation of Existing WWTP Until EPCOR Assumes O&M	16.2		
City's Construction Oversight	5.3		
City's External Contract Management Costs	2.0		
City's Retained Risk Contingency	17.5		
<b>TOTAL</b>	<b>610.7</b>	<b>TOTAL</b>	<b>610.7</b>

Payments and Performance

Payments to EPCOR throughout the 30-year Project Agreement are performance based. Lump sum capital payments are made at the milestone and substantial completion dates. Monthly payments are applied for existing facilities operation and maintenance, upgraded infrastructure operation and maintenance, facility renewal, and capital payments.

**Milestone Payment and Substantial Completion Payment**

The City will pay EPCOR a \$30 million milestone payment after January 1, 2016, a \$49.7 million payment at substantial completion upon achieving the substantial completion requirements, and a monthly capital repayment of \$501,501.55 per month from substantial completion until June 2044. The milestone and substantial completion payments are tied to performance achievements and certified by a third party, independent certifier.

**Performance Security**

The financing arrangements are set out in the Project Agreement and are consistent with well-established market standards for P3 construction projects. The direct and indirect performance security measures within the Project Agreement include:

- An initial performance letter of credit that is held by the City as security until construction has commenced and a certain amount of direct costs have been incurred by EPCOR;
- Payments to EPCOR during construction based upon the milestone payment and a substantial completion payment. The result of this structure is that significant value of the Project Agreement will remain unpaid and at risk to EPCOR during and after construction;

- Payment adjustments if EPCOR has failed to achieve substantial completion by December 31, 2016.
- Completion holdbacks to ensure EPCOR completes any deficiency work or compensates the City for the cost to complete the work; and
- Responsibility upon EPCOR for construction defects through the 30-year Project Agreement; as well as EPCOR must maintain availability standards and handback conditions at the end of the Project Agreement term as there are financial mechanisms in place to ensure performance.

### **O&M Payments and Renewal Payments**

Operation and maintenance and facility renewal payments are made on a monthly basis. These payments are indexed to inflation and follow labour, consumer goods, chemical, and machinery and equipment indices. These payments are subject to payment adjustments for Project Agreement performance. Failures to meet permit requirements, reporting requirements, and maintenance standards have financial deductions from the monthly payment. Beginning at Year 25 in the Project Agreement, the City is able to withhold all monthly payments (capital, operation and maintenance, and facility renewal) as a mechanism to ensure that the facility is able to meet handback conditions.

Permit requirements are taken very seriously with the failure to meet effluent standards having payment adjustments of \$50,000 to \$100,000 (indexed to inflation) per parameter per month when the WWTP is fully constructed and operational.

### **WWTP Design**

The design requirements for the WWTP are primarily based on meeting any applicable permits and approvals, including the effluent standards requirements that come into effect on December 31, 2016. The City has set the average and maximum amount of wastewater requiring treatment and its quality parameters. The new WWTP's ability to treat wastewater will be increased in size from 70 to 92 million litres per day (ML/d) with the ability to provide full treatment up to 156 ML/d. In addition, to ensure the WWTP is capable of managing peaks from high rain periods the facility (including offline storage in three repurposed lagoons), it will be able to accept 197 ML/d with peak flows of 5,200 litres/second. This will ensure that multiple large rainstorms can be managed and appropriately treated.

The WWTP upgrade incorporates retrofits to all existing treatment components and the addition of a new secondary treatment process. The construction is approximately one-third retrofit and two-thirds new construction. The WWTP is designed to separate liquids and biosolids, and the treatment of these streams primarily occurs within different processes.

A key component of the upgrade is the new secondary treatment process, which replaces the dated lagoon technology that the City is currently using. The new secondary process selected is biological nutrient removal (BNR) and is one of the modern standard processes used in upgraded wastewater treatment plants in Canada and other parts of the world. The new BNR portion of the WWTP, which is where the ammonia, nitrogen and phosphorus will be removed, includes three large rectangular concrete bioreactor tanks, three large circular clarification tanks, and all supporting equipment. The BNR treatment process utilizes naturally-occurring bacteria to

breakdown sewage under optimized conditions. This process uses less power and chemicals and provides better treatment than the current lagoon and tertiary processes.

With the installation of the new secondary treatment process, some of the existing lagoons will be reused for offline wet weather and emergency flow management. In addition, treated biosolids will be beneficially reused onsite to reclaim and rehabilitate one of the existing lagoons to a more natural state with prairie vegetation.

The anticipated works include:

- Upgrades to Condie Road valve chamber, including tie in stubs to existing chamber and a new line from the valve chamber to lagoon 2A;
- Upgrade existing aerated grit chamber with a vortex system;
- Rehabilitate existing primary sedimentation concrete tanks;
- Construction of new bioreactors;
- Construction of new sidestream bioreactor;
- Construction of new secondary clarifiers;
- Replace existing ultraviolet disinfection system;
- Conversion of north tertiary clarifier to fermenter;
- Conversion of south tertiary clarifier to biosolids holding tank;
- Upgrades to digesters including replace existing mixing system and rehabilitate existing concrete tank coating;
- Construction of new dissolved air flotation building for waste-activated sludge thickening;
- Construction of a new maintenance building;
- Installation of new odour control units;
- Conversion of aerated lagoon 2A to wet weather flow storage; and
- Reclamation of existing lagoon 1S with biosolids storage monofil;
- Installation of a new 25 kV power feed, transformers and switchgear, MCC panels and generator; and
- Construction of temporary roads for construction purposes.

### WWTP Construction

The WWTP construction preparation began with an early works contract on June 23, 2014, which means initial work on site began before financial close. Wet weather limited the degree to which early work was able to occur, but excavation work is anticipated to start in earnest in early July. Substantial completion has been set for December 31, 2016 to align with the new Provincial WWTP regulatory requirements for more stringent treatment standards.

EPCOR construction milestones include:

Excavation starts	July 2014
Operations begin	August 2014
Long lead time equipment is ordered	September 2014
Retrofit of existing equipment/processes begins	October 2014
Finalize design	January 2015
Hydraulic testing of new bioreactors	Summer 2015
Hydraulic testing of new clarifiers	Fall 2015
Equipment commissioning	Spring-Summer 2016

Hydraulic capacity test	October 2016
Odour system performance test	November 2016
30-day performance test	November-December 2016
Substantial completion	December 2016

The 30-day performance test is critical as it validates the capabilities of each process component to ensure that they are all capable of meeting maximum operating conditions. Failure to meet the performance test will result in a \$25 million holdback with a limited time to address any deficiencies.

## RECOMMENDATION IMPLICATIONS

### Financial Implications

With the execution of the Project Agreement, the City has a 30-year final fixed price Project Agreement with EPCOR to design, build, finance, operate, and maintain the WWTP. The Project is significantly under the budget City Council set in CR13-26.

The City's construction-related and ongoing contract payments to EPCOR are considered a long term liability for the City, and as a result have been treated as debt, requiring City Council to pass a borrowing bylaw for \$158,464,000. The City will be paying a milestone payment of \$30,000,000 on or after January 1, 2016, and a substantial completion payment of \$49,739,000 on or before December 31, 2016. The remainder of the liability is reflected in the remaining monthly payments over the contract term totaling \$78,725,000.

While the City is not borrowing from EPCOR, and there are no direct interest costs in connection with these payments, the Cities Act does not contemplate the type of liability this P3 contract establishes, and requires the City's borrowing bylaw to state an effective interest rate. While it could be identified that the interest rate is 0%, the City has taken a more conservative view in the establishment of the borrowing bylaw. In order to meet the legislative requirements, the City calculated the time value of money, related to making these payments over thirty years versus paying the full balance immediately. This calculation resulted in a discount rate of 6.462%, which was used in the borrowing bylaw.

It should be noted that a key element of the P3 contract includes a stream of performance payments over time, to ensure ongoing performance and effectively transfer risk to EPCOR. This allows the City to ensure contract performance requirements are being met and provides a tool to financial penalize EPCOR for non-performance. In effect, the long term payment stream provides significantly more value and risk mitigation for the City, as opposed to a more immediate payment that would occur in a traditional procurement approach. Overall, this approach has allowed the City to achieve significant financial value, with the project being \$247.5 million lower than originally projected over 30 years, and most of the project risk being borne by EPCOR.

Funding for this Project comes from previously approved funding of \$27.5 million, \$48.2 million in PPP Canada Ltd. funding, \$24.5 million from the SAF reserve, and \$510.4 million from utility rates over the 30-year period. The Project total cost in cash flow dollars is \$610.7 million over 30-years and includes inflationary indexing. A future report will summarize the financial results of the value for money analysis on an NPV basis.



In addition the City reserves the right to all commercial and other opportunities related to the wastewater treatment plant facilities, infrastructure and lands. For example the City will retain the financial benefits from the agreement with Western Potash and any similar opportunities.

### Environmental Implications

The upgraded WWTP will meet new regulatory requirements by December 31, 2016, reducing levels of ammonia, nitrogen and phosphorus in the effluent. It will treat effluent to higher standards that will better protect public health and the environment, and improve water quality for downstream residents and businesses. The City has, and will continue to maintain on going discussions and review with WSA and EPCOR toward meeting all permit requirements by December 31, 2016. While there is always a risk that unforeseen events or project challenges arise, the City is confident that, working with WSA and EPCOR, any future issues can be effectively addressed to ensure permit compliance continues to be maintained.

### Policy and/or Strategic Implications

The WWTP Upgrade Project is a 30-year Project Agreement that will provide a high quality of wastewater treatment to the residents of Regina at a substantial savings. The reduced debt implications for the Project and utility costs will allow the City to contemplate other initiatives that would have previously been not available.

The procurement process was implemented as is required by the City's P3 Policy and *The Regina Administration Bylaw, No. 2003-69* and has been certified as such by the following external advisors:

- J D Campbell and Associates was contracted as the City's Fairness Advisor to monitor and provide fairness throughout the WWTP Upgrade Project procurement process. The Fairness Advisor has certified that the procurement process was conducted in a fair manner. Refer to Appendix A for this certification.
- Deloitte was contracted as the City's Financial and Business Advisor to establish and facilitate the evaluation of the submissions to the RFP. Deloitte has certified that the WWTP Upgrade Project procurement process was conducted as per the established evaluation process. Refer to Appendix B for this certification.

### Other Implications

None associated with this report.

### COMMUNICATIONS

A public announcement was held on May 29, 2014 to announce that EPCOR was selected as the preferred proponent for the Project. As the Project proceeds, the City will continue to keep the public informed of progress and key milestones. Residents will be able to watch work the WWTP progress through a live-streaming webcam that will be installed for construction.

Additional information reports on the value for money for the Project and the Project Agreement will be publically available through reports to City Council. Currently, these are expected to be brought forward in September.

DELEGATED AUTHORITY

Authority was delegated to the Deputy City Manager & COO to award the contract for the WWTP Upgrade Project and to enter into the Project Agreement and all related documentation in Council Reports CR13-26 and CM13-12.

Respectfully submitted,



Brent D. Sjoberg  
Deputy City Manager & COO

Respectfully submitted,



Glen B. Davies,  
City Manager & Chief Administrative Officer

Report prepared by:  
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