STAFF REPORT
ACTION REQUIRED

Contract Award - Request for Proposals No. 9117-13-7210 Professional Engineering Services for the Design and Construction Administration of the Wet Weather Flow System to Control CSO Discharges to the Don River and Central Waterfront

Date:	February 18, 2014
To:	Public Works & Infrastructure Committee
From:	Executive Director, Engineering & Construction Services Director, Purchasing & Materials Management Division
Wards:	All
Reference Number:	P:\2014|Cluster B\TEC\PW14019 (AFS#18085)

SUMMARY

The purpose of this report is to advise of the results of the Request for Proposals No. 9117-13-7210 for the provision of Professional Engineering Services for the Design and Construction Administration of the Wet Weather Flow System to Control Combined Sewer Overflow (CSO) Discharges to the Don River and Central Waterfront, including the Coxwell Sanitary Trunk Sewer Bypass Tunnel; and request authority to enter into agreements with the recommended proponent.

The contract award is within the delegated authority of the Public Works & Infrastructure Committee.

RECOMMENDATIONS

The Executive Director of Engineering & Construction Services and the Director of Purchasing & Materials Management recommend that:

1. The Public Works & Infrastructure Committee, in accordance with Section 195-14C of Toronto Municipal Code Chapter 195 (Purchasing By-Law) grant authority to the Executive Director, Engineering & Construction Services, to negotiate and enter into agreements with Black & Veatch Canada Company, being the highest overall scoring

proponent meeting the requirements of Request For Proposal No. 9117-13-7210, to provide contracted professional engineering services for the Design and Construction Administration of the Wet Weather Flow System to Control CSO Discharges to the Don River and Central Waterfront, in the amount of $57,018,913.00 net of HST including disbursements, provisional allowances and contingencies as follows:

a. For the preliminary design of the Wet Weather Flow System in an amount not to exceed $12,170,037.00, net of HST, including labour, disbursements, provisional allowances and contingencies. This amount includes a contingency allowance of $2,000,000.00, net of HST, for additional services, if necessary and authorized by the Executive Director, Engineering & Construction Services.
b. For the detailed design of the Coxwell Bypass Tunnel in an amount not to exceed $16,551,494.00, net of HST, including labour, disbursements, provisional allowances and contingencies. This amount includes a contingency allowance of $2,000,000.00, net of HST, for additional services, if necessary and authorized by the Executive Director, Engineering & Construction Services.
c. For services during construction of the Coxwell Bypass Tunnel including general management, office administration, and resident site inspection and field services in an amount not to exceed $27,719,892.00, net of HST, including labour, disbursements, provisional allowances and contingencies. This amount includes a contingency allowance of $8,500,000.00, net of HST, for additional services, if necessary and authorized by the Executive Director, Engineering & Construction Services.
d. For post-construction services, upon completion of construction of the Coxwell Bypass Tunnel, in an amount not to exceed $577,490.00, net of HST, including labour, disbursements and provisional allowances.

Financial Impact

The total contract award recommended in this report is $64,431,371.69, including HST and all applicable charges. This represents a total cost to the City of $58,022,445.87, net of HST recoveries. The engineering estimate for this assignment was $100,000,000.00, including HST and all applicable charges.

Funding for this contract award is available in Toronto Water's Approved 2014 Capital Budget and 2015-2023 Capital Plan for the Don & Waterfront Trunk/CSO Design – Package 1 under Account No. CWW480-01, with forecast expenditures as shown in the table below (net of HST recoveries).

Year	Funding Details
2014	$2,614,891.74
2015	$6,589,000.00
2016	$11,347,000.00
2017	$10,347,000.00

Year	Funding Details
2018	$10,347,000.00
2019	$11,000,000.00
2020	$5,777,554.13

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

BACKGROUND

In 1987, the International Joint Commission identified the City of Toronto's waterfront along Lake Ontario as one of 43 polluted Areas of Concern in the Great Lakes Basin, largely because of impaired water quality conditions in the Don River and the Inner Harbour. The discharges from combined sewer overflows (CSOs) and storm sewers were identified as the principal sources of pollution.

In 2003, Toronto City Council approved the City-wide Wet Weather Flow Master Plan (WWFMP) to mitigate the impacts of stormwater runoff and combined sewer overflow (containing a mixture of untreated sewage and polluted stormwater) discharges. The 25 year Plan identified a series of projects for implementation, with the ultimate goal of improving water quality conditions and ecosystem health in all six watersheds across the City, and along the waterfront; and thereby advancing the delisting of Toronto as an Area of Concern in the Great Lakes Basin.

In 2008, the Don and Waterfront Trunk Sewers and CSO Control Strategy Municipal Class Environmental Assessment (also referred to as the Don River and Central Waterfront Project) was initiated to provide a comprehensive systems integration approach, in one complete project, to incorporate:

i) the wet weather flow control projects identified in Study Area 1 of the WWFMP for combined sewer overflows and stormwater discharges to the Don River and the Central Waterfront;

ii) infrastructure upgrades necessary to ensure operational security for the Coxwell Sanitary Trunk Sewer; and

iii) upgrades necessary to meet the longer term servicing needs within the Don Trunk and Waterfront Interceptor Sewer System (to support the future growth requirements in accordance with the City's Official Plan and Waterfront Revitalization Plan).

The Environmental Study Report included a conceptual level design of the preferred solution (refer to Attachment 1) which intercepts CSO discharges from 50 outfalls, representing most of the remaining CSO discharges in the City. The Project provides a high level of CSO control equivalent to one overflow per outfall location, per typical year and ensures improvement to water quality conditions in the Don River and Central Waterfront. Since there are no designated recreational swimming beaches in the Don River and Central Waterfront, the level of CSO control proposed, exceeds the requirements set by the Ontario Ministry of the Environment Procedure F-5-5 for Combined Sewer Overflows. Professional services for preliminary and detailed design are required to advance the project. The estimated cost for construction of the preferred solution as presented in the Environmental Study Report was estimated at $1.5 billion net of HST.

This integrated solution or Wet Weather Flow (WWF) System, presented in Attachment 1 addresses wet weather flows and sanitary servicing needs in one complete system. The design elements consist of:

a) Sanitary Trunk Sewer System
   i) Coxwell Bypass Tunnel consists of a 10.5 km sewer, in tunnel, to provide a bypass (and thus redundancy) to the entire existing Coxwell Sanitary Trunk Sewer, the City's most critical trunk sanitary sewer servicing about 30% of the City (approximately 750,000 residents). Currently, the City has no ability to reroute sewage flows in the event of an emergency such as structural failure or to allow for periodic maintenance.
   ii) Four underground storage tanks for offline storage of peak sanitary flows where additional capacity is required to service the forecasted growth within the Don Sanitary Trunk Sewershed.

b) Wet Weather Flow Collection and Storage System
   i) Three interconnected tunnels connected to 15 underground vertical storage shafts (30 metres in diameter) which will collect and store combined sewer overflows and convey these flows to a new high-rate wet weather flow treatment facility, through a new integrated wet and dry weather wastewater pumping station, located at the Ashbridges Bay Wastewater Treatment Plant.
   ii) The three tunnels include the Coxwell Bypass (10.5 km); Taylor-Massey Creek Tunnel (6.0 km); and Inner Harbour West Tunnel (5.5 km).
   iii) Three underground storage tanks for offline storage of combined sewer overflows from four remote outfall locations.
   iv) Connection of 50 existing combined sewer overflow and four existing storm sewer outfalls, via diversion and drop structures to the three tunnels noted in (ii).
   v) Implementation of a computerized Real Time Control System for the waterfront interceptor system (Mid-Toronto Interceptor) to maximize storage of CSOs.

One of the system design innovations is using the Coxwell Bypass Tunnel to serve dual purposes: provide redundancy of operation for the existing Coxwell Sanitary Trunk Sewer as noted above, however, it's principal use will be to store and convey CSO flows, once all the existing CSO outfalls are connected, to the above-noted integrated wastewater pumping station. The stored CSO flows will then be pumped to a new high rate treatment facility to be located at the Ashbridges Bay Wastewater Treatment Plant.

At its meeting of September 7, 2011, the Public Works & Infrastructure Committee requested that the General Manager, Toronto Water, finalize the Environmental Study Report for the Don River and Central Waterfront Class Environmental Assessment and submit it to the Ontario Ministry of the Environment (MOE) for the obligatory 30 day public review period under the Municipal Class Environmental Assessment process. The Committee also directed that, subject to receiving approval of the Environmental Assessment from the Ontario MOE, that the General Manager, Toronto Water, proceed to

undertake the detailed design of the first phase of the Project, which represents the twinning of the Coxwell Sanitary Trunk Sewer and associated pumping station; and that the Chief Financial Officer report back on an implementation schedule and a long term funding model for the remaining elements of the plan. A copy of the Decision Document can be found at:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2011.PW7.6 .

Although the Environmental Study Report identified the need for 15 underground vertical storage shafts, the siting of these components has been the source of concern for many communities, and further pressure exists to secure lands such as the Keating Railyard where nine underground vertical storage shafts had been planned. Therefore, through the preliminary design phase of this assignment, other design options will be considered through detailed hydraulic analyses, which may reduce the number of underground storage shafts required.

Further, the Waterfront Sanitary Master Servicing Plan was also recently completed, following the Municipal Class Environmental Assessment process. The Plan was developed to identify the necessary sanitary sewer system upgrades, necessary to service the development growth along the waterfront and Port Lands area, as shown in Attachment 2. A copy of the Plan can be obtained at:
http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=8fd78da78b151410VgnVCM10000071d60f89RCRD.

While the preferred solution, labelled as Alternative 2B, recommended a series of local gravity trunk sewers along Commissioners Street, Leslie Street and Unwin Avenue, a new pumping station in the East Bayfront Precinct, and upgrades to the existing pumping station network, another option (Alternative 5) proposed a deep gravity sewer, in tunnel, along the waterfront, and would provide for the decommissioning of three existing sanitary sewer pumping stations located along the waterfront. Alternative 5 was more costly and required a longer delivery time, and was therefore rejected in favour of the preferred solution. However, given that the WWF System incorporates a deep tunnel across the waterfront to intercept and convey CSOs discharging to the Central Waterfront area, there may be an opportunity to incorporate the sanitary sewer servicing needs within the design of the WWF System (e.g., sanitary trunk sewer within CSO tunnel). This will be further explored through the preliminary design phase of this assignment.

At its meeting of September 24, 2013, the Executive Committee, in considering a report by the City Manager on Impacts from the July 8, 2013 Storm Event titled "Impacts from the July 8, 2013 Storm Event on the City of Toronto", requested the that the General Manager, Toronto Water report to the Public Works & Infrastructure Committee, on March 4, 2013, on the construction of detention tanks in the Don River Watershed as part of the implementation of the Wet Weather Flow Master Plan. A copy of the Executive Committee Decision Document can be found at:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.EX34.4

Owing to the scale of the preferred solution and funding availability, the system will be constructed in stages as outlined below.

Stage 1 - Coxwell Bypass Tunnel (shown as a solid line in Attachment 3): This stage includes a 10.5 km sewer, in tunnel, to provide a bypass (and thus redundancy) to the entire existing Coxwell Sanitary Trunk Sewer. This stage of the system is to be designed and constructed first, and funding for the construction of this project has been included in Toronto Water's 2014 Capital Budget and 2015 to 2023 Capital Plan, at a total estimated project cost of $203M. This tunnel will intercept the flows from 27 CSO outfalls.

Stage 2 - Taylor-Massey Creek Tunnel (shown as a dashed line in Attachment 3): The second stage includes a 6.0 km sewer, in tunnel, and its connection to the Coxwell Bypass. This tunnel will intercept the flows from 11 CSO outfalls. Funding for the construction of this project has been included in Toronto Water's 2015 to 2023 Capital Plan, at a total estimated project cost of $173M.

Stage 3 - Offline Storage Facilities (shown in Attachment 4): The third stage includes four underground dry weather flow storage facilities to support the projected future growth needs within the sewershed; and three wet weather flow offline storage facilities, as well as the forcemain connections and pumping facilities to convey stored wet weather flows to the WWF System.

Stage 4 - Inner Harbour West Tunnel (shown as a dotted line in Attachment 3): The fourth stage includes the Inner Harbour West Tunnel (approximately 5.5 km) and its connection to the Coxwell Bypass Tunnel. This tunnel will intercept the flows from 12 CSO outfalls.

Stage 5 - CSO & Storm Outfall Connections and Vertical Storage (outfalls shown as crosses and storage as hatched circles in Attachment 3): The fifth stage includes connections from the existing 50 CSO and 4 storm outfalls to the system tunnels constructed in Stages 1 to 5, and any additional vertical storage components which may be required.

Other components of the Wet Weather Flow System, including an Integrated Pumping Station, a High Rate Treatment Facility, and a Real Time Control System for the existing Mid-Toronto Interceptor, will be designed under separate assignments.

COMMENTS

A Request for Proposals (RFP) was prepared by Engineering & Construction Services, with Toronto Water, in conjunction with the Purchasing & Materials Management Division to provide professional engineering services, which includes the following:

i) Preliminary engineering design for project Stages 1 through 5 (noted above), which includes:
   a. Detailed hydraulic modelling to further assess the CSO storage elements and the potential incorporation of a waterfront sanitary trunk sewer noted above, and integrating these design elements with a new sanitary sewer and wet weather flow pumping station at the Ashbridges Bay Wastewater Treatment Plant;

b. Preliminary geotechnical investigations of the entire WWF System to ensure that there are no subsurface conditions that would necessitate a change in tunnel alignment that could adversely affect system performance; and
c. Detailed geotechnical investigations of the entire WWF System will be undertaken to make certain that geotechnical data reports are available to designers (production of such reports requires significant time owing to the large number of boreholes required) in order to reduce the design schedule for future Stages.

ii) Establish critical design criteria for all elements and Stages of the WWF System;

iii) Detailed design for Stage 1 – Coxwell Bypass Tunnel, including public consultation and stakeholder outreach to help ensure that the design of above-ground facilities blends into the local surroundings and integrates with natural and Park features; and

iv) Construction administration for Stage 1 – Coxwell Bypass Tunnel.

The Request for Proposal also included provisions for professional engineering services to act as an advisor to the City (through a provisional allowance) when subsequent Stages are designed and constructed to ensure that the design criteria have been properly interpreted and applied, and that the WWF System operates as intended.

RFP 9117-12-7210 was issued by the Purchasing & Materials Management Division (PMMD) on September 30, 2013 and was available for download in PDF format on the City's Internet website. The RFP included the selection criteria to be used for evaluation. A Fairness Monitor, Knowles Consultancy Services Inc. was engaged by the City to oversee the procurement process. A voluntary information meeting was held on October 31, 2013 at which 15 firms attended. This resulted in a total of six (6) submissions being received on December 6, 2013 from the following firms:

1. AECOM Canada Ltd.
2. Black & Veatch Canada Company
3. CH2M Hill Canada Limited
4. GHD Inc.
5. Hatch Mott MacDonald Ltd.
6. Parsons Brinckerhoff Halsall Inc.

The RFP was structured as a "two-envelope" model, each submission included a detailed Technical Proposal (Envelope 1) and a separate sealed envelope with a Cost of Services Proposal (Envelope 2). All six (6) proponents complied with the mandatory submission requirements, and their Technical Proposals were evaluated. A formal selection committee comprised of six (6) members from Engineering & Construction Services, and Toronto Water, evaluated each of the Technical Proposals. The proponents' Technical submissions were first evaluated and scored independently, in accordance with the pre-established criteria and the RFP evaluation guide provided by PMMD specifically for this

project. The scores were then jointly reviewed by all members of the selection committee under the guidance of PMMD and the Fairness Monitor.

Scores were assigned based on the content of the Technical Proposal as well as referenced appendices. A maximum of 80 points were allocated for the Technical Proposals and 20 points for the Cost of Services. As required in the RFP, the detailed written proposals included a separate, sealed Cost of Services envelope. The selection process stipulated that the envelope containing the Cost of Services proposal would not be reviewed until the evaluation of the Technical Proposals was completed, and a score exceeding the minimum technical threshold score (noted below) had been achieved. Each Technical Proposal had to score a minimum of 60.0 points (75%) to have the Cost of Services envelope opened and evaluated. AECOM Canada Ltd., GHD Inc. and Hatch Mott MacDonald Ltd. did not meet the minimum technical score and, consequently, did not have their Cost of Services envelope opened.

The Technical Proposals from Black & Veatch Canada Company, CH2M Hill Canada Limited, and Parsons Brinckerhoff Halsall Inc. exceeded the minimum technical threshold score and these firms were invited for interviews to obtain further clarification of their Technical Proposals. After the interviews were completed, technical scoring was adjusted to reflect the clarifications, where applicable, and the Cost of Services envelopes were opened, and scored in compliance with the criteria specified in the RFP. The Technical scores along with the Cost of Services scores were summed, resulting in overall total scores for the three proponents ranging from 77.3 to 84.4 (out of 100).

On completion of the above process, the proposal from Black & Veatch Canada Company was ranked first with the highest overall point score. The selection committee concluded that the proposal submitted by Black & Veatch Canada Company met the requirements of the RFP and demonstrated a satisfactory level of effort for the proposed project. A total contingency allowance of $12,500,000.00 (net of HST) is also being requested to accommodate any additional professional engineering services that could arise, due to the complex nature of this project and the inherent risks associated with tunnel construction, particularly given the known difficult ground conditions.

The fee proposal from Black & Veatch Canada Company is competitive in comparison with other submissions for this project. Black & Veatch Canada Company was judged as having the necessary experience with projects of a similar size and complexity, as well as possessing the capabilities to provide the necessary services. Therefore, it is recommended that Black & Veatch Canada Company be retained to provide professional engineering services for this project.

Proponent's scores and staff analysis of the evaluation results can be provided to Councillors in an in-camera presentation if requested by members of Council.

The Fair Wage Office has reported that the recommended firm has indicated that it has reviewed and understands the Fair Wage Policy and Labour Trades requirements and has agreed to comply fully.

Fairness Monitor
The firm of Knowles Consultancy Services were retained through a competitive bidding process to act as Fairness Monitor for this RFP. The Fairness Monitor's scope of work included the following:

- addressing any concerns relating to accountability/fairness (monitoring the level of openness, transparency and competitiveness of the procurement process);
- independent assurance of integrity of the procurement process with a signed attest statement for the RFP;
- preparing a Final Attest Report for the City that may be provided to Public Works & Infrastructure Committee;
- presenting report findings to committee members, if required.

The Fairness Monitor concluded that the RFP process satisfied the principles of openness, fairness, consistency and transparency. The Attestation Report from the Fairness Monitor on the RFP Evaluation Process is included as Attachment 5.

CONTACTS

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SIGNATURES

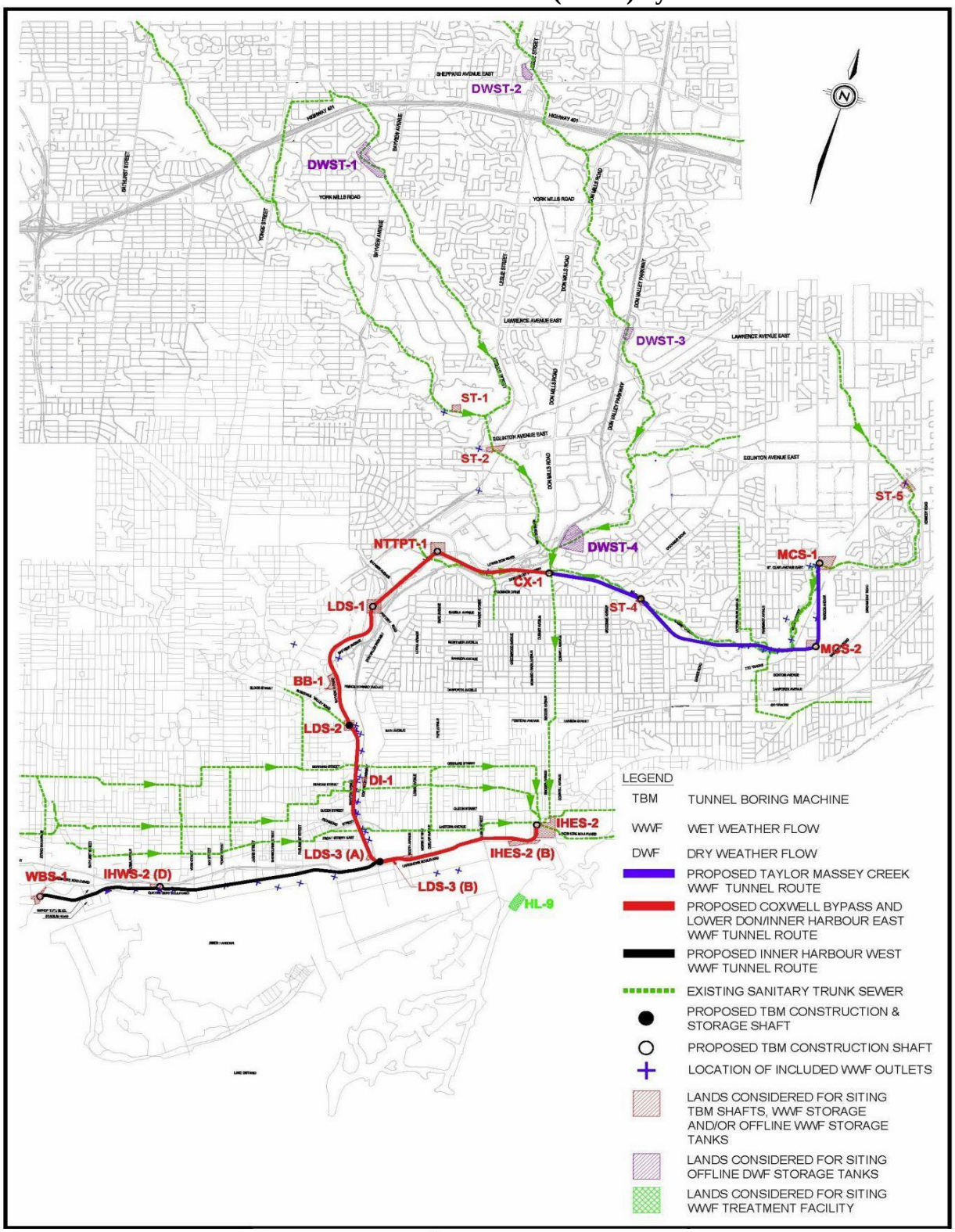
Michael D'Andrea, M.E.Sc., P.Eng.
Executive Director
Engineering & Construction Services

Michael Pacholok
Director
Purchasing & Materials Management

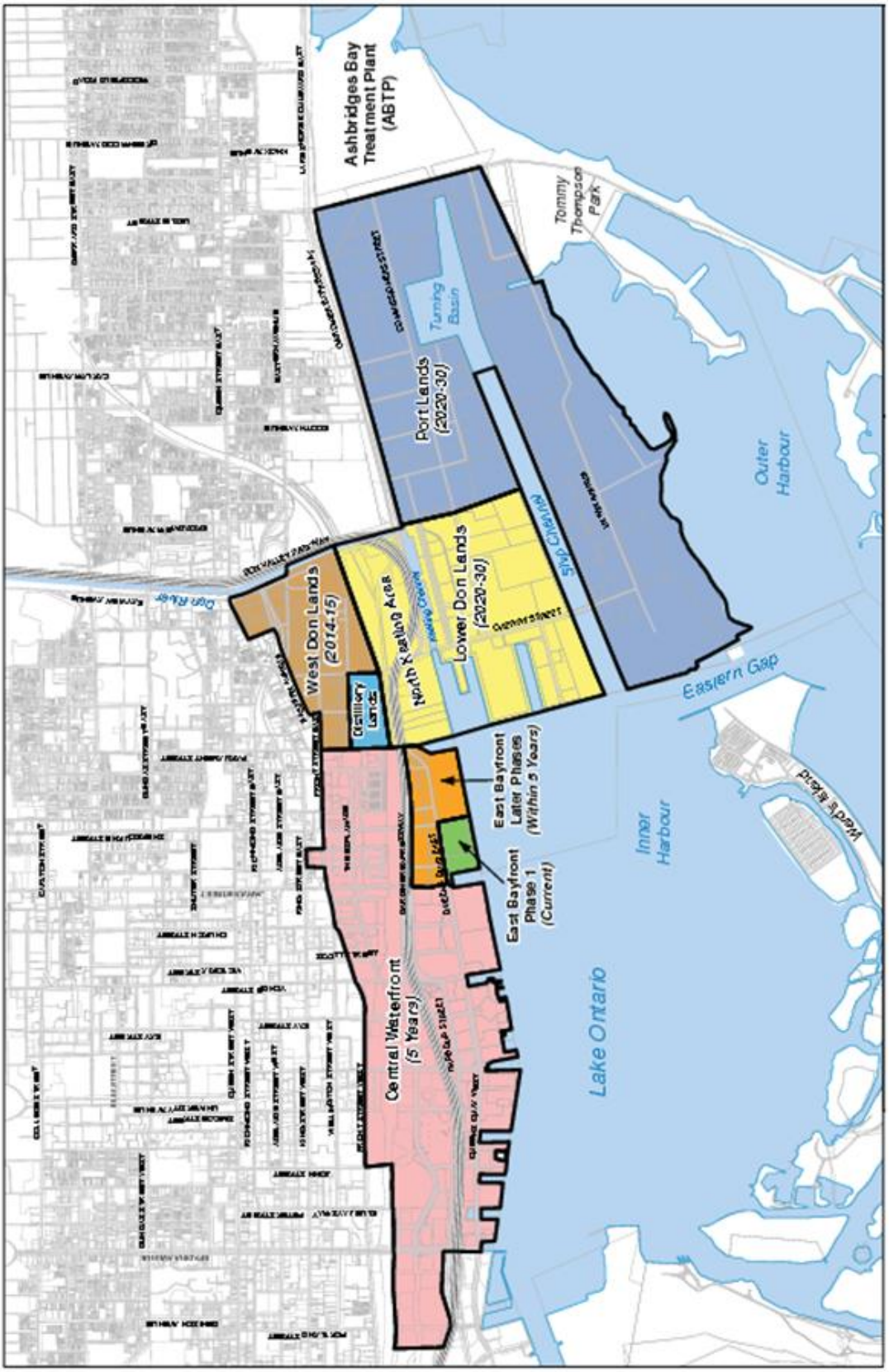
Attachments:

Attachment 1: Wet Weather Flow (WWF) System
Attachment 2: Waterfront Servicing Area Study
Attachment 3: WWF System Tunnel Components
Attachment 4: WWF System Offline Storage Facilities
Attachment 5: Fairness Monitor Attestation Report

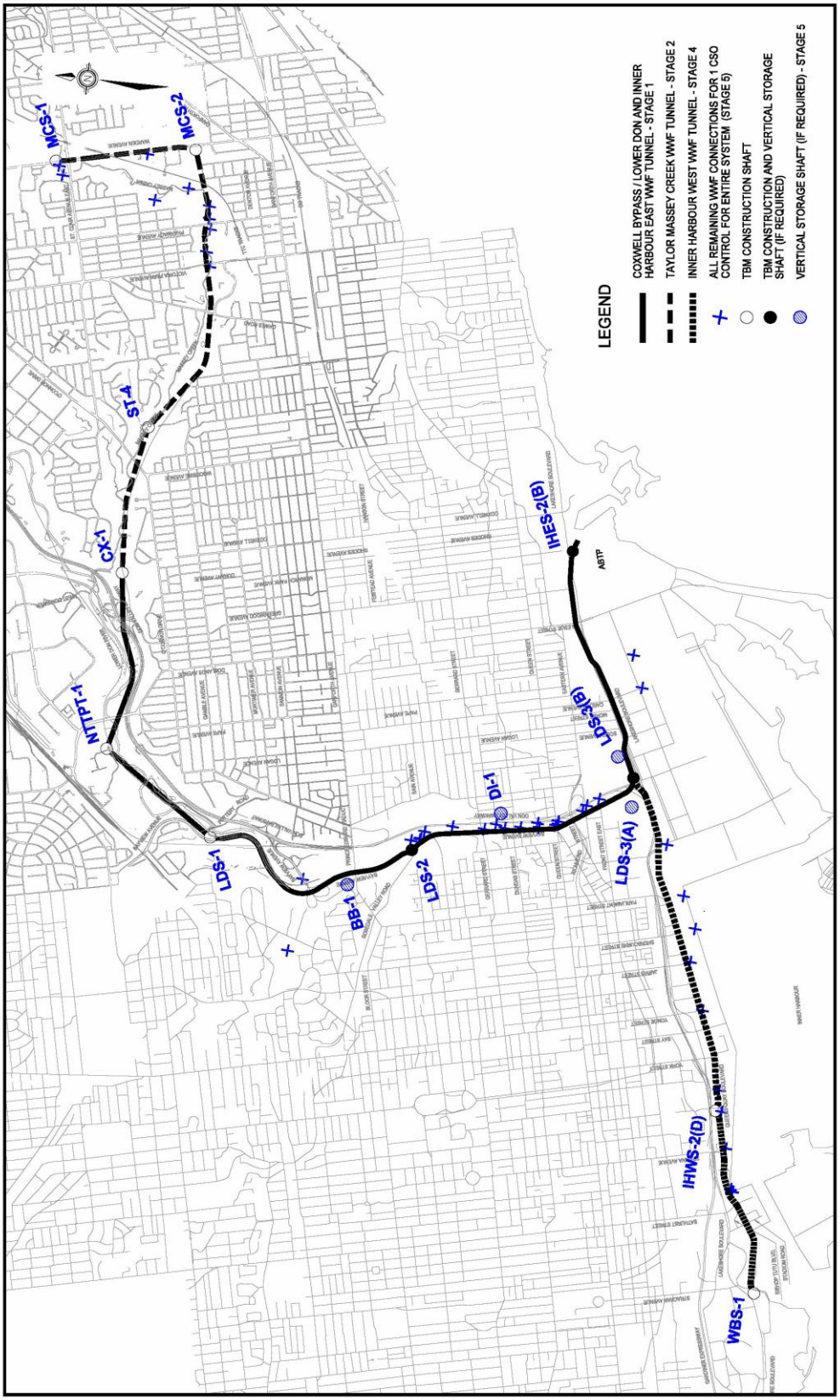
Attachment 1 – Wet Weather Flow (WWF) System



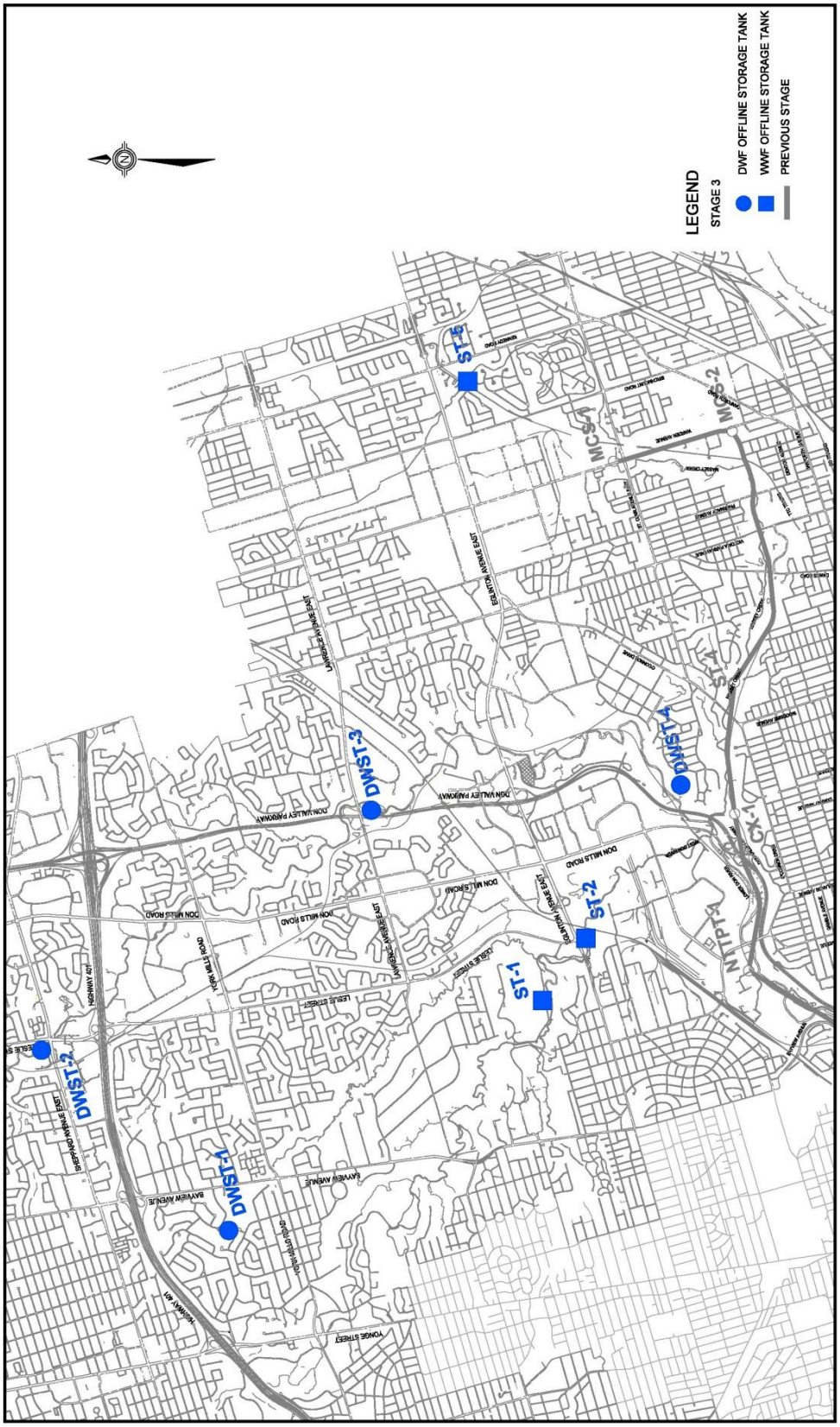
Attachment 2 - Waterfront Sanitary Master Servicing Plan Study Area



Attachment 3 – WWF System Tunnel Components



Attachment 4 - WWF System Offline Storage Facilities



Attachment 5 Fairness Monitor Attestation Report

Knowles
A Hill International Company

February 18, 2014

Allison Phillips
Senior Corporate Buyer
Purchasing and Materials Management Division
City Hall, 19th Floor, West Tower
100 Queen Street West
Toronto, Ontario M5H 2N2

Dear Ms. Phillips:

Re: Request for Proposal (RFP) 9117-13-7210 Professional Services for Design and Construction Administration Wet Weather Flow System - Final Attest Report

Knowles Consultancy Services Inc. was retained to act as Fairness Consultant for the captioned procurement. Our responsibilities included but were not limited to the following:

- Review of drafts of the RFP to identify inconsistencies and lack of clarity
- Review of the evaluation criteria with respect to clarity and consistency
- Attendance at the voluntary proponents' meeting
- Oversight of communications during the RFP open period, including addenda
- Ensuring that selection committee members (evaluators) were briefed on best practices with respect to principles and duties of fairness; confidentiality of vendor submissions; conflict of interest; undue influence; scoring procedures; and, the retention of documents.
- Attendance at selection committee consensus evaluation sessions
- Monitoring and reporting of any deviations from the process established in the RFP, conflicts of interest or the exercise of undue influence over the process

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- Assessment of the procurement evaluation process

The report is based on our first hand observations of the process used and information provided by the procurement project team. Any other person who wishes to review this report must first obtain the written permission of the City of Toronto. Knowles and the individual author of this report bear no liability for opinions that unauthorized persons may infer from this report.

The RFP was issued on September 30, 2013 as a two envelope system. Envelope one (1) being the technical response and envelope two (2) being the Cost of Service response. A total of six (6) addenda were issued during the opening stage.

The RFP clearly stated the mandatory requirements, process and the technical requirements as well as the evaluation criteria and points allocation, including minimum scores in several categories. It designated a single point of contact and explained the process for communication during the open period. It stated the closing time and established the following steps in the evaluation process:

1. Review of each proposal by procurement staff to determine whether it met the mandatory process and technical requirements set out in the RFP.

2. Evaluation of the proposals against scored evaluation criteria set out in the RFP, except price.

3. Evaluation of price.

The RFP closed on December 6, 2013 and a total of six (6) Proposals were received from six (6) proponents before the closing time.

All proposals received were deemed to be compliant with the mandatory requirements and were referred to the evaluation team for the technical evaluation.

The technical evaluation of the six (6) proposals was performed by a selection committee consisting of six (6) members from Engineering and Construction Services and Toronto Water. The committee evaluated the proposals individually over a period of two (2) weeks. The committee then met as a group to review the proposals and arrived at an average score for each criterion.

In accordance with the RFP evaluation criteria, three (3) proponents passed the technical scoring threshold of 75% (or 60 points out of 80). The three (3) proponents who passed the minimum technical threshold score were invited for interviews to obtain further clarification of their Technical Proposals. After the interviews were completed, technical scoring was adjusted to reflect the clarifications, where applicable, and the three (3) proposals that passed the technical threshold score proceeded to the pricing evaluation, envelope two.

Evaluation of the pricing component was conducted by the evaluation team in accordance with the RFP evaluation criteria. Technical and pricing scores were combined to arrive at a total evaluated RFP score for the three (3) proponents. The total scores were discussed and reviewed by PMMD and the selection committee to arrive at a highest scoring Proponent.

As fairness monitors, we can attest to the following:

- Care was taken to develop selection criteria that objectively reflected the legitimate needs of the City and to produce an RFP that was clear and consistent.
- Communications during the RFP open period and after closing were conducted through a single point of contact and in accordance with the RFP.
- Selection committee members brought a broad range of knowledge and experience to their work and were qualified to evaluate the proposal.
- The selection committee was briefed on best practices with respect to principles and duties of fairness; confidentiality of vendor submissions; conflict of interest; undue influence; scoring procedures; and, the retention of documents. The City's procurement staff provided an evaluation process workbook to each evaluator to guide their conduct during the evaluation.
- The evaluators performed their work diligently and made appropriate reference to the fairness consultant and PMMD.
- Evaluators viewed the proposal objectively and adhered to the criteria established in the RFP as well as the detailed scoring guide developed for the purpose.
- Discussion during evaluation scoring sessions was fulsome and a free exchange of views took place.
- No evaluator or other individual exerted undue influence over the process.
- The procurement and evaluation processes were conducted in accordance with the information published to the proponents in the RFP.

We are not aware of the existence of any conflict of interest or breach of confidentiality.
In summary, the procurement process was conducted in a fair, open and transparent manner.

Yours truly,

Knowles Consultancy Services Inc.
Paul Cook,
Fairness Consultant

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