



THE CITY OF WINNIPEG

REQUEST FOR PROPOSAL

RFP NO. 672-2018

**REQUEST FOR PROPOSAL FOR PROFESSIONAL CONSULTING SERVICES FOR
THE MCPHILLIPS REGIONAL PUMPING STATION AND TACHE BOOSTER
PUMPING STATION MCC REPLACEMENT AND ELECTRICAL UPGRADES
DETAILED DESIGN AND CONTRACT ADMINISTRATION**

Proposals shall be submitted to:

**The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 REQUEST FOR PROPOSAL FOR PROFESSIONAL CONSULTING SERVICES FOR THE MCPHILLIPS REGIONAL PUMPING STATION AND TACHE BOOSTER PUMPING STATION MCC REPLACEMENT AND ELECTRICAL UPGRADES DETAILED DESIGN AND CONTRACT ADMINISTRATION

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, September 21, 2018

B2.2 Proposals determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Project Manager identified in D2 (Project Manager) or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. SITE INVESTIGATION

B3.1 The Project Manager or an authorized representative will conduct a Site investigation tour of the McPhillips Regional Pumping Station and the Tache Booster Pumping Station on:

(a) Tuesday, August 14, 2018 at 9:00 am.

B3.1.1 Proponents are requested to register for the Site investigation at least 48 hours in advance by contacting the Project Manager identified in D2.

B3.2 The Site investigation will start at the McPhillips Regional Pumping Station located at 360 McPhillips Street.

(a) Proponents must provide their own transportation between the facilities.

(b) Proponents will not be permitted to walk through the facilities unattended.

B3.3 Tours of each facility will be limited to areas directly related to the motor control centre (MCC) replacement and electrical upgrades.

B3.4 Although attendance at the Site investigations is not mandatory, the City of Winnipeg (City) strongly suggests that Proponents attend.

B3.5 The Proponent shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Proponent's direct observation, or is provided by the Project Manager in writing.

B3.6 Proponents wishing to register for the Site investigation must provide the Project Manager with a Public Safety Verification search obtained not earlier than one (1) year prior to the Site investigation.

(a) The Public Safety Verification Check may be obtained from Sterling Talent Solutions. Proponents will need to set up a Sterling Talent Solutions account prior to requesting individual background checks. This process should be done 72 hours prior to requesting the first check. The account can be setup using the following link:

<https://forms.sterlingbackcheck.com/partners/platform2-en.php?&partner=winnipegcity>

Note that the check will take up to 48 hours to complete. See PART E - Security Clearance for further information.

(b) The results of the Public Safety Verification Check must be received by the City directly through Sterling Talent Solutions. Proponents must set up an account with Sterling Talent

Solutions under their company name and grant Sterling Talent Solutions permission to share the results of the Public Safety Verification Check with the City of Winnipeg.

- B3.7 Proponents are required to bring their own personal protective equipment for all Site investigations. This included a CSA approved safety footwear and a hard hat.
- B3.8 Proponents will not be allowed to take pictures at the Site investigation. The Proponent may request pictures of specific areas from the Project Manager. The pictures will then be made available for download in electronic portable document (PDF) by request to the Project Manager after completion of a Non-Disclosure Agreement.
- B3.9 Proponents are advised that Site access is restricted and access to view the Site can only be made under supervision of the City.

B4. ENQUIRIES

- B4.1 All enquiries shall be directed to the Project Manager identified in D2.
- B4.2 If the Proponent finds errors, discrepancies or omissions in the Request for Proposal, or is unsure of the meaning or intent of any provision therein, the Proponent shall promptly notify the Project Manager of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.
- B4.3 If the Proponent is unsure of the meaning or intent of any provision therein, the Proponent should request clarification as to the meaning or intent prior to the Submission Deadline.
- B4.4 Responses to enquiries which, in the sole judgment of the Project Manager, require a correction to or a clarification of the Request for Proposal will be provided by the Project Manager to all Proponents by issuing an addendum.
- B4.5 Responses to enquiries which, in the sole judgment of the Project Manager, do not require a correction to or a clarification of the Request for Proposal will be provided by the Project Manager only to the Proponent who made the enquiry.
- B4.6 All correspondence or contact by Proponents with the City in respect of this Request for Proposal must be directly and only with the City's Project Manager. Failure to restrict correspondence and contact to the Project Manager may result in the rejection of the Proponents Proposal Submission.
- B4.7 The Proponent shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Project Manager in writing.

B5. CONFIDENTIALITY

- B5.1 Information provided to a Proponent by the City or acquired by a Proponent by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Project Manager. The use and disclosure of the Confidential Information shall not apply to information which:
- (a) was known to the Proponent before receipt hereof; or
 - (b) becomes publicly known other than through the Proponent; or
 - (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.
- B5.2 The Proponent shall not make any statement of fact or opinion regarding any aspect of the Request for Proposal to the media or any member of the public without the prior written authorization of the Project Manager.

B6. ADDENDA

- B6.1 The Project Manager may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Request for Proposal, or clarifying the meaning or intent of any provision therein.
- B6.2 The Project Manager will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B6.3 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B6.4 The Proponent is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B6.5 The Proponent shall acknowledge receipt of each addendum in Paragraph 9 of **Form A: Proposal**. Failure to acknowledge receipt of an addendum may render a Proposal non-responsive.

B7. PROPOSAL SUBMISSION

- B7.1 The Proposal shall consist of the following components:
- (a) **Form A: Proposal** (Section A) in accordance with B8; and
 - (b) **Form B: Fees** (Section B) in accordance with B9.
- B7.2 The Proposal should also consist of the following components:
- (a) Experience of Proponent and Subconsultants (Section C) in accordance with B10;
 - (b) Experience of Key Personnel Assigned to the Project (Section D), in accordance with B11;
 - (c) Project Understanding and Methodology (Section E) in accordance with B12;
 - (d) Project Schedule (Section F) in accordance with B13; and
 - (e) **Form P: Person Hours** in accordance with B12.
- B7.3 Further to B7.1 all components of the Proposal shall be fully completed or provided in the order indicated, and submitted by the Proponent no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Proposal.
- B7.4 Further to B7.2, all components of the Proposal should be fully completed or provided in the order indicated, and submitted by the Proponent no later than the Submission Deadline, with all required entries made clearly and completely.
- B7.5 Proponents should submit one (1) unbound 8.5" x 11" original (marked "original") including drawings and six (6) copies (copies can be in any size format) for sections identified in B7.1 and B7.2.
- B7.6 Proposal format, including type of binding, number of pages, size of pages and, font, etc., will not be regulated, except that the Proposal should contain a table of contents, page numbering and should be in the Sections identified above. Proponents are encouraged to use their creativity to submit a Proposal which provides the requested information for evaluation and other information which illustrates the strength of their team.
- B7.7 Proponents are advised that inclusion of terms and conditions inconsistent with the Request for Proposal, will be evaluated in accordance with B22.1(a).
- B7.8 The Proposal shall be submitted enclosed and sealed in an envelope/package clearly marked with the Request for Proposal number and the Proponent's name and address.

B7.9 Proposals submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B7.10 Proposals shall be submitted to:

The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B7.11 Any cost or expense incurred by the Proponent that is associated with the preparation of the Proposal shall be borne solely by the Proponent.

B8. PROPOSAL (SECTION A)

B8.1 The Proponent shall complete **Form A: Proposal**, making all required entries.

B8.2 Paragraph 2 of **Form A: Proposal** shall be completed in accordance with the following requirements:

- (a) if the Proponent is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;
- (b) if the Proponent is a partnership, the full name of the partnership shall be inserted;
- (c) if the Proponent is a corporation, the full name of the corporation shall be inserted;
- (d) if the Proponent is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

B8.2.1 If a Proposal is submitted jointly by two (2) or more persons, each and all such persons shall identify themselves in accordance with B8.2.

B8.3 In Paragraph 3 of **Form A: Proposal**, the Proponent shall identify a contact person who is authorized to represent the Proponent for purposes of the Proposal.

B8.4 Paragraph 122 of **Form A: Proposal** shall be signed in accordance with the following requirements:

- (a) if the Proponent is a sole proprietor carrying on business in his/her own name, it shall be signed by the Proponent;
- (b) if the Proponent is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Proponent is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
- (d) if the Proponent is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B8.4.1 The name and official capacity of all individuals signing **Form A: Proposal** should be printed below such signatures.

B8.5 If a Proposal is submitted jointly by two (2) or more persons, the word "Proponent" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Proponents in the Proposal and the Contract, when awarded, shall be both joint and several.

B9. FEES (SECTION B)

B9.1 The Proponent shall complete **Form B: Fees**, making all required entries and summarizing all Fees for the Scope of Services.

- (a) Include a Fixed Fee for all phases of the work listed in D5, except for Contract Administration: Resident Services;
 - (i) The Fee for As-Built Drawings shall be \$42,000.00, to be paid upon satisfactory completion of the As-Built Drawings as described in D5.9.
- (b) Include a Time-Based Fee for Contract Administration: Resident Services described in D5.8:
 - (i) The proposal should include a Time-Based Fee schedule calculated on a time basis for Resident Services.
 - (ii) Time-Based Fees should be based on one (1) inspector providing inspection services as described in D5.8.
 - (iii) For proposal purposes these fees should be based on 1,800 hours of inspection.
 - (iv) The number of hours listed in B9.1(b)(iii) is to be considered approximate only. The City will use this number for the purpose of comparing bids.
 - (v) The number of hours for which payment will be made to the Consultant for Resident Services is to be determined by the actual amount of hours worked by the Consultant.

B9.2 General Requirements for Time-Based Fee Services

- (a) An estimated minimum number of hours is indicated in the Request for Proposal for Contract Administration: Resident Services to guide the Proponent in developing their fee proposal.
- (b) The estimated minimum number of hours indicated is based upon the Proponent utilizing experienced personnel who are familiar with the City's requirements and procedures performing the work. Additional hours may be required for less experienced personnel; fewer hours may be required for more experienced personnel.
- (c) Where the proposed number of hours deviates significantly from the estimated minimum number of hours indicated in the Request for Proposal, the Proponent should provide a detailed explanation of the fees and how the scope of work will be accomplished.
- (d) The Fees proposed by the Proponent in **Form B: Fees** shall constitute an upset limit. Ensure the hours proposed are sufficient to complete the specified work.

B9.3 Adjustments to Fees will only be considered based on increases to the Scope of Services.

B9.3.1 The City will not consider an adjustment to the Fees based on changes in the Project budget or the Final Total Construction Cost.

B9.3.2 The City will not consider an adjustment to the Fees based on increases to hourly rates.

- (a) The Proposal shall identify and detail all rate escalations including salary adjustments.
- (b) The total Fee in the Proposal shall include all escalations.

B9.3.3 If the City requires additional services, the rates to be used will be based on the rates provided in the Proponent's Proposal.

B9.4 The Fee Proposal shall also include an allowance for Allowable Disbursements as defined in C1.1(b), but shall exclude the costs of any materials testing, soils and hazardous materials investigation during construction.

B9.5 Notwithstanding C11.1, Fees submitted shall not include the Goods and Services Tax (GST) or Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

B9.6 Payments to Non-Resident Consultants are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. EXPERIENCE OF PROPONENT AND SUBCONSULTANTS (SECTION C)

B10.1 Proposals should include:

- (a) details demonstrating the history and experience of the Proponent and Subconsultants in providing design, management of the project and contract administration services on **three (3)** projects of similar complexity, scope and value.
- (b) if applicable, at least **one (1)** of the **three (3)** reference projects described in B10.1(a) should be a City project relevant to the scope of services listed in D5.

B10.2 For each project listed in B10.1(a), the Proponent should submit:

- (a) description of the project;
- (b) role of the consultant;
- (c) project's original contracted cost and final cost;
 - (i) where the original contracted cost and final cost differ, the Proponent should submit an explanation.
- (d) design and schedule (anticipated project schedule and actual project delivery schedule, showing design separately);
 - (i) where the anticipated project schedule and the actual project delivery schedule differ, the Proponent should submit an explanation.
- (e) project owner;
- (f) reference information (consisting of two (2) current names with telephone numbers and email addresses per project).

B10.2.1 Where applicable, information should be separated into Proponent and Subconsultant project listings.

B10.3 The Proposal should include general firm profile information, including years in business, average volume of work, number of employees and other pertinent information for the Proponent and all Subconsultants.

B11. EXPERIENCE OF KEY PERSONNEL ASSIGNED TO THE PROJECT (SECTION D)

B11.1 The Proponent should describe their approach to overall team formation and coordination of team members.

B11.1.1 Include an organizational chart for the Project.

- (a) Clearly identify Subconsultants to be engaged by the Proponent on the organizational chart.

B11.2 The Proponent should identify the following key personnel assigned to the Project:

- (a) project manager;
- (b) design leaders;
- (c) lead resident engineer.

B11.3 For evaluation purposes, higher scores will be given to key personnel with experience in similar roles in comparable projects.

B11.4 Submit the experience and qualifications of the key personnel assigned to the Project for projects of similar complexity, scope and value, including at a minimum:

- (a) proposed role and responsibilities on this Project;
- (b) core capabilities and/or technical skills;
- (c) educational background and degrees;
- (d) professional registration;
- (e) job title;
- (f) years of experience in current position;

- (g) years of experience related to the Scope of Services identified in D5 and in a similar role as proposed for this Project; and
- (h) years of experience with existing employer.

B11.5 Identify roles of each of the key personnel in the Project and who they will report to on this Project and include this information in the organizational chart referred to in B11.1.1.

B11.6 For each key personnel, list at least **two (2)** comparable projects in which they have played a primary role similar to that proposed for this Project. If a project selected for a key person is included in B10, provide only the project name and the role of the key person. For other projects provide the following:

- (a) Description of project;
- (b) Role of the Person;
- (c) Project owner; and
- (d) Reference information (consisting of two (2) current names with telephone numbers and email addresses per project).

B12. PROJECT UNDERSTANDING AND METHODOLOGY (SECTION E)

B12.1 Describe your firm's project management approach and team organization during the performance of Services using project specific details, so that the evaluation committee has a clear understanding of the methods the Proponent will use in the delivery of this Project. The methods should include:

- (a) activities to be performed outside the City of Winnipeg either by the Proponent's staff or by Subconsultants. Identify proposed arrangements involving out-of-town staff to participate in coordination and review functions; and
- (b) the collaborative process/method to be used by the key personnel of the team in the various phases of the Project.

B12.2 Proponents should provide an overview of their quality management system used to demonstrate sophisticated levels of management, scope control, cost control, schedule control, quality control, and communications and how it is proposed these will be applied specifically to this Project.

B12.3 Proposals should address:

- (a) the methodology that the Proponent intends to use to carry out the Scope of Services;
 - (i) methodology should be presented in accordance with the Scope of Services identified in Part D5.
- (b) the team's understanding of the broad functional and technical requirements by:
 - (i) clearly identifying and explaining work activities;
 - (ii) stating assumptions and interpretations of the Scope of Services;
 - (iii) stating the Proponents' understanding of the constraints that will affect the work;
 - (iv) indicating activities and services to be provided by the City; and
 - (v) stating other information that conveys the Proponent's understanding of the Project requirements.

B12.4 The Proposal should include **Form P: Person Hours** for all disciplines and or phases identified in D5 Scope of Services.

B12.4.1 The total Fees on **Form P: Person Hours** should match Fees submitted in response to B9.

B12.5 Proponents may use **Form P: Person Hours** or a table of their own design provided it includes all information requested on **Form P: Person Hours**.

- B12.6 For each person identified in B11.2, list the percent of time to be dedicated to the Project in accordance with the Scope of Services identified in D5.
- B12.7 Proponents shall not substitute or replace key personnel throughout the duration of the Project without written approval of the Project Manager.
- (a) Experience and qualification as specified in B11 shall be submitted for all requested substitute(s) and replacement(s).

B13. PROJECT SCHEDULE (SECTION F)

- B13.1 Proponents should present a carefully considered Critical Path Method schedule using Microsoft Project or similar project management software, complete with resource assignments (key designers), durations (weekly timescale) and milestone dates or events. The schedule should address each requirement of the Scope of Services.
- B13.2 The Proponent's schedule should include:
- (a) work breakdown structure;
- (b) resource assignments (all resources);
- (c) durations (weekly timescale);
- (d) milestone dates or events;
- (e) critical dates for review and approval processes by the City and other organizations;
- (f) project meetings
- (g) submission dates for required Deliverables.
- B13.3 The schedule should be based upon the critical stages listed in D9.

B14. DISCLOSURE

- B14.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.
- B14.2 The Persons are:
- (a) AECOM Canada Ltd.
- (b) Pinchin Environmental Ltd.
- (c) SNC-Lavalin Inc.
- B14.3 The following reports were prepared by the organizations identified in B14.2 (and are also listed in **Appendix B – Relevant Documents**):
- (a) Water Pumping Stations Power Reliability Study, SNC-Lavalin Inc., 2008
- (b) Asbestos Building Materials Survey of City of Winnipeg, Water and Waste Department, Tache Booster Pumping Station, Pinchin Environmental Ltd., 2007
- (c) Asbestos Building Materials Survey of City of Winnipeg, Water and Waste Department, McPhillips Street Pumping Station and Reservoir, Pinchin Environmental Ltd., 2007
- (d) McPhillips Pumping Station Arc Flash Study, SNC-Lavalin Inc., 2011
- (e) Tache Pumping Station Arc Flash Study, SNC-Lavalin Inc., 2011
- (f) McPhillips Control Centre Arc Flash Study, SNC-Lavalin Inc., 2013
- (g) McPhillips Pumping Station MCC Replacement Preliminary Design, SNC-Lavalin Inc., 2013

- (h) Preliminary Design for the Tache Booster Pumping Station and Surge Tower Upgrades, AECOM Canada Ltd., 2017
- (i) Final Asbestos Reassessment: Tache Booster Pumping Station, Pinchin Environmental Ltd., 2017
- (j) Final Asbestos Reassessment: McPhillips Street Pumping Station, Pinchin Environmental Ltd., 2017

B14.4 The reports listed in B14.3 and **Appendix B – Relevant Documents** are available in electronic portable document format (PDF) by request to the Project Manager after completion of a Non-Disclosure Agreement.

B15. CONFLICT OF INTEREST AND GOOD FAITH

B15.1 Proponents, by responding to this RFP, declare that no Conflict of Interest currently exists, or is reasonably expected to exist in the future.

B15.2 Conflict of Interest means any situation or circumstance where a Proponent or Key Personnel proposed for the Work has:

- (a) other commitments;
- (b) relationships;
- (c) financial interests; or
- (d) involvement in ongoing litigation;

that could or would be seen to:

- (i) exercise an improper influence over the objective, unbiased and impartial exercise of the independent judgment of the City with respect to the evaluation of Proposals or award of the Contract; or
- (ii) compromise, impair or be incompatible with the effective performance of a Proponent's obligations under the Contract;
- (e) has contractual or other obligations to the City that could or would be seen to have been compromised or impaired as a result of its participation in the RFP process or the Project; or
- (f) has knowledge of confidential information (other than confidential information disclosed by the City in the normal course of the RFP process) of strategic and/or material relevance to the RFP process or to the Project that is not available to other proponents and that could or would be seen to give that Proponent an unfair competitive advantage.

B15.3 In connection with its Proposal, each entity identified in B15.2 shall:

- (a) avoid any perceived, potential or actual Conflict of Interest in relation to the procurement process and the Project;
- (b) upon discovering any perceived, potential or actual Conflict of Interest at any time during the RFP process, promptly disclose a detailed description of the Conflict of Interest to the City in a written statement to the Project Manager; and
- (c) provide the City with the proposed means to avoid or mitigate, to the greatest extent practicable, any perceived, potential or actual Conflict of Interest and shall submit any additional information to the City that the City considers necessary to properly assess the perceived, potential or actual Conflict of Interest.

B15.4 Without limiting B15.3, the City may, in its sole discretion, waive any and all perceived, potential or actual Conflicts of Interest. The City's waiver may be based upon such terms and conditions as the City, in its sole discretion, requires to satisfy itself that the Conflict of Interest has been appropriately avoided or mitigated, including requiring the Proponent to put into place such policies, procedures, measures and other safeguards as may be required by and be acceptable to the City, in its sole discretion, to avoid or mitigate the impact of such Conflict of Interest.

- B15.5** Without limiting B15.3, and in addition to all contractual or other rights or rights at law or in equity or legislation that may be available to the City, the City may, in its sole discretion:
- (a) disqualify a Proponent that fails to disclose a perceived, potential or actual Conflict of Interest of the Proponent or any of its Key Personnel;
 - (b) require the removal or replacement of any Key Personnel proposed for the Work that has a perceived, actual or potential Conflict of Interest that the City, in its sole discretion, determines cannot be avoided or mitigated;
 - (c) disqualify a Proponent or Key Personnel proposed for the Work that fails to comply with any requirements prescribed by the City pursuant to B15.4 to avoid or mitigate a Conflict of Interest; and
 - (d) disqualify a Proponent if the Proponent, or one of its Key Personnel proposed for the Project, has a perceived, potential or actual Conflict of Interest that, in the City's sole discretion, cannot be avoided or mitigated, or otherwise resolved.
- B15.6** The final determination of whether a perceived, potential or actual Conflict of Interest exists shall be made by the City, in its sole discretion.

B16. QUALIFICATION

- B16.1** The Proponent shall:
- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Proponent does not carry on business in Manitoba, in the jurisdiction where the Proponent does carry on business; and
 - (b) be financially capable of carrying out the terms of the Contract;
 - (c) have all the necessary experience, capital, organization, and equipment to perform the Services in strict accordance with the terms and provisions of the Contract.
- B16.2** The Proponent and any proposed Subconsultant (for the portion of the Services proposed to be subcontracted to them) shall:
- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>
- B16.3** The Proponent and/or any proposed Subconsultant (for the portion of the Services proposed to be subcontracted to them) shall:
- (a) have successfully carried out services for the programming, design, management of construction and contract administration for architectural and/or engineering projects of similar complexity, scope and value; and to those required for this Project; and
 - (b) be fully capable of performing the Services required to be in strict accordance with the terms and provisions of the Contract; and
 - (c) have a written workplace safety and health program, if required, pursuant to The Workplace Safety and Health Act (Manitoba);
 - (d) have the knowledge and resources to administer the requirements of The Workplace Safety and Health Act (Manitoba) during the construction works associated with this Contract;
 - (e) undertake to meet all licensing and regulatory requirements of the appropriate governing authorities and associations in the Province of Manitoba; and
 - (f) upon request of the Project Manager, the Security Clearances as identified in PART E - Security Clearance.

B16.4 The Proponent shall submit, within three (3) Business Days of a request by the Project Manager, further proof satisfactory to the Project Manager of the qualifications of the Proponent and of any proposed Subconsultant.

B16.5 The Proponent shall provide, on the request of the Project Manager, full access to any of the Proponent's equipment and facilities to confirm, to the Project Manager's satisfaction, that the Proponent's equipment and facilities are adequate to perform the Services.

B17. OPENING OF PROPOSALS AND RELEASE OF INFORMATION

B17.1 Proposals will not be opened publicly.

B17.2 After award of Contract, the names of the Proponents and the Contract amount of the successful Proponent and their address(es) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>

B17.3 The proponent is advised any information contained in any Proposal Submission may be released if required by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).

(a) To the extent permitted, the City shall treat as confidential information, those aspects of a Proposal Submission identified by the Proponent as such in accordance with and by reference to Part 2, Section 17 or Section 18 or Section 26 of The Freedom of Information and Privacy Act (Manitoba), as amended.

B17.4 Following the award of Contract, a Proponent will be provided with information related to the evaluation of his/her submission upon written request to the Project Manager.

B18. IRREVOCABLE OFFER

B18.1 The Proposal(s) submitted by the Proponent shall be irrevocable for the time period specified in Paragraph 10 of **Form A: Proposal**.

B18.2 The acceptance by the City of any Proposal shall not release the Proposals of the other responsive Proponents and these Proponents shall be bound by their offers on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any offer shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 10 of **Form A: Proposal**.

B19. WITHDRAWAL OF OFFERS

B19.1 A Proponent may withdraw his/her Proposal without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B19.1.1 The time and date of receipt of any notice withdrawing a Proposal shall be the time and date of receipt as determined by the Manager of Materials.

B19.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of **Form A: Proposal** or the Proponent's authorized representatives named in Paragraph 12 of **Form A: Proposal**, and only such person, has authority to give notice of withdrawal.

B19.1.3 If a Proponent gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

(a) retain the Proposal until after the Submission Deadline has elapsed;

(b) open the Proposal to identify the contact person named in Paragraph 3 of **Form A: Proposal** and the Proponent's authorized representatives named in Paragraph 12 of **Form A: Proposal**; and

- (c) if the notice has been given by any one of the persons specified in B19.1.3(b), declare the Proposal withdrawn.

B19.2 A Proponent who withdraws its Proposal after the Submission Deadline but before its offer has been released or has lapsed as provided for in B18.2 shall be liable for such damages as are imposed upon the Proponent by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B20. INTERVIEWS

B20.1 The Project Manager may, in his/her sole discretion, interview Proponents during the evaluation process.

B21. NEGOTIATIONS

B21.1 The City reserves the right to negotiate details of the Contract with any Proponent. Proponents are advised to present their best offer, not a starting point for negotiations in their Proposal Submission.

B21.2 The City may negotiate with the Proponents submitting, in the City's opinion, the most advantageous Proposals. The City may enter into negotiations with one or more Proponents without being obligated to offer the same opportunity to any other Proponents. Negotiations may be concurrent and will involve each Proponent individually. The City shall incur no liability to any Proponent as a result of such negotiations.

B21.3 If, in the course of negotiations pursuant to B21.2 or otherwise, the Proponent amends or modifies a Proposal after the Submission Deadline, the City may consider the amended Proposal as an alternative to the Proposal already submitted without releasing the Proponent from the Proposal as originally submitted.

B22. EVALUATION OF PROPOSALS

B22.1 Award of the Contract shall be based on the following evaluation criteria:

- | | |
|--|-------------|
| (a) compliance by the Proponent with the requirements of the Request for Proposal or acceptable deviation therefrom: | (pass/fail) |
| (b) qualifications of the Proponent and the Subconsultants, if any, pursuant to B16: | (pass/fail) |
| (c) Fees; (Section B) | 40% |
| (d) Experience of Proponent and Subconsultants; (Section C) | 10% |
| (e) Experience of Key Personnel Assigned to the Project; (Section D) | 25% |
| (f) Project Understanding and Methodology (Section E) | 20% |
| (g) Project Schedule. (Section F) | 5% |

B22.2 Further to B22.1(a), the Award Authority may reject a Proposal as being non-responsive if the Proposal Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Proposal, or waive technical requirements or minor informalities or irregularities if the interests of the City so require.

B22.3 Further to B22.1(b), the Award Authority shall reject any Proposal submitted by a Proponent who does not demonstrate, in its Proposal or in other information required to be submitted, that it is responsible and qualified.

B22.4 Further to B22.1(c), Fees will be evaluated based on Fees submitted in accordance with B9.

- B22.5 Further to B22.1(d), Experience of Proponent and Subconsultants will be evaluated considering the information provided in response to B10 including, but not limited to, the following criteria:
- (a) similarity of the Proponent's past projects to this Project;
 - (b) success of the Proponent on past projects; and
 - (c) past performance on City of Winnipeg projects, including but not limited to:
 - (i) adherence to project budget;
 - (ii) adherence to project schedule;
 - (iii) quality of work; and
 - (iv) overall satisfaction with the Proponent.
- B22.5.1 Proponents that have not worked with the City before will be evaluated based on the information provided in response to B10.1(a).
- B22.5.2 Proposals that receive less than half the available evaluation points for Experience of Proponent and Subconsultants may be rejected in accordance with B22.3.
- B22.6 Further to B22.1(e), Experience of Key Personnel Assigned to the Project will be evaluated considering the information provided in response to B11, including, but not limited to, the following criteria:
- (a) appropriateness of related years of experience of the key personnel;
 - (b) relevancy of experience of the key personnel; and
 - (c) appropriateness of approach to overall team formation and coordination of team members.
- B22.6.1 Proposals that receive less than half the available evaluation points for Experience of Key Personnel Assigned to the Project may be rejected in accordance with B22.3.
- B22.7 Further to B22.1(f), Project Understanding and Methodology will be evaluated considering the information provided in response to B12, including, but not limited to, the following criteria:
- (a) appropriateness of the project management approach;
 - (b) consistency and completeness of the methodology
 - (c) appropriateness of hours assigned to individual tasks per Person;
 - (d) Proponent's understanding of the Project, including its deliverables and its constraints; and
 - (e) demonstration of insight beyond the information that was presented in the Request for Proposal.
- B22.7.1 Proposals that receive less than half the available evaluation points for Project Understanding and Methodology may be rejected in accordance with B22.3.
- B22.8 Further to B22.1(g), Project Schedule will be evaluated considering the information provided in response to B13 including, but not limited to, the following criteria:
- (a) the completeness of the Project schedule; and
 - (b) the appropriateness of the timelines provided.
- B22.9 Notwithstanding B22.1(d) to B22.1(g), where Proponents fail to provide a response to B7.2(a) to B7.2(d), the score of zero may be assigned to the incomplete part of the response.
- B22.10 Proposals will be evaluated considering the information in the Proposal Submission and any interviews held in accordance with B20.

B23. AWARD OF CONTRACT

- B23.1 The City will give notice of the award of the Contract, or will give notice that no award will be made.

- B23.2 The City will have no obligation to award a Contract to a Proponent, even though one or all of the Proponents are determined to be responsible and qualified, and the Proposals are determined to be responsive.
- B23.2.1 Without limiting the generality of B23.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Services;
 - (b) the prices are materially in excess of the prices received for similar services in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Services, or a significant portion thereof, with its own forces;
 - (d) only one Proposal is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B23.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Proponent submitting the most advantageous offer.
- B23.4 The City may, at its discretion, award the Contract in phases.
- B23.5 Notwithstanding Paragraph 6 of **Form A: Proposal** and C4, the City will issue a Letter of Intent to the successful Proponent in lieu of execution of a Contract.
- B23.5.1 The Contract documents as defined in C1.1(o)(ii) in their entirety shall be deemed to be incorporated in and to form a part of the Letter of Intent notwithstanding that they are not necessarily attached to or accompany said Letter of Intent.
- B23.6 The form of Contract with the City of Winnipeg will be based on the Contract as defined in C1.1(o).
- B23.7 Following the award of Contract, a Proponent will be provided with information related to the evaluation of its Proposal upon written request to the Project Manager.
- B23.8 If, after the award of Contract, the Project is cancelled, the City reserves the right to terminate the Contract. The Consultant will be paid for all Services rendered up to time of termination.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Consultant Services* (Revision 2017-03-24) are applicable to the Services of the Contract.
- C0.1.1 The *General Conditions for Consultant Services* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm.
- C0.2 A reference in the Request for Proposal to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Consultant Services*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

- D1.1 In addition to the *General Conditions for Consultant Services*, these Supplemental Conditions are applicable to the Services of the Contract.
- D1.2 If there is any conflict or inconsistency between the Proposal and the *General Conditions for Consultant Services*, the *General Conditions for Consultant Services* shall take precedence.
- D1.3 Further to C1.1(b) and C11, the following is applicable to Allowable Disbursements:
- (a) Booking of transportation and accommodations are expected to take place well in advance to obtain optimal discounted rates;
 - (b) The acceptable standard for air travel shall be economy class;
 - (c) Air travel premium fees such as seat selection premiums etc. will not be reimbursable unless specifically approved by the Project Manager;
 - (d) The acceptable standard for accommodation will be a single room in a safe environment, conveniently located and comfortably equipped;
 - (e) The acceptable standard for rental vehicles shall be mid-size;
 - (i) Car rental premium fees, such as prepaid fuel or re-fuelling surcharges etc. will not be reimbursable unless specifically approved by the Project Manager;
 - (f) Costs for alcoholic beverages will not be reimbursable and shall not be claimed;
 - (g) Copies of originating merchant/vendor detail receipts shall be provided as backup documentation when invoicing Allowable Disbursements, credit/debit card receipts or statements are not acceptable as backup; and
 - (h) GST is to be removed from the reimbursable value of merchant/vendor invoices.
- D1.4 Monthly Invoices
- D1.4.1 In addition to C11.7, the Consultant shall submit monthly invoices for the Scope of Services.
- D1.4.2 Each invoice shall specify category III Consultant Services and tangible personal property of the category III Services as defined in the Province of Manitoba Tax Bulletin 058 at <http://www.gov.mb.ca/finance/taxation/pubs/bulletins/058.pdf>.
- D1.4.3 Project Management Services
- (a) All payments for Project Management Services will be made upon progress estimates approved by the Project Manager.
- D1.4.4 Detailed Design Services
- (a) All payments for Detailed Design Services will be made upon progress estimates approved by the Project Manager, with the following as maximums:
 - (i) A maximum of 60% of Detailed Design Services prior to submission of the draft bid opportunity package.
 - (ii) A maximum of 90% of Detailed Design Services upon submission of the final bid opportunity package.
 - (b) The remaining amount of Detailed Design Services will be paid out upon acceptance by the Project Manager of completion of all Detailed Design Services requirements, including, but not limited to the deliverables described in D5.6.13.
- D1.4.5 Contract Administration: Non-Resident Services

- (a) All payments for Contract Administration: Non-Resident Services will be made upon progress estimates approved by the Project Manager.
- D1.4.6 Contract Administration: Resident Services
 - (a) All payments for Contract Administration: Resident Services will be made on a time basis, as approved by the Project Manager.
 - (b) All allocated fees shall be considered upset limits.
- D1.4.7 As-Built Drawings
 - (a) The payment for As-Built Drawings shall be \$42,000 as described in B9.1(a)(i).
- D1.4.8 Post Construction Services
 - (a) All payments for Post Construction Services will be made upon progress estimates approved by the Project Manager.
- D1.4.9 It is expected that the values stated in **Form B: Fees** will form the basis for valuation of the completed work, for the purposes of payment via progress estimates. However, if in the opinion of the Project Manager, the values are “front loaded” such that the **Form B: Fees** prices reflect higher values for work that is sequenced earlier in the schedule, the Project Manager reserves the right to revise the payments as required to ensure that the total payment does not exceed the true value of the work performed.
- D1.4.10 Invoices shall be submitted in both paper copies and Native Formats.

D2. PROJECT MANAGER

- D2.1 The Project Manager is:
Erica Campbell, CET
Telephone No. 204 986-3150
Email Address: ecampbell@winnipeg.ca
- D2.2 At the pre-commencement meeting, the Project Manager will identify additional personnel representing the Project Manager and their respective roles and responsibilities for the Services.
- D2.3 Proposal Submissions must be submitted to the address in B7.

D3. DEFINITIONS

- D3.1 When used in this Request for Proposal:
 - (a) “City” means the City of Winnipeg.
 - (b) “HVAC” means Heating, Ventilation and Air Conditioning.
 - (c) “LED” means Light Emitting Diode.
 - (d) “LSIG” means Long Time, Short Time, Instantaneous and Ground Fault.
 - (e) “MCC” means Motor Control Centre.
 - (f) “PLC” means Programmable Logic Controller.
 - (g) “Project Manager” means the Project Manager identified in D2.
 - (h) “PRS” means the Power Reliability Study.
 - (i) “SCADA” means Supervisory Control and Data Acquisition.
 - (j) “TCP” means Transmission Control Protocol.
 - (k) “UPS” means Uninterruptible Power Supply.

D4. BACKGROUND

D4.1 McPhillips Regional Pumping Station

- (a) The current McPhillips Regional Pumping Station was built in 1968 and is one of the City of Winnipeg's three regional water pumping stations. These water pumping facilities are critical to the residents of Winnipeg and must continually remain in good working order. The failure of components within the main electrical distribution system at any of the pumping stations has the potential to disrupt the City's residential, commercial, and industrial water supplies.
- (b) The McPhillips Regional Pumping Station receives power from Manitoba Hydro via a single 4160 V electrical supply. The 4160 V supply is distributed via 4160V switchgear, which consists of three (3) starters for the three (3) 597 kW (800 HP) motor driven pumps and two (2) fused disconnect switches that feed two (2) 4160-600V transformers. One (1) transformer is dedicated to essential services and the other for non-essential services within the pumping station.
- (c) The essential bus is backed up by three (3) 600V, 100 kW natural gas powered standby generators, located in the nearby Collections Building. Two (2) of the generators are typically assigned to the pumping station in a primary/backup arrangement, while the third generator is assigned to the McPhillips Control Centre. These generators are designed to provide backup power to critical control systems, such as instrument air and ventilation during a power failure. The critical electrical components, such as the Programmable Logic Controllers (PLCs) and pump controls, are powered from a 120V 10 kVA Uninterruptible Power Supply (UPS), which in turn is powered by the generator backed up essential bus.
- (d) Switching the supply of the essential bus between utility power and standby generator power is performed by the 600V switchgear, which consists of air circuit breakers that are located within the MCC line-up. The 600V switchgear contains potential and current transformers for metering, as well as control power transformers that provide power to the breaker control circuit. Switching between utility power and generator power on the essential bus is performed automatically, though personnel can manually operate the breakers. Due to issues that the City has experienced with the automatic breaker transfer scheme, the City has installed a transfer switch with internal forces.
- (e) The essential and non-essential MCCs receive their power from the 600V switchgear. Note that there is currently no provision for powering the essential MCC from the non-essential transformer and switchgear.
- (f) The MCCs are of 1960's vintage and are nearing their end of life. Given that the electrical distribution equipment is critical to the operation of the pumping station, it is imperative that planned replacement is undertaken prior to equipment end of life.
- (g) In addition to the MCC replacement, several other heating, ventilation and air conditioning (HVAC), electrical, instrumentation and control issues have been identified and will be addressed as part of this Project.

D4.2 Tache Booster Pumping Station

- (a) The Tache Booster Pumping Station was constructed in 1950 and is used to boost the flow of water in the Branch 1 Aqueduct to the McPhillips Reservoir during periods of high customer demand or during special operating conditions such as when the Branch II Aqueduct is out of service. Currently, the Tache Booster Pumping Station operates infrequently; however, it is essential as a reliable means to refill the McPhillips Reservoir on a daily basis for unique or emergency operating conditions.
- (b) The incoming electrical service to the Tache Booster Pumping Station consists of an aerial supply to an exterior cable service rack from a 300kVA utility supplied pole mount transformer terminating at the main MCC. The existing utility transformer is not sufficiently sized to run all three (3) pumps at the booster station and needs to be upgraded.
- (c) The Main MCC is a 600A, 600V 3 phase MCC. The Main MCC feeds the distribution pumps, lighting panel board (and associated transformer), heaters and the UPS.

- (d) The Main MCC is over 60 years old and is nearing its end of life. Given that the electrical distribution equipment is critical to the operation of the pumping station, it is imperative that planned replacement is undertaken prior to equipment end of life.
- (e) In addition to the MCC replacement, several other electrical, instrumentation and control issues have been identified and will be addressed as part of this Project.

D4.3 Power Reliability Upgrades

- (a) In 2005, the City undertook an assessment of the risks associated with the electric power supply at each of the City's water pumping stations based on a greater frequency of service interruptions that had been experienced over the previous 10 to 15 years.
- (b) The study resulted in a number of recommendations to mitigate risks and improve station reliability. In particular, at the McPhillips Regional Pumping Station it was recommended to:
 - (i) replace the existing 4160V surge arrestors as they are of 1960s vintage and are obsolete;
 - (ii) install a new power quality meter as there is no means of permanent power quality measurement at the station;
 - (iii) power the hydrocarbon detector from UPS power as the current configuration results in alarms being generated due to power failure events.
- (c) The upgrades described in D4.3(b) will be undertaken as part of this Project to address the identified power reliability issues.

D4.4 Arc Flash Study Recommended Upgrades

- (a) The City has undertaken Arc Flash Studies for the McPhillips Regional Pumping Station, the McPhillips Control Centre and the Tache Booster Pumping Station. The Arc Flash Studies included assessment of potential arc flash hazards at the City facilities and recommendations to mitigate those hazards.
- (b) Electrical upgrades in the Collections Building, Chlorine Building and the McPhillips Control Centre were recommended to meet code requirements, improve coordination and to address equipment protection requirements.
- (c) Electrical upgrades at the Tache Booster Pumping Station were recommended to address the MCC and related equipment's age and obsolescence.
- (d) The Arc Flash Study recommended upgrades described in D4.4(b) and D4.4(c) will be undertaken as part of this Project.

D5. SCOPE OF SERVICES

- D5.1 Unless otherwise stated, **Appendix A** – Definition of Professional Consultant Services shall be applicable to the provision of Professional Engineering Services for this Project. These services are specific to Detailed Design and Contract Administration Services.
- D5.2 Refer to **Appendix B** – Relevant Documents for relevant documents to the Project. These documents are available in electronic PDF format by request to the Project Manager after completion of Non-Disclosure Agreement.
- D5.3 The Services required under this Contract shall consist of the following phases and as outlined in D5.5 to D5.10:
 - (a) Project Management;
 - (b) Detailed Design;
 - (c) Contract Administration: Non-Resident Services;
 - (d) Contract Administration: Resident Services;
 - (e) As-Built Drawings;
 - (f) Post Construction Services

D5.4 The following shall apply to the Services:

- (a) City of Winnipeg Green Building Policy: New City-Owned Buildings and major additions
<http://clkapps.winnipeg.ca/DMIS/DocExt/ViewDoc.asp?DocumentTypeld=2&DocId=5989>
- (b) Universal Design Policy
<http://clkapps.winnipeg.ca/DMIS/DocExt/ViewDoc.asp?DocumentTypeld=2&DocId=3604>
- (c) City of Winnipeg Water & Waste Department Electrical Design Guide
- (d) City of Winnipeg Water & Waste Department Identification Standard
 - (i) This standard is only applicable to new equipment. Existing equipment names shall be maintained as much as is practical to minimize impact to existing systems.
- (e) The City of Winnipeg Water & Waste Department Water and Wastewater Treatment Process – Drawing Standard.

D5.5 Project Management

D5.5.1 This phase shall include all Project Management activities required to carry out the Scope of Services.

D5.5.2 The Consultant's Project Manager shall be the prime contact with the City's Project Manager for the duration of the Project.

D5.5.3 The Consultant's Project Manager shall:

- (a) Direct and coordinate efforts of the Consultant's team to achieve the specific Project goals and objectives and to meet the City's requirements;
- (b) Provide advice, engineering Services, consultation, and oversight with respect to the Scope of Services;
- (c) Effectively oversee the Project in accordance with the construction contract documents and subsequent approved modifications;
- (d) Carry out its Services without relieving the contractor of their contractual and other legal obligations;
- (e) Request or coordinate the request of existing construction, as-built and/or record drawings;
- (f) Coordinate the contractor's work with the City's operations staff or representative; and
- (g) Coordinate with the City's Project Manager to ensure that all City stakeholders are afforded ample opportunity for input and review throughout the provision of the Services.

D5.5.4 The Consultant's Project Manager shall be directly responsible for:

- (a) Managing the Project in accordance with the project delivery plan described in D5.5.5;
- (b) Organising, chairing, providing minutes and agenda for monthly Project status meetings and presentations during the Detailed Design phase of the Project;
- (c) Liaising with the City's Project Manager on a weekly basis to provide Project status;
- (d) Submitting bi-weekly work plans during Contract Administration: Resident Services. The work plans shall indicate expected hours, personnel and tasks for the upcoming two (2) week period for the Consultant's personnel. No work shall proceed without the City's Project Manager's approval;
- (e) Submitting monthly consultant progress reports within one (1) week of month's end. The reports should utilize the latest version of the City's consultant progress report template (to be provided to the Consultant upon project award) and include the following as a minimum:
 - (i) Work carried out in the previous month, including person-hours worked;
 - (ii) Work in progress;
 - (iii) Work anticipated for the following month, including projected person-hours;

- (iv) Variances against baselines for scope, schedule, and cost;
 - (v) Updated estimated cost to complete for engineering and construction contracts;
 - (vi) Monthly s-curve with corresponding explanation;
 - (vii) Percentage completion of the overall Project and per phase;
 - (viii) Description, action and mitigation of extreme and high risk(s);
 - (ix) Information request for the following month;
 - (x) Issues to date;
 - (xi) Schedule and quality performance; and
 - (xii) Modifications to the project delivery plan (described in D5.5.5).
- (f) Coordinating access to the McPhillips Regional Pumping Station and the Tache Booster Pumping Station through the City's Project Manager or delegate during the Detailed Design phase;
- (g) Providing adequate notice (at least two (2) weeks) prior to any Site visit or work/shutdown that will require assistance from City personnel.
- (h) Submitting cash flow forecast to the City's Project Manager at the onset of the Project and then semi-annually (March and September).
- (i) This shall reflect cost to date as well as revised forecast.
 - (ii) Forecasts shall include both the Consultant's fees and the cost of construction.
 - (iii) Forecasts shall be presented by calendar year during the Fixed Fee period and in a monthly format during the Time-Based Fee period.
 - (iv) The cash flow format shall be presented in a format agreed to by the City.

D5.5.5 Project Delivery Plan

- (a) The Consultant shall submit a project delivery plan three (3) weeks after Project award.
- (b) The project delivery plan shall be specific to the Consultant's Scope of Services for the Project.
- (c) The project delivery plan shall utilize the latest version of the City's project delivery plan template. The City's project delivery plan template is available on the City Asset Management Program page at the City of Winnipeg, Corporate Finance, Infrastructure Planning Division website
<http://winnipeg.ca/finance/infrastructureplanning/camp.stm#4>
- (d) The plan shall include the following at a minimum:
- (i) Scope
 - ◆ Include the information required in B12.
 - ◆ Provide a Deliverable based work breakdown structure that identifies major elements relative to how the assignment will be managed and in terms of tangible and verifiable results (including milestones, critical triggers, Deliverables, % completion of design, posting to Materials Management site, etc.).
 - (ii) Financial
 - ◆ Include the information required in B9.
 - ◆ Include a description of the processes used to carry out earned value analysis such that the Consultant and contractor's performance can be measured against scope, schedule and cost baselines.
 - (iii) Schedule
 - ◆ Include the information required in B13.
 - ◆ The approved schedule will be used as the Project baseline.
 - (iv) Quality Management

- ◆ Describe the quality management system used to address quality planning, quality assurance and quality control.
- ◆ Include design review and approval processes addressing:
 - Engineering practice reviews;
 - Inter-discipline coordination;
 - Design verification / peer review;
 - Operability and maintainability review;
 - Constructability and cost reviews;
 - Design certification; and
 - City reviews.
- (v) Human Resources
 - ◆ Describe the team organization and management approach.
 - ◆ Include an organizational chart.
- (vi) Communication
 - ◆ Describe communication interfaces (organizational, technical and interpersonal) and the roles and responsibilities of each stakeholder.
 - ◆ Outline information needs, timeline for obtaining information and the method the information will be provided.
 - ◆ Identify the processes that will be used to liaise with the City throughout the provision of the Services and to provide ample opportunity for input and review by the various City stakeholders as applicable.
 - ◆ Describe the objectives, timing and frequency of Project meetings, workshops and presentations.
 - ◆ Describe the processes for tracking and monitoring Project documents through creation, checking, review, comment, verification, certification and approval processes.
- (vii) Risk Management
 - ◆ Develop a risk management plan identifying risk event causes, risk event outcomes, degree of certainty, effects on Project objectives, severity of risk, response/action(s) to be undertaken, contingency plan and associated costs to manage risks.
 - ◆ Outline process for updating the risk management plan in various phases of the Project.
 - ◆ The risk management plan shall be completed using the latest version of the City's Risk Management Plan template. The City's Risk Management Plan template is available on the City Asset Management Program page at The City of Winnipeg, Corporate Finance, Infrastructure Planning Division website <http://winnipeg.ca/finance/infrastructureplanning/camp.stm#4> .
- (viii) Change Control
 - ◆ Describe the integrated change control process for both the Consultant's Scope of Services and the construction contract.
 - ◆ Identify and include the documents, tracking system and approval processes necessary to authorize change to the assignment.
 - ◆ Project change control shall utilize the latest version of the City's Change Control Log template. The City's Change Control Log template is available on the City Asset Management Program page at The City of Winnipeg, Corporate Finance, Infrastructure Planning Division website <http://winnipeg.ca/finance/infrastructureplanning/camp.stm#4> .
 - ◆ Additional City change control templates are available for the Consultant's use and will be supplied by the City's Project Manager upon award of the project.

- (ix) Health, Safety and Security and Environment
 - ◆ Include a Health and Safety Plan (which will be updated as needed throughout the Project) specific to the Consultant's Scope of Services.
- (x) Commissioning
 - ◆ Include a high level commissioning strategy and commissioning implementation plan and outline the process to refine and update these as the Project progresses.
- (xi) Close Out
 - ◆ Prepare a list of closure activities and actions for each phase of the Consultant's Scope of Services.

D5.5.6 Project Management Deliverables

- (a) The following Deliverables shall apply to the Project Management phase of the work:
 - (i) Project delivery plan;
 - (ii) Agenda, PowerPoint presentation slides and meeting minutes during the Detailed Design phase;
 - (iii) Bi-weekly work plans during the Time-Based Fee period of the work listed in D5.8;
 - (iv) Monthly consultant progress reports;
 - (v) Cash flow forecasts.
- (b) Draft copies of the project delivery plan shall be provided in Native Format and PDF while final copies shall be submitted as PDF and one (1) hardcopy.
- (c) Draft and final copies of the agenda, meeting minutes, presentation slides, cash flow forecast, and monthly consultant progress reports shall be provided in Native Format and PDF.
- (d) Bi-weekly work plans shall be provided by email to the City's Project Manager.
- (e) Documents to be presented or reviewed in a meeting shall be issued a minimum of three (3) weeks prior to the presentation unless otherwise stated in the Scope of Work. Comments and/or decisions made at the applicable meeting shall be incorporated into the documents and shall be re-issued for approval.

D5.5.7 Project Management Meetings

- (a) Throughout the Project, the Consultant shall meet with City's project team to discuss findings and obtain input from City personnel. Meeting minutes are to be provided within one (1) week of the meeting date.
- (b) The Consultant shall hold with the City a minimum of:
 - (i) One (1) formal Project initiation meeting (held at the WTP);
 - (ii) Monthly Project status meetings during the Detailed Design phase.

D5.6 Detailed Design

D5.6.1 General

- (a) Collect and review all available existing information about the Site including files, reports, drawings, etc.
- (b) Where necessary conduct field surveys and investigations to verify existing conditions and to supplement available information.
 - (i) Any field investigations requiring an operational shutdown of the McPhillips Regional Pumping Station or the Tache Booster Pumping Station shall require a shutdown protocol as described in D5.7.4.
- (c) Re-identify equipment with new electrical feeders and/or controls to be consistent with the City of Winnipeg Water & Waste Department Identification Standard.

- (d) Identify all new equipment in accordance with the City of Winnipeg Water & Waste Department Identification Standard.

D5.6.2 Asbestos Containing Materials

- (a) Review City documentation detailing the location of asbestos containing materials within the City facilities.
- (b) Identify in a detailed document any areas where asbestos remediation is required.
- (c) The City may endeavor to abate the identified asbestos prior to the commencement of construction. If this is not possible, the bid opportunity package shall specify abatement requirements.
- (d) Specify, as required, replacement requirements for asbestos containing materials removed for inclusion in the bid opportunity package.

D5.6.3 Engineering Studies

- (a) Prepare a report summarizing the results of the following studies:
 - (i) A generator load study to ensure that the stand-by generator(s) for the McPhillips Regional Pumping Station can pick up the emergency loads without unacceptable voltage drop.
 - (ii) A short circuit study to ensure all of the electrical distribution equipment is adequately rated;
 - (iii) A coordination study to ensure selective tripping, in the event of a fault, occurs to the greatest extent possible; and
 - (iv) A review and update of the McPhillips Pumping Station, McPhillips Control Centre and Tache Pumping Station Arc Flash Studies to ensure that the design and equipment selection provides for appropriately low arc flash values.

D5.6.4 Installation Strategy

- (a) Examine Site constraints and develop an installation strategy for the new equipment considering:
 - (i) Operational requirements;
 - (ii) Scheduling of shutdowns of the pumping stations;
 - (iii) Site access;
 - (iv) Space restrictions;
 - (v) Lead times for delivery of new equipment; and
 - (vi) Seasonal variation in water flows - Installation work should not be performed during periods of high water demand (May to September) at the McPhillips Regional Pumping Station.

D5.6.5 Construction Work Plan, Schedule and Commissioning Plan

- (a) Develop and submit to the City for review and approval a construction work plan addressing Site constraints identified in previous reports (listed in **Appendix B – Relevant Documents**), a detailed Project schedule and a commissioning plan.
 - (i) Submission to be made prior to the commencement of the bid opportunity preparation.
 - (ii) Allow three (3) weeks for review of the submission package by City staff.
 - (iii) Arrange for a meeting with the City Project team to discuss their comments.
 - (iv) Submit final submission package addressing City Project team comments.

D5.6.6 Cost Estimate

- (a) Prepare a Class 1 cost estimate for all aspects of the work listed in D5.6.
- (b) The cost estimate shall be completed using the latest version of the City's Basis of Estimate template, available on the City Asset Management Program page at The City of Winnipeg, Corporate Finance, Infrastructure Planning Division website: <http://winnipeg.ca/finance/infrastructureplanning/camp.stm#4>

- (c) The cost estimate shall be determined using the American Association of Cost Engineering International Recommended Practices 17R-97 and 18R-97.
- (d) The Class 1 cost estimate is a prerequisite to issuing the bid opportunity.

D5.6.7 McPhillips MCC Replacement, Electrical, Automation and HVAC Upgrades

- (a) Provide a detailed design for the replacement of the essential and non-essential MCCs and HVAC, automation and electrical upgrades at McPhillips Regional Pumping Station.
 - (i) The detailed design shall be based on the July 2013 report "McPhillips Pumping Station MCC Replacement Preliminary Design" prepared by SNC-Lavalin Inc. (and as listed in **Appendix B** – Relevant Documents). Alternative designs will be considered but will require approval from the City.
- (b) Structural repairs include:
 - (i) Infill of any floor openings below existing equipment that are not re-utilized.
 - (ii) Modification to the entrance of the Chlorine Building Gallery as required to accommodate access to the new cable tray and possible pipe relocation.
- (c) HVAC upgrades include:
 - (i) Replacement of the existing 93 kW heating coil associated with the McPhillips Regional Pumping Station building.
 - ◆ At this stage, a 150 kW 4-stage heating coil has been assumed. Detailed design to include review of the minimum required winter ventilation rate and confirmation of sizing of the heating coil.
 - (ii) Installation of a new four-stage contactor control panel in the Mechanical Room.
- (d) Electrical grounding upgrades include:
 - (i) Installation of a new four or six rod electrode with 6m rods and a buried ground conductor around the building with appropriately spaced ground rods.
 - (ii) Connection of all new equipment to the grounding system.
 - (iii) Connection of the new grounding system to the existing grounding system.
- (e) Cable tray upgrades include:
 - (i) Installation of new cable trays as required to implement the proposed electrical work.
 - (ii) Installation of a new cable tray in the Chlorine Building Gallery.
 - (iii) Replacement of the existing pipe rack in the Chlorine Building Gallery. Piping shall be relocated as required to accommodate the new cable tray.
- (f) Motor starter upgrades include:
 - (i) Replacement of motor starters not currently located within the MCC with MCC-mounted motor starters, to allow for improved Regional Supervisory Control and Data Acquisition (SCADA) monitoring.
- (g) Medium voltage switchgear inspection and modifications include:
 - (i) Inspection of the 4160V electrical switchgear and provision of recommendations for refurbishment or replacement as required.
 - (ii) Replacement of the power meter on the 4160V switchgear with a new power meter capable of providing a Modbus Transmission Control Protocol (TCP) communication link between the Regional SCADA and the power meter.
 - ◆ The power quality meter shall be capable of high speed transient event recording.
- (h) 4160V-600V transformer upgrades include:
 - (i) Installation of two new 500 KVA 4160V-600V transformers to feed MCC-M710 and MCC-M720.
 - (ii) Installation of new primary and secondary cables to the transformers.

- (iii) Replacement of the 4160V fuses in the 4160V switchgear.
- (iv) Demolition of the existing transformers.
- (i) Main Building 600V upgrades include:
 - (i) Installation of two new non-essential intelligent MCCs, labelled as MCC-M710 and MCC-M720 in the current location of the essential MCC in the electrical room.
 - ◆ The two MCCs are to be connected via a tie breaker.
 - (ii) Installation of a new essential intelligent MCC, labelled as MCC-M730E on the west wall of the electrical room.
 - (iii) Installation of digital power metering for the new 600V MCCs to allow for effective maintenance and historical load calculation.
 - (iv) Installation of floor penetrations below new electrical equipment to facilitate routing of cabling through the floor.
 - (v) Installation of new cabling.
 - (vi) Installation of new conduits and disconnect switches as required.
 - (vii) Reallocation of loads between the non-essential and essential MCCs as discussed in the McPhillips Pumping Station MCC Replacement Preliminary Design Report.
 - (viii) Migration of loads from the existing MCCs to the new MCCs.
 - (ix) Installation of a new automatic power factor correction bank, labelled as PFC-M711, rated at 200 KVAR within the electrical room.
 - (x) Demolition of the existing MCCs and 600V switchgear.
 - (xi) As part of a separate project, the cooling systems will be upgraded at the McPhillips Regional Pumping Station. Cooling system upgrades will include replacement of;
 - ◆ the existing chiller system (used to maintain space temperatures within the facility)
 - ◆ the existing water cooling system with closed circuit fluid coolers (used to maintain safe operating temperatures for the natural gas engines and the fluid coupling for the electric motors).The detailed design of the MCC upgrade shall include provision to tie-in the upgraded cooling systems to the upgraded MCC.
- (j) Main Building 120/208V electrical upgrades include:
 - (i) Installation of new essential and non-essential 120/208V panelboards and associated transformers.
- (k) Chlorine Building upgrades include:
 - (i) Demolition of the existing 4-Plex MCC in the Chlorine Building.
 - (ii) Installation of a new MCC, labeled as MCC-C710, to feed non-essential loads.
 - (iii) Installation of a new MCC, labeled as MCC-C720E, to feed essential 600V loads.
 - (iv) Installation of a new 600-120/208V transformer labelled as XFMR-C711.
 - (v) Replacement of the existing Chlorine Building LP-C and Chlorine Building Parking lot panelboards with a single new panelboard, fed from the new transformer XFMR-C711.
 - (vi) Installation of a new 600-120/208V transformer and panelboard to replace the existing LP-D. The transformer will be powered directly from the essential MCC in the main building (MCC-730E).
- (l) Aqueduct Valve Chamber Electrical Upgrades include:
 - (i) Installation of a new UPS, fed from the existing PNL-B to feed a new UPS powered panelboard.

- ◆ Modify the electrical distribution as required in the valve chamber to power the PLC, flowmeter and networking for a minimum of four hours in the event of a power failure.
- ◆ The UPS is to be hardwired.
- (ii) Installation of additional battery based emergency lighting as appropriate for the installation.
- (m) Generator System Upgrades include:
 - (i) Demolition of the existing ventilation fan starters in the Collections Building Electrical Room.
 - (ii) Installation of a new MCC, labelled as MCC-G766, with four starters for the generator ventilation fans.
 - (iii) Installation of a transfer switch, labelled as ATS-G766, to feed the new MCC for the ventilation fans.
 - (iv) Installation of a new 100kW load bank for generator testing.
 - ◆ It is anticipated that the load bank would be outdoors, on a concrete pad, with bollards protecting the unit.
- (n) Lighting upgrades include:
 - (i) Review the proposed lighting upgrades described in the McPhillips Pumping Station MCC Replacement Preliminary Design Report.
 - (ii) Recommend and provide detailed design for lighting upgrades considering the reduction in light emitting diode (LED) light costs since preparation of McPhillips Pumping Station MCC Replacement Preliminary Design Report.
- (o) Automation upgrades include:
 - (i) Connection of the existing/new controls to the new motor starters as required.
 - (ii) Installation of a new custom local control panel, with alternator, to control the instrument air compressors.
 - (iii) Installation of a new ultrasonic level sensor/control panel package to control the sump pumps.
 - ◆ Provide a local panel with a Hand/Off/Auto switch for each pump.
 - (iv) All modification of the Station PLC and SCADA system will be by the City.
- (p) HVAC Automation upgrades include:
 - (i) Installation of a new PLC based control panel in the Mechanical Room.
 - (ii) Provision of PLC based control for the three supply fans.
 - (iii) Installation of new electric damper actuators on all eight existing Main Building dampers, with position feedback to the PLC.
 - ◆ The existing outdoor air damper has four pneumatic dampers and the return air damper has two actuators. It is assumed that a similar quantity of electric actuators will be required.
 - (iv) Installation of new duct and space temperature transmitters as required for temperature control, as shown on the P&IDs.
 - (v) Provision of new differential based flow sensors, or thermal dispersion type, for each supply fan.
 - (vi) Provision of new freeze-stats.
 - (vii) Interface with the new electric duct heater control panel to provide temperature control.
 - (viii) Provision of new flow and high temperature switches as required to provide safety for the electric heater.
 - (ix) Installation of duct-style smoke detectors in the air handling system that interface with the fire alarm system and the fan electrical controls.
 - (x) Interface of the fire alarm system with the HVAC PLC as required.

- (xi) Installation of new fire alarm panel to accommodate new duct smoke detectors and interface with the fire alarm system, the fan electrical controls and the HVAC PLC as required.
- (xii) Provision of PLC control of the three fan coils in the electrical room.
- (xiii) Provision of other new instrumentation and controls as required to implement the HVAC system.
- (xiv) PLC control systems shall be Schneider Electric PLCs to maintain compatibility with the City's existing PLC systems.
- (xv) All PLC programming shall be Unity Pro based to maintain consistency with the City's existing PLC programming.
- (xvi) All modifications to the SCADA system will be by the City. All development and commissioning of the HVAC PLC will be by the contractor.
- (xvii) As part of a separate project, the cooling systems at the McPhillips Regional Pumping Station will be upgraded as described in D5.6.7(i)(xi).
 - ◆ The chiller system to be installed to maintain space temperature as described in D5.6.7(i)(xi) will have its own control system which will control the chiller, the air cooled condenser and the associated pumps.
 - ◆ The detailed design of the HVAC automation upgrades shall include provision to incorporate the controls to maintain facility temperatures into the new HVAC PLC to be installed as part of this Project. Specifically, allowances should be made to enable the chiller through the new HVAC PLC system and monitor the following as a minimum CHILLER READY, CHILLER FAULTED, CHILLER RUNNING and MAXIMUM CAPACITY REACHED.
 - ◆ The controls for the cooling system to be installed to maintain safe operating temperatures of the natural gas engines and the fluid couplings for the electric motors as described in D5.6.7(i)(xi) shall be incorporated in the Regional SCADA as part of the cooling system upgrade project.
- (q) Emergency power system upgrades include:
 - (i) Review the alternatives included in the McPhillips Pumping Station MCC Replacement Preliminary Design Report for the emergency power system.
 - (ii) Provide recommendation for City approval on appropriate course of action for emergency power system.
 - ◆ Liaise with the Inspection Authority as necessary to determine appropriate course of action.
 - (iii) Provide detailed design services for City approved emergency power system alternative.

D5.6.8 Tache Booster Pumping Station MCC Replacement, Instrumentation and Electrical Upgrades

- (a) Provide a detailed design for the replacement of the MCC, instrumentation, and electrical upgrades at Tache Booster Pumping Station.
 - (i) The detailed design shall be based on the 2017 report "Preliminary Design for the Tache Booster Pumping Station and Surge Tower Upgrades" prepared by AECOM Canada Ltd, (and as listed in **Appendix B** – Relevant Documents). Alternative designs will be considered but will require approval from the City.
- (b) Main electrical service upgrades includes:
 - (i) Replacement of the main service and transformer with a minimum 500kVA pad mounted transformer.
 - (ii) Addition of a Customer Service Termination Enclosure external to the building.
 - (iii) Replacement of the existing 600V fused disconnect switches.
 - (iv) Consideration of provision of a portable generator connection to the station including a manual double throw safety switch.

- (c) MCC upgrades includes:
 - (i) Replacement and relocation of the 600A, 600V, 3 phase MCC with an intelligent MCC including all associated equipment including disconnect switches, transformers, electrical panels and cables and wiring.
 - (ii) Replacement of motor starters.
 - (iii) Replacement of the existing 120V lighting panel PNL-M12 with new panel LP-01.
 - (iv) Demolition of the existing MCC and related equipment.
- (d) Lighting upgrades includes:
 - (i) Replacement of facility lighting with LED high-bay fixtures.
 - (ii) Installation of exterior lights in high traffic areas, including entrance steps, walkways, loading ways, parking areas and exit doors.
 - (iii) Installation of additional emergency and exit lighting as required, fed from a battery.
- (e) Canadian Electrical Code Category 1 (Wet) Rating
 - (i) Review section 4.1.3 of the Preliminary Design for the Tache Booster Pumping Station and Surge Tower Upgrades Report and provide recommendation and detailed design regarding code requirements. Evaluation of insulation of pipes compared to upgrading electrical equipment (MCC, cables, conduits, receptacles and junction boxes) to conform to Category 1 (Wet) rating shall be included.
- (f) Fire alarm upgrades includes:
 - (i) Replacement of the existing fire alarm system.
- (g) Instrumentation and controls upgrades includes:
 - (i) Replacement of the existing building high/low temperature alarm thermostats (TH-600-TSH and TH-600-TSL) with a single temperature transmitter with a local temperature display.
 - ◆ Tie the new temperature transmitter into the existing PLC system.
 - (ii) Replacement of the existing orifice flow meter with a new magnetic flow meter.
 - (iii) Installation of a new ultrasonic level sensor in the surge tower. The existing pressure transducer shall remain in place as a backup level sensor.

D5.6.9 Power Reliability Upgrades

- (a) Provide a detailed design for the power reliability upgrades required at the McPhillips Regional Pumping Station
 - (i) The detailed design shall be based on the 2008 report "Power Reliability Study (PRS)" prepared by SNC-Lavalin Inc. (and as listed in **Appendix B** – Relevant Documents). This document is available in electronic PDF format by request to the Project Manager after completion of a Non-Disclosure Agreement. Alternative designs will be considered but will require approval from the City.
- (b) The detailed design shall address the following PRS recommendations for the McPhillips Regional Pumping Station:
 - (i) Replacement of the 4160V surge arresters (PRS Recommendation #28)
 - ◆ The existing arresters are of 1960's vintage and are obsolete.
 - (ii) Installation of a new power quality meter (PRS Recommendation #29)
 - ◆ No means of permanent power quality measurement is currently available at the McPhillips Regional Pumping Station.
 - ◆ The power quality meter shall be capable of high speed transient event recording.
 - (iii) Power the chlorine and hydrocarbon detectors from UPS power (PRS Recommendation #42).

- ◆ The hydrocarbon gas detector is not powered from UPS power resulting in alarms being generated due to power failure events.
- ◆ The hydrocarbon gas detector alarms should be connected to UPS power to prevent nuisance alarms.
- ◆ The City has migrated the chlorine detector to UPS power.

D5.6.10 Arc Flash Study Recommended Upgrades

- (a) Provide a detailed design for the arc flash study recommended upgrades at the McPhillips Regional Pumping Station and McPhillips Control Centre.
 - (i) The detailed design shall be based on the McPhillips Regional Pumping Station and McPhillips Control Centre Arc Flash Studies completed by SNC-Lavalin Inc. in 2011 and 2013 respectively (and as listed in **Appendix B** – Relevant Documents). Alternative designs will be considered but will require approval from the City.
- (b) The detailed design shall address the following recommendations from the McPhillips Regional Pumping Station Arc Flash Study:
 - (i) Replacement of the existing splitter “SPL-B1” located in the Electrical Room of the Collections Building with a new 600V distribution panel as described in Section 4.2.12 of the report and as shown in drawings 1-0640B-E001-001, 1-640B-E0002-001, 1-640B-E0003-001, 1-640B-E0004-001, 1-640B-E005-001 and 1-0640M-E0004-001 listed in **Appendix B** – Relevant Documents, including:
 - ◆ Replacement of the existing fused disconnects “FDS-B501 (noted as FDS-AC-B1 in the Arc Flash Study), FDS-OD-B1 and FDS-B610 (noted as FDS-AHU-B10 in the Arc Flash Study)” with breakers in the new 600V distribution panel; and
 - ◆ Replacement of the existing circuit breaker “CB-B710” with three new breakers in the new 600V distribution panel.
 - (ii) Replacement of the existing circuit breaker “CB-PNL-B10” located in the Air Conditioning Room in the Collections Building with a new 250 A breaker located in the Electrical Room of the Collections Building as described in Section 4.2.12 of the report.
- (c) The detailed design shall address the following recommendations from the McPhillips Control Centre Arc Flash Study:
 - (i) Replacement of the existing circuit breaker “CB-S710” with a new 125 A long time, short time, instantaneous and ground fault (LSIG) breaker as described in Sections 4.5 and 4.7 of the report.
 - (ii) Installation of a new wall mounted 50 A circuit breaker between transformer “XFMR-S712U” and panel “PNL-S712U” to provide code compliant overcurrent protection for the transformer as described in Section 4.7 of the report.
 - (iii) Relocation of transformer “XFMR-S702” out of the plenum ceiling as described in Section 4.6 of the report.

D5.6.11 Procurement

- (a) Consultant to review and advise on a Project procurement strategy. Consultant to recommend if the Project shall be split into two (2) bid opportunity packages (one for each pumping station) or if the Project shall be tendered as one (1) bid opportunity.
- (b) Prepare a draft bid opportunity package for all aspects of the work listed in D5.6, including detailed construction drawings, specifications and commissioning plan.
 - (i) Bid opportunity to include lowest Responsible Bidder to arrange and prepare expedited shop drawings for MCCs prior to award.
 - (ii) Bid opportunity to specify a complete set of acceptance tests for the contractor to perform to demonstrate that the completed installation is acceptable. The

tests shall be based upon InterNational Electrical Testing Association Acceptance Testing Specifications.

- ◆ Provide a set of test forms for the contractor to complete as part of the acceptance tests.
- (c) Submit one (1) electronic copy of the draft bid opportunity package for City review:
 - (i) The draft bid opportunity and specifications shall be submitted in Microsoft Word format.
 - (ii) The draft construction drawings shall be submitted in PDF format.
- (d) Allow a minimum of three (3) weeks for the City to review the draft bid opportunity package.
- (e) Conduct a meeting to review the City's comments on the draft bid opportunity.
- (f) Upon receipt of City review comments, submit one (1) electronic PDF copy of the final bid opportunity package.
- (g) Submit two paper copies and one (1) electronic PDF copy of the "Detailed Design Notes Package", including detailed engineering calculations, drawings, and criteria employed in the design(s).
- (h) Arrange for the advertisement of the bid opportunity with the City's Materials Management Division.
- (i) Provide appropriate response to bidders and advice to the City during the bid opportunity posting period.
- (j) Issue addenda to the bid opportunity, as required.
- (k) Arrange for and attend bidder's Site visit(s).
- (l) Evaluate the bids received and recommend an award of contract.

D5.6.12 Permits

- (a) Identify all permits necessary for construction.
- (b) Make application to public agencies (e.g. permits) upon City approval for necessary authorizations, prepare and submit reports and drawings thereto, and appear before the same in support of all applications.

D5.6.13 Detailed Design Deliverables

- (a) Report summarizing the results of the generator load study, short circuit study, coordination study and arc flash studies as described in D5.6.2(c).
- (b) Class 1 Cost Estimate as described in D5.6.6.
- (c) Installation Strategy as described in D5.6.4.
- (d) Draft and Final construction work plan, schedule and commissioning plan as described in D5.6.5.
- (e) Draft and Final Bid Opportunity documents as described in D5.6.11.
- (f) Detailed Design Notes Package as described in D5.6.11.
- (g) Bid Opportunity Addenda as described in D5.6.11.
- (h) Bid Opportunity Recommendation of Award as described in D5.6.11.
- (i) Permit Applications as described in D5.6.12.

D5.6.14 Detailed Design Meetings

- (a) Monthly progress meetings as described in D5.5.7(b)(ii).
- (b) Draft Construction Work Plan, Schedule and Commissioning Plan review meeting as described in D5.6.5(a)(iii).
- (c) Draft Bid Opportunity review meeting as described in D5.6.11(e)
- (d) Bidders Site visit(s) as described in D5.6.11(k).

D5.7 Contract Administration - Non-Resident Engineering Services

D5.7.1 City Supplied Templates

- (a) Upon Project award, the City will supply the Consultant with City templates to be used during the provision of Contract Administration Services. The City will provide templates for:
- (i) pre-construction meeting agenda and meeting minutes,
 - (ii) proposed change notice,
 - (iii) proposed change notice log,
 - (iv) request for information,
 - (v) request for information log,
 - (vi) field instruction,
 - (vii) field instruction log,
 - (viii) change control log,
 - (ix) change in scope of service,
 - (x) change work order,
 - (xi) decision log,
 - (xii) daily construction report,
 - (xiii) inspection report,
 - (xiv) meeting minutes,
 - (xv) site meeting minutes,
 - (xvi) project status report,
 - (xvii) Certificate of Substantial Performance,
 - (xviii) Certificate of Total Performance, and
 - (xix) Certificate of Acceptance.

D5.7.2 Project Schedule and Budget Management

- (a) Monitor and report on the progress of construction activities in relation to established schedule and budget.
- (b) Provide to the City a complete current report on the Project status (as outlined in D5.5.4(e)) on a monthly basis or more frequently if found necessary.
- (i) Monthly report to include a current update of expenditures and revised contract-end cost estimate with explanation and justification of any significant variation from the preceding contract-end cost estimate.

D5.7.3 Quality Management and Change Control

- (a) Administer the construction contract.
- (b) Review the contractor's submittals and ensure conformity with the Project requirements and budget and administer contract changes.
- (c) Prior to construction, prepare and submit a written and photographic record of the physical condition of the work area, existing facilities, and structures sufficient to equip the City to provide valid evidence and relevant testimony in settlement of any claim involving the City by any court of law, or by any other party for damages thereto arising from the Project.
- (d) Review and provide recommendations for requests for alternate materials and methods. No alternates shall be approved without written authorization from the City.
- (e) Identify to the City the impact of proposed changes (on time, quality, cost, scope, risk and human resources), so that the City may make well-informed decisions whether or not to proceed with the proposed changes.

- (f) Arrange for, review and report to the City regarding laboratory, shop and other tests conducted on materials and/or equipment placed or installed by the contractor to ensure conformance with the approved Project design, drawings and specifications.
- (g) Provide technical assistance in development of tie-in protocols, phasing and inspections.

D5.7.4 Shut-Down Protocols

- (a) Prepare shutdown protocols for any activities requiring an operational shutdown of the McPhillips Regional Pumping Station or Tache Booster Pumping Station.
 - (i) Operational shutdowns at the McPhillips Regional Pumping Station shall occur during off peak hours (after 12:00 AM and before 5:00 AM).
- (b) Shutdown protocols shall be submitted for City review a minimum of two (2) weeks in advance of any proposed operational shutdown.
- (c) Shutdown protocols shall include:
 - (i) Start time and estimated completion time;
 - (ii) City of Winnipeg resource requirements;
 - (iii) A pre-shutdown checklist;
 - (iv) Activities necessary to remove from service any station components required to be de-energized in order to safely complete the work;
 - (v) Activities to be undertaken by the Consultant and/or contractor during the shutdown;
 - (vi) Identification of known risks to completing the work within the scheduled shutdown period and contingency plans to mitigate those risks;
 - (vii) Activities required to restore the station to service; and
 - (viii) Emergency contact information for key personnel involved in the shutdown.
- (d) An example shutdown protocol is included in **Appendix C – Example Shutdown Protocol**.

D5.7.5 Submittals

- (a) Coordinate, review and accept submittals supplied by the contractor to ensure that the submittals are in conformance with the approved Project design and the construction contract. Submittals shall include, but are not necessarily limited to:
 - (i) Schedule;
 - (ii) Shop drawings (including any expedited shop drawings);
 - ◆ Shop drawings are to be reviewed by the Consultant and accepted prior to the installation of the equipment.
 - ◆ Submit one (1) hardcopy and one (1) electronic PDF copy of all final shop drawings.
 - (iii) Inspection and test plans;
 - (iv) Commissioning plan;
 - (v) Implementation/changeover plan;
 - (vi) Operation and Maintenance manuals;
 - (vii) Training materials;
 - (viii) Spare parts list.
- (b) Coordinate, consolidate and remove duplication on City and Consultant's comments for the contractor's submittals.

D5.7.6 Communication and Meetings

- (a) Coordinate, chair and provide meeting minutes for pre-construction meeting with the City, Consultant and contractor.
- (b) Consult with and advise the City during the course of construction.

- (c) Provide interpretation of technical aspects of the construction contract.
- (d) Coordinate with responsible parties in resolution of issues.
- (e) Provide adequate and timely direction to Consultant field personnel.
- (f) Review and respond to contractor requests for information.
- (g) Prepare as required field instructions, clarifications and directives.
- (h) Coordinate all work by third parties including but not limited to traffic signal installations, hydro, telephone and gas utility work, railway work, and City personnel. Prepare and submit applications, reports, drawings, and other information as required in support of work by third parties.
- (i) Coordinate and chair regular construction review meetings and provide minutes. The meetings shall include representatives of the City and the contractor. The meetings shall be used to update the City on the status of construction, and to discuss any other construction related issues.
- (j) Coordinate and manage training sessions for City personnel for the operation and maintenance of new facilities and equipment. This includes but is not limited to planning and scheduling of training sessions, review of training procedures and training documents prepared by the contractor.
- (k) Furnish the City with a copy of all correspondence relating directly or indirectly to the Project, originating from or distributed to, parties external to the Consultant, immediately following receipt or dispatch of same by the Consultant.

D5.7.7 Health, Safety and Security

- (a) Review, in conjunction with the City the contractor's safe work plans.
- (b) Monitor compliance with National Building Code of Canada, National Fire Code of Canada, Canadian Electrical Code, Manitoba Building Code, Winnipeg Electrical By-Law, the contractor's safe work plans and other regulations.

D5.7.8 All Deliverables associated with Contract Administration: Non-Resident Engineering Services shall be provided in Native Format and PDF; and in six (6) hardcopies, unless otherwise specified.

D5.8 Contract Administration - Resident Engineering Services

D5.8.1 Inspection, Testing and Acceptance

- (a) Keep a continuous record of Project activities including but not limited to weekly reports, photographic record of construction work and equipment, working days, teleconferences, emails, inspections and observations sufficient to equip the City to provide valid evidence and relevant testimony in settlement of any claim involving the City by any court of law, or by any other party for damages thereto arising from the Project.
- (b) Provide full-time Site inspection Services when the contractor is on-Site to ensure that installation and tie-ins to the existing system are carried out in conformance with the design, drawings and specifications.
- (c) Provide Site inspections by lead designers at appropriate points of construction.
- (d) Visit and inspect work at fabrication shops, staging areas, manufacturing facilities as necessary.
- (e) Inspect the completed installation to ensure conformance with the design drawings, including labeling and identification. All labels visible without opening covers must be inspected, and representative inspections of wire labels must be performed to ensure conformance with the requirements.
- (f) Ensure that the contractor completes the specified acceptance test of the equipment.
- (g) Witness a representative sample of acceptance tests (~20%) to ensure that the contractor is completing the acceptance tests appropriately.

- (h) Review the completed acceptance test forms and ensure that the results are consistent with a good installation. Where data is incorrect or missing, coordinate with the contractor to correct the errors.
- (i) Where acceptance test results indicate an issue, coordinate with the contractor to resolve the issue.
- (j) Coordinate and manage start-up and commissioning of new equipment and facilities. This includes but is not limited to modifying the commissioning plan as required, planning and scheduling of commissioning work, co-ordination of City personnel, full time Site inspection during commissioning work, review of contractor submissions and record keeping.
- (k) Perform a detailed inspection of the Project with the contractor and the City prior to commencement of substantial performance and prior to total performance. Provide written itemized deficiency list or appropriate recommendation of acceptance of the constructed or partially constructed Project.
- (l) Inspect the completed installation to ensure conformance with the design drawings, including labeling and identification.
- (m) Prepare and submit Certificates of Substantial Performance and Total Performance.

D5.8.2 Communication and Meetings

- (a) Promptly report to the City upon any significant and unusual circumstances.

D5.8.3 Measurement and Payment

- (a) Prepare, certify and submit progress estimates to the City for payment to the contractor for construction performed in accordance with the drawings and specifications.
- (b) Act as Payment Certifier and administer all contracts as required under the Builder's Liens Act of Manitoba.

D5.8.4 All Deliverables associated with Contract Administration: Resident Engineering Services shall be provided in Native Format and PDF; and in six (6) hardcopies, unless otherwise specified.

D5.9 As-Built Drawings

D5.9.1 Prepare and submit as-built drawings within one (1) month of total performance.

- (a) Submit one (1) electronic copy of the draft as-built drawings in PDF format for City review;
- (b) Allow a minimum of three (3) weeks for the City to review the draft as-built drawings.

D5.9.2 Upon receipt of City review comments submit one (1) set of size A1 Mylar, and one (1) electronic copy of PDF and AutoCAD files of the final as-built drawings.

D5.9.3 Further to D5.9.1, authenticated as-built drawings shall be prepared as defined in Section 1.2.3 of the APEGM document "Authentication of Hardcopy and Electronic Professional Documents".

D5.10 Post Construction Services

D5.10.1 The Post Construction Services shall consist of one (1)-year warranty Services tied to the date of substantial performance.

D5.10.2 The warranty Services shall include but are not limited to the following:

- (a) Confirm and ensure complete turnover of Project documents (shop drawings, as-built drawings, design notes and calculations etc.) to the City by the contractor and that documents are in conformance with the construction contract.
- (b) Provide inspection Services, at the request of the City, during the warranty period of the construction contract and to advise the City in writing of any deficiencies and the

proposed resolution of the deficiencies. Upon approval of the City, provide the contractor appropriate notice to correct the deficiencies.

- (c) Determine if corrective work is part of contractor's warranty;
- (d) Liaise and coordinate with the contractor to repair defective work.
- (e) Conduct inspection and approval of warranty work;
- (f) Issue instructions for correction of deficiencies;
- (g) Review updates to Operation and Maintenance manuals and resolve deficiencies;
- (h) Respond to requests of the City related to the Project;
- (i) Provide a detailed inspection of the Project with the contractor and the City prior to the end of the warranty period and provide to the City in written form associated itemized deficiency list or appropriate recommendation of acceptance of the construction contract work.
- (j) Prepare and submit Certificate of Acceptance.

SUBMISSIONS

D6. AUTHORITY TO CARRY ON BUSINESS

- D6.1 The Consultant shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Consultant does not carry on business in Manitoba, in the jurisdiction where the Consultant does carry on business, throughout the term of the Contract, and shall provide the Project Manager with evidence thereof upon request.

D7. INSURANCE

- D7.1 The Consultant shall procure and maintain, at its own expense and cost, insurance policies with limits no less than those shown below.
- D7.2 As a minimum, the Consultant shall, without limiting its obligations or liabilities under any other contract with the City, procure and maintain, at its own expense and cost, the following insurance policies:
- (a) Comprehensive or Commercial General Liability Insurance including:
 - (i) an inclusive limit of not less than \$2,000,000 for each occurrence or accident with a minimum \$2,000,000 Products and Completed Operations aggregate and \$5,000,000 general aggregate;
 - (ii) all sums which the Consultant shall become legally obligated to pay for damages because of bodily injury (including death at any time resulting therefrom) sustained by any person or persons or because of damage to or destruction of property caused by an occurrence or accident arising out of or related to the Services or any operations carried on in connection with this Contract;
 - (iii) coverage for Products/Completed Operations, Blanket Contractual, Consultant's Protective, Personal Injury, Contingent Employer's Liability, Broad Form Property Damage, Employees as Additional Insureds, and Non-Owned Automobile Liability;
 - (iv) a Cross Liability clause and/or Severability of Interest clause providing that the inclusion of more than one Insured shall not in any way affect the rights of any other Insured hereunder in respect to any claim, demand, suit or judgment made against any other Insured;
 - (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Consultant directly or indirectly in the performance of the Service. The limit of liability shall not be less than \$2,000,000 inclusive for loss or

damage including personal injuries and death resulting from any one accident or occurrence.

- (c) Professional Errors and Omissions Liability Insurance including:
 - (i) an amount not less than \$5,000,000 per claim and \$5,000,000 in the aggregate.

- D7.2.1 The Consultant's Professional Errors and Omissions Liability Insurance shall remain in force for the duration of the Project and for twelve (12) months after total performance.
- D7.3 The policies required in D7.2(a) shall provide that the City is named as an Additional Insured thereunder and that said policies are primary without any right of contribution from any insurance otherwise maintained by the City.
- D7.4 The Consultant shall require each of its Subconsultants to provide comparable insurance to that set forth under D7.2(a) and D7.2(c).
- D7.5 The Consultant shall provide the Project Manager with a certificate(s) of insurance for itself and for all of its Subconsultants, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Services, but in no event later than the date specified in C4.1 for the return of the executed Contract. Such certificates shall state the exact description of the Services and provide for written notice in accordance with D7.8.
- D7.6 The Consultant may take out such additional insurance as it may consider necessary and desirable. All such additional insurance shall be at no expense to the City.
- D7.7 All insurance, which the Consultant is required to obtain with respect to this Contract, shall be with insurance companies registered in and licensed to underwrite such insurance in the Province of Manitoba.
- D7.8 The Consultant shall not cancel, materially alter, or cause any policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the City.

SCHEDULE OF SERVICES

D8. COMMENCEMENT

- D8.1 The Consultant shall not commence any Services until it is in receipt of a notice of award from the City authorizing the commencement of the Services.
- D8.2 The Consultant shall not commence any Services until:
 - (a) the Project Manager has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D6;
 - (ii) evidence of the insurance specified in D7;
 - (iii) security clearances specified in PART E - Security Clearance.
 - (b) the Consultant has attended a meeting with the Project Manager, or the Project Manager has waived the requirement for a meeting.
- D8.3 The City intends to award this Contract by December 15, 2018.

D9. CRITICAL STAGES

- D9.1 The Consultant shall achieve critical stages of the Services for this Contract in accordance with the following requirements:
 - (a) Completion of Detailed Design: September 13, 2019.
 - (b) Substantial Performance: February 2021;
 - (c) End of Warranty Period: February 2022.

PART E - SECURITY CLEARANCE

E1. SECURITY CLEARANCE

- E1.1 Each individual proposed to perform Work under the Contract within the City facilities shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his place of residence and Public Safety Verification Checks.
- (a) Any cost or expense incurred by the Proponent that is associated with obtaining the required security clearances shall be borne solely by the Proponent.
- E1.2 A Criminal Record Search Certificate can be obtained from one of the following;
- (a) a police service having jurisdiction at his/her place of residence.
- (i) the original Criminal Record Search Certificate (Form P-253) will be provided by the Winnipeg Police Service to the individual applicant. The original has a validation sticker from the Winnipeg Police Service in the top right hand corner.
- (ii) The applicant shall provide the original Criminal Record Search Certificate (Form P-253) to the Project Manager, or
- (b) using Sterling Talent Solutions, Proponents will need to setup a Sterling Talent Solutions account prior to requesting individual background checks. This process should be done 72 hours prior to requesting the first check. The account can be setup using the following link.
<https://forms.sterlingbackcheck.com/partners/platform2-en.php?&partner=winnipegcity>
- The Criminal Record Search Certificate must be received by the City directly through Sterling Talent Solutions;
- (i) Proponents must set up an account with Sterling Talent Solutions under their company name and grant Sterling Talent Solutions permission to share the Criminal Record Search Certificate with the City of Winnipeg;
- (ii) Proponents will then be contacted by Sterling Talent Solutions with instructions on how to complete the Criminal Record Search Certificate; and
- (iii) if additional assistance is required to obtain the Criminal Record Search Certificate, the Proponents may contact the following Sterling Talent Solutions representative:
Linda Ferens;
email: linda.ferens@sterlingts.com
phone: (204) 999-0912; or
- (c) filling out the Core of Commissionaires (Manitoba Division) form which can be obtained by visiting: <https://www.commissionaires.ca/en/manitoba/home> .
- E1.3 Public Safety Verification Checks may be obtained from Sterling Talent Solutions as follows:
- (a) the Public Safety Verification Checks can be obtained from Sterling Talent Solutions, Proponents will need to setup a Sterling Talent Solutions account prior to requesting individual background checks. This process should be done 72hrs prior to requesting the first check. The account can be setup using the following link.
<https://forms.sterlingbackcheck.com/partners/platform2-en.php?&partner=winnipegcity> .
The results of the Public Safety Verification Check must be received by the City directly through Sterling Talent Solutions.
- (i) Proponents must set up an account with Sterling Talent Solutions under their company name and grant Sterling Talent Solutions permission to share the Criminal Record Search Certificate with the City of Winnipeg;
- (ii) Proponents will then be contacted by Sterling Talent Solutions with instructions on how to complete the Public Safety Verification Check; and
- (iii) if additional assistance is required to obtain the Public Safety Verification Check, the Proponents may contact the following Sterling Talent Solutions representative:
Linda Ferens;
email: linda.ferens@sterlingts.com

phone: (204) 999-0912

- E1.4 Prior to the award of Contract, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Proponent shall supply the Project Manager with a Criminal Record Search Certificate and a Public Safety Verification Check obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform the Work.
- E1.5 Any individual for whom a Criminal Record Search Certificate is not provided, or for whom a Criminal Record Search Certificate or a Public Safety Verification Check indicates any convictions or pending charges related to property offences or crimes against another Person will not be permitted to perform any Work.
- E1.6 Any Criminal Record Search Certificate and Public Safety Verification Check obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- E1.7 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated Criminal Records Search Certificate or Public Safety Verification Check. Any individual who fails to provide a satisfactory Criminal Record Search Certificate or Public Safety Verification Check as a result of a repeated criminal records search will not be permitted to continue to perform any Work.

APPENDIX A – DEFINITION OF PROFESSIONAL CONSULTANT SERVICES

1 INTRODUCTION

- 1.1 It is the intent of the City of Winnipeg, in defining Professional Consultant Services (Consulting Engineering Services), to clarify the role required of consulting Engineers; to more fully identify the services to be rendered by consulting Engineers to the City and to other parties on behalf of the City; and to provide a more clearly determined basis of obligation in respect thereof by consulting Engineers to the City and to third parties in the provision of such services
- 1.2 The services shall be performed in the City of Winnipeg, unless otherwise authorized by the City, under direct supervision of a professional Engineer. All drawings, reports, recommendations and other documents, originating therefrom involving the practice of professional engineering, shall bear the stamp or seal and signature of a qualified Engineer as required by the Engineering and Geoscientific Professions Act of the Province of Manitoba and By-laws of the Association of Professional Engineers and Geoscientists of the Province of Manitoba. Other reports and documents not involving the "practice of professional engineering", such as letters of information, minutes of meetings, construction progress reports, may be originated and signed by other responsible personnel engaged by the consulting Engineer and accepted by the City. Progress estimates, completion certificates and other reports related to the technical aspects of a project, must be endorsed by the Engineer in a manner acceptable to the City.

2 ADVISORY SERVICES

- 2.1 Advisory services are normally not associated with or followed by preliminary design and/or design services, and include, but are not limited to:
- (a) Expert Testimony;
 - (b) Appraisals;
 - (c) Valuations;
 - (d) Rate structure and tariff studies;
 - (e) Management services other than construction management;
 - (f) Feasibility studies;
 - (g) Planning studies;
 - (h) Surveying and mapping;
 - (i) Soil mechanics and foundation engineering;
 - (j) Inspection, testing, research, studies, or reports concerning the collection, analysis, evaluation; and
 - (k) Interpretation of data and information leading to conclusions and recommendations based upon specialized engineering experience and knowledge.

3 PRELIMINARY DESIGN

- 3.1 Preliminary design services are normally a prelude to the detailed design of a project and include, but are not limited to:
- (a) Preliminary engineering studies;
 - (b) Engineering investigation;
 - (c) Surface and subsurface site explorations, measurements, investigations, and surveys;
 - (d) Operations studies including drainage studies, traffic studies, etc.;
 - (e) Functional planning;
 - (f) Physical, economical (capital and operating) and environmental studies including evaluation, comparison, and recommendation regarding alternative preliminary designs;
 - (g) Preparation and submission of a report and appropriate drawings to the City, fully documenting data gathered, explaining adequately the assessment made, stating with clarity the resulting conclusions, and containing all recommendations which are relevant to this stage of project implementation;

- (h) Special applications to public agencies for necessary authorizations, preparation and submission of reports and drawings thereto and appearance before same in support of the application.

4 DETAILED DESIGN

4.1 Detailed design services normally involve preparation of detailed designs, tender specifications and drawings, and analysis of bids and recommendations for contract award, and include, but are not limited to:

- (a) Addressing alternative methods of accommodating; relocating; avoiding, and/or avoiding injury to Utilities and railways; proposing alternative methods of solution, reviewing same with the appropriate Regulatory approval agencies and stakeholders;
- (b) Application to public agencies for necessary authorizations, preparation and submission of reports and drawings thereto, and appearance before same in support of the application;
- (c) Preparation and submission of detailed engineering calculations, drawings, and criteria employed in the design(s), securing review of and an acceptance by the City;
- (d) Preparation of detailed engineering drawings, specifications and tender documents consistent with the standards and guidelines of the City, securing review of acceptance by the City;
- (e) Preparation and provision to the City in written form, a fully detailed formal construction contract estimate;
- (f) Provision of appropriate response to bidders and advice to the City during the bid period and, subject to acceptance by the City, issuing addenda to the tender documents;
- (g) Submission of a review, analysis, comparison, tabulation, calculation, and evaluation of the bids received, to the City;
- (h) Preparation of a report including revised contract estimate, identifying and explaining variations from the earlier formal estimate, and containing recommendation regarding contract award identifying the reasons therefore.

5 CONTRACT ADMINISTRATION SERVICES

5.1 Contract administration services are associated with the construction of a project and include the office and field services required to ensure the conduct of the project in accordance with the intent of the City and in conformance with the particulars of the drawings and specifications; and include but are not limited to:

NON-RESIDENT SERVICES

- (a) Consultation with and advice to the City during the course of construction;
- (b) Review and acceptance of shop drawings supplied by the contractor or supplier to ensure that the drawings are in conformance with the drawings and specifications, without relieving the contractor of his contractual and other legal obligations in respect thereof;
- (c) Review and report to the City upon laboratory, shop and other tests conducted upon materials and/or equipment placed or installed by the contractor to ensure to the City conformance with the drawings and specifications, without relieving the contractor of his contractual and other legal obligations in respect thereof;
- (d) Acceptance of alternate materials and methods, subject to prior acceptance by the City, without relieving the contractor of his contractual and other legal obligations in respect thereof;
- (e) Provision to the City of a complete current report on the project status on a monthly basis;
- (f) Provision to the City a current update of revised contract-end cost estimate on a monthly basis, or more frequently if found necessary, with explanation and justification of any significant variation from the preceding contract-end cost estimate;
- (g) Definition and justification of and estimate of cost for additions to or deletions from the contract for authorization by the City;
- (h) Furnishing the City with a copy of all significant correspondence relating directly or indirectly to the project, originating from or distributed to, parties external to the consulting Engineer, immediately following receipt or dispatch of same by the consulting Engineer;

- (i) Provision of adequate and timely direction of field personnel by senior officers of the Consultant;
- (j) Establishment prior to construction and submission to the City of written and photographic records of, and assessment of the physical condition of adjacent buildings, facilities, and structures sufficient to equip the consulting Engineer to provide valid evidence and relevant testimony in settlement of any claim involving the City by any court of law, or by any other party for damages thereto arising from the project;
- (k) Arranging and attending pre-construction meetings and on-site or off-site review meetings, which meetings shall include representatives of the contractor and the City;
- (l) The preparation and submission of:
 - i. a detailed design notes package including items such as structural geotechnical, hydraulic and heating, air-conditioning and ventilation design calculations; mechanical and electrical design calculations related to process equipment and building services; process design calculations; and instrumentation and process control design calculations;
 - ii. approved related shop drawings and equipment process manuals all within one (1) month of completion of each separate installation contract required to complete the Works.

RESIDENT SERVICES

- (a) Provision of qualified resident personnel acceptable to the City present at the project site to carry out the services as specified immediately below, without relieving the contractor of his contractual and other legal obligations in respect thereof:
 - i. inspection of all pipe prior to installation;
 - ii. inspection and acceptance of excavation for, and full time inspection at the time of bedding placement, pipe laying and backfilling in respect of installation of watermains, land drainage sewers, and wastewater sewers;
 - iii. inspection of installation of all connections to watermains, sewers, manholes, valves, hydrants or house services, and excavation and/or exposing of all underground services, structures, or facilities;
 - iv. "full time inspection" and/or testing of watermains and sewers;
 - v. inspection of all excavations to determine soil adequacy prior to installation of base and subbase courses for sidewalks, public back lanes, and street pavements. It is to be understood that "full time inspection" will require assignment of a qualified person to each specific location when the referenced work is being undertaken by the contractor.
- (b) Without relieving the contractor of his contractual and other legal obligations in respect thereof, conduct detailed inspection of construction sufficient to ensure that the construction carried out by the contractor is in conformance with the drawings and specifications;
- (c) Co-ordination and staging of all other works on the project site including traffic signal installations, hydro, telephone, and gas utility work, railway work forces and City or developer work;
- (d) In conjunction with the City, provision of notice to adjacent residents and businesses of those stages of construction of the project that will interrupt public services or access thereto, sufficiently in advance of same to permit preparation therefore;
- (e) Enforcement of contractor conformance with the City of Winnipeg Manual of Temporary Traffic Control in Work Areas on City Streets and with reasonable standards of safety for motorists and pedestrians, without relieving the contractor of his contractual and other legal obligations in respect thereof;
- (f) Provision of reference line and elevation to the contractor and checking upon the contractor's adherence thereto, without relieving the contractor of his contractual and other legal obligations in respect thereof;
- (g) Responsible, sensitive, and prompt reaction to the reasonable requests and complaints of citizens regarding the conduct of the project, acting in the interest of the City;

- (h) Arranging for and carrying out of testing of materials utilized by the contractor to ensure conformance with the drawings and specifications, without relieving the contractor of his contractual and other legal obligations in respect thereof;
- (i) Preparation, certification, and prompt submission of progress estimates to the City for payment to the contractor for construction performed in accordance with the drawings and specifications;
- (j) Arrange, attend and prepare and distribute records of and minutes for, regularly held on-site or offsite project review meetings including representatives of the contractor and the City;
- (k) Promptly reporting to the City upon any significant and unusual circumstances;
- (l) Promptly arranging for and taking part in a detailed final inspection of the project with the contractor and the City prior to commencement of the period of contractor maintenance guarantee specified in the contract for the project and providing to the City in written form an appropriate recommendation of acceptance of the constructed or partially constructed project;
- (m) Act as Payment Certifier and administer all contracts as required under the Builder's Liens Act of Manitoba;
- (n) Prepare a Certificate of Substantial Performance;
- (o) Preparation and submission to the City of "as-constructed" drawings for the project within 1 month of project completion;
- (p) Prepare a Certificate of Total Performance;
- (q) Provision of inspection services during the maintenance guarantee period of the contract;
- (r) Undertake a detailed inspection of the project with the contractor and the City prior to the end of the period of contractor maintenance guarantee specified in the contract for the project;
- (s) Keep a continuous record of working days and days lost due to inclement weather during the course of contract works;
- (t) Prepare a Certificate of Acceptance.

6 ADDITIONAL SERVICES

6.1 Additional services are in addition to those specified in other Types of Services and may or may not be associated with a construction project, but are not in place of or in substitution for those services elsewhere specified in the Definition of Standard Consulting Engineering Services in respect of other Types or Categories of Services.

- (a) Revision of completed, or substantially completed, drawings and/or specifications that were in conformance with the original intent of the City or had been accepted by the City;
- (b) Preparation of operating manuals and/or training of operating personnel;
- (c) Startup and/or operation of operating plants;
- (d) Procurement of materials and equipment for the City;
- (e) Preparation for and appearance in litigation on behalf of the City;
- (f) Preparation of environmental studies and reports and presentation thereof in public hearings.

APPENDIX B – RELEVANT DOCUMENTS

The following documents are available electronically by request to the Project Manager after completion of a Non-Disclosure Agreement:

1	Water Pumping Stations Power Reliability Study	
	Author: SNC-Lavalin Inc. Published: 2008	Identification and assessment of risks associated with power interruptions at water pumping stations, and recommendations to mitigate risks and improve station reliability.
2	Asbestos Building Materials Survey of City of Winnipeg, Water and Waste Department, Tache Booster Pumping Station	
	Author: Pinchin Environmental Ltd. Published: 2007	Results of an asbestos-containing building material survey of the Tache Booster Pumping Station
3	Asbestos Building Materials survey of City of Winnipeg, Water and Waste Department, McPhillips Street Pumping Station and Reservoir	
	Author: Pinchin Environmental Ltd. Published: 2007	Results of an asbestos-containing building material survey of the McPhillips Regional Pumping Station and Reservoir.
4	McPhillips Pumping Station Arc Flash Study	
	Author: SNC-Lavalin Inc. Published: 2011	Assessment of potential arc flash hazards at McPhillips Pumping Station and recommendations to mitigate those hazards.
5	Tache Pumping Station Arc Flash Study	
	Author: SNC-Lavalin Inc. Published: 2011	Assessment of potential arc flash hazards at Tache Booster Pumping Station and recommendations to mitigate those hazards.
6	McPhillips Control Centre Arc Flash Study	
	Author: SNC-Lavalin Inc. Published: 2013	Assessment of potential arc flash hazards at McPhillips Control Centre and recommendations to mitigate those hazards.
7	McPhillips Pumping Station MCC Replacement Preliminary Design	
	Author: SNC-Lavalin Inc. Published: 2013	Preliminary Design Report for the Replacement of the McPhillips Pumping Station Motor Control Centres.
9	Preliminary Design for the Tache Booster Pumping Station and Surge Tower Upgrades	
	Author: AECOM Canada Ltd. Published: 2017	Preliminary design for mechanical, electrical and structural components that have reached the end of their service life at the Tache Booster Pumping Station and Surge Tower.
12	Final Asbestos Reassessment: Tache Booster Pumping Station	
	Author: Pinchin Environmental Ltd. Published: 2017	Report updating the original 2007 survey report.
10	Final Asbestos Reassessment: McPhillips Street pumping station	
	Author: Pinchin Environmental Ltd. Published: 2017	Report updating the original 2007 survey report
11	The City of Winnipeg Water & Waste Department Electrical Design Guide	
12	The City of Winnipeg Water & Waste Department Identification Standard	
13	The City of Winnipeg Water & Waste Department Water and Wastewater Treatment Process – Drawing Standard.	

The following reference drawings are available electronically by request to the Project Manager.

Drawing Number	Drawing Name/Title
A-604	GWWD Single Line Diagram of Electrical Equipment Required for Booster Pumping Station
A-605	GWWD Panel Arrangement for Switchgear
D-1908	Tache Booster Pumping Station Instrumentation Location Layout and Electrical Power Layout
D-5410	McPhillips Pumping Station Upgrading - Installation – Process and Instrumentation Diagram Standby Generator & Electrical Distribution
D-5411	McPhillips Pumping Station Upgrading - Installation -- Instrumentation Location Layout and Electrical Power Layout
D-11934	Branch I Aqueduct Valve Chamber at McPhillips Street Pumping Station - Electrical - Lower & Upper Level Floor Plan
D-11935	Branch I Aqueduct Valve Chamber at McPhillips Street Pumping Station - Electrical - Single Line Diagram and Panel Schedules
D-11937	Branch I Aqueduct Valve Chamber at McPhillips Street Pumping Station - Electrical - Control Schematics & Loop Diagram
L-MCP-4	McPhillips Pumping Station Electrical Sump Pump Control
L-MCP-5	McPhillips St Pumping Station Contract F Chlorine Building – Electrical - Single Line and Wiring Diagrams
MCP-259	Regional Water Supply System - Instrumentation, Control and Data Acquisition - Contract No. 6 - New McPhillips Control Centre Building - Electrical Site Plan and Details
MCP-264	Regional Water Supply System - Instrumentation, Control and Data Acquisition - Contract No. 6 - New McPhillips Control Centre Building - Details and Electrical Schedules
Q-MCP-184	McPhillips Pumping Station - Pump House - Mezz. Level - Lighting, Power, HVAC, & Cable Tray
Q-MCP-185	McPhillips Pumping Station - Pump House - Main Level Lighting, Power, HVAC, & Cable Tray
Q-MCP-186	McPhillips Pumping Station - CL2 BLDG. and Tunnels - Lighting, Power, HVAC, & Cable Tray
Q-MCP-187	McPhillips Pumping Station - Garage BLDG. - Genset RM. - Lighting, Power, HVAC, & Cable Tray
Q-MCP-188	McPhillips Pumping Station – Garage BLDG. – 2nd Floor - Light, Power, HVAC, & Cable Tray
Q-MCP-192	McPhillips Pumping Station - 600/240/208/120 Volt - Panel Schedules & SLD
Q-MCP-197	McPhillips Pumping Station - Record Drawings - HVAC Control Panel # 1 Wiring Diagram
Q-MCP-198	McPhillips Pumping Station - Record Drawings - HVAC Control Diagrams
1-0640B-E0001-001	McPhillips Pumping Station - Electrical Single Line – Collections Building (REV 2 is ISSUED FOR CONSTRUCTION)
1-0640B-E0002-001	McPhillips Pumping Station - Plan Layout and Equipment Elevation – Collections Building - Electrical Room - Demolition (REV 00 is FOR CONSTRUCTION ONLY)
1-0640B-E0003-001	McPhillips Pumping Station - Plan Layout and Equipment Elevation – Collections Building - Electrical Room -New Work (REV 00 is FOR CONSTRUCTION)
1-0640B-E0004-001	McPhillips Pumping Station Panel Schedule and Layout Collections Building DP-B701
1-0640B-E0005-001	McPhillips Pumping Station Plan and Sections DP-B701 Housekeeping Pad
1-0640C-E0001-001	McPhillips Pumping Station – Electrical Single Line Diagram - Chlorine Building
1-0640M-A0018-001	McPhillips Water Pumping Station - Process & Instrumentation Diagrams - Electrical Supply

1-0640M-E0001-001	McPhillips Water Pumping Station - Electrical Single Line Diagram - Legend & Details
1-0640M-E0002-001	McPhillips Water Pumping Station - Electrical Single Line Diagram - 4160V Distribution
1-0640M-E0003-001	McPhillips Water Pumping Station - Electrical Single Line Diagram - 600V Generators and Switchgear
1-0640M-E0004-001	McPhillips Water Pumping Station - Electrical Single Line Diagram - 600V Distribution (REV 04 is FOR CONSTRUCTION ONLY)
1-0640M-E0010-001	McPhillips Water Pumping Station - Control Schematic - 600V Main Breaker Control
1-0640M-E0010-002	McPhillips Water Pumping Station - Control Schematic - 600V Main Breaker Control
1-0640M-E0013-001	McPhillips Pumping Station - Electrical Equipment Plan, Electrical & Control Rooms
1-0640M-E0014-001	McPhillips Pumping Station - Electrical Equipment Plan, Generator Room
1-0640M-E0015-001	McPhillips Pumping Station - Electrical Equipment Elevation, 4160V Switchgear & 600V Switchgear/MCC
1-0640M-E0016-001	McPhillips Pumping Station - Schematic, 4160V Main Breaker
1-0640M-E0017-001	McPhillips Pumping Station - Three Line Diagram, 4160V Main Breaker
1-0640M-E0018-001	McPhillips Pumping Station - Control Modification Details - 600V Main Breaker Control
1-0640M-E0020-001	McPhillips Pumping Station - Electrical Single Line Diagram - Miscellaneous Distribution
1-0640M-E0021-001	McPhillips Water Pumping Station - Demolition Details, 600V Switchgear Buswork
1-0640M-E0022-001	McPhillips Water Pumping Station – Installation Details, 600V Switchgear Buswork
1-0640M-E0023-001	McPhillips Water Pumping Station - Cable Tray Layout, Lower Pump Room
1-0640M-E0024-001	McPhillips Water Pumping Station - Cable Tray Section & Details, Lower Pump Room
1-0640M-E0025-001	McPhillips Water Pumping Station – Connection Diagram and Details, ATS-M2E, Transfer Switch
1-0660M-E0005-001	Tache Booster Pumping Station Arc Flash Study Single Line Diagram

APPENDIX C – EXAMPLE SHUTDOWN PROTOCOL

September 16, 2011 – MacLean Pumping Station Example Shutdown Protocol MacLean 600V Switchgear Upgrade				
Resources:	<ul style="list-style-type: none"> • City of Winnipeg (CoW) – Operations, Electrical, Instrumentation personnel. • AAA Contracting Ltd. – Electrical personnel. • BBB Consulting - 			
Item #	Time	Description	Responsibility	Facility Operation
1	10:00 pm	<ul style="list-style-type: none"> • Set up battery or generator based temporary lighting in electrical room in front of 600V switchgear. 	CoW Electrician	Normal
2	10:45 pm	<ul style="list-style-type: none"> • Pre-shutdown meeting in MacLean Pumping Station Electrical Room 	All	Normal
3	11:00 pm	<ul style="list-style-type: none"> • Run pumps at Tache as required to eliminate pumping at MacLean station. • Shutdown MacLean pumps. 	CoW Operations	Shutdown
Part A		Powering down of station		
A-1 •	11:15 pm	<ul style="list-style-type: none"> • Shut down SCADA station 	CoW Instrumentation	Shutdown
A-2	11:20 pm	<ul style="list-style-type: none"> • Verify the pumps are shut down. 	CoW Electrician	Shutdown
A-3	11:30 pm to 12:00 am	<ul style="list-style-type: none"> • Switch off and lock-out the generators. • Turn off Reservoir Valve House MCC loads. • Turn off non-essential MCC and CDP loads. • Turn off essential MCC loads. • Put Man/Auto transfer control switch into Manual position. • Shutdown UPS as per posted instructions. • Open AB2 breaker. • Open B2 load break. • Lock-out B2 load break. • Open AB breaker. • Ensure ABT breaker is open (this breaker is currently out of service). • Open B1 load break. • Lock-out B1 load break. • Verify no presence of voltage on secondary sides of each PT, CT, and CPT. 	CoW Electrician	Shutdown
Part B		Controls Re-wiring		
B-1	12:00 am to 2:00	<ul style="list-style-type: none"> • Re-wire breaker controls as per drawing 1-111-E111. 	CoW Electrician	Shutdown

	am			
B-2	2:00 am to 2:30 am	<ul style="list-style-type: none"> Ensure all wires and components modified are labelled. 	CoW Electrician	Shutdown
Part C		Testing		
C-1	2:30 am to 2:45 am	<ul style="list-style-type: none"> Remove locks from generator breaker. Remove locks from B1 load break. 	CoW Electrician	Shutdown
C-2	2:45 am to 3:30 am	<ul style="list-style-type: none"> Perform test to confirm the power transfer operates appropriately. Perform commissioning checks as per the Commissioning Checklist. 	CoW Electrician	Shutdown
Part D		Station Restoration		
D-1	3:30 am to 4:10 am	<ul style="list-style-type: none"> Ensure essential MCC is powered from utility. Power up UPS as per posted instructions. Turn on essential MCC loads. Remove lock from B2 load break switch. Close B2 load break switch. Close BT2 breaker. Ensure non-essential MCC is powered. Turn on non-essential MCC loads. Turn on the Reservoir Valve House MCC loads. 	CoW Electrician	Shutdown
D-2	4:10 am	<ul style="list-style-type: none"> Reset pump PLC panels 	CoW Operations	Shutdown
D-3	4:20 am	<ul style="list-style-type: none"> Turn on SCADA station 	CoW Instrumentation	Shutdown
D-4	4:30 am	<ul style="list-style-type: none"> Restart Pumping at MacLean Pumping Station 	CoW Operations	Normal

Facility Impact During Work:

- The 600V power to the station will be shutdown between 11:00 pm to 4:30 am including the essential power and emergency generators.
- Essential and non-essential lighting will be off during the work. City of Winnipeg is to provide all temporary power and lighting as required.
- During the hours of 11:00 pm to 4:30 am, the essential MCC and UPS system will be shutdown and the natural gas engine cannot run during this time.

Contingency Plan

Issue #	Description	Action
1	AB2 breaker will not rack in or close.	- Power the essential loads from B2. - CoW Electricians to immediately work to fix the problem and bring in appropriate expertise as required.
2	Improper operation of 600V switchgear	- BBB Consulting will be present to analyze the operation of the system and make recommendations to CoW Electricians to fix the issue.
3	Unforeseen Issue	- A City electrician and Operations will be present to help resolve unforeseen issues.

Emergency Contacts:

City of Winnipeg:			
Name	Role	Phone#	Mobil#
A Smith	Emergency Contact	204-XXX-XXXX	204-XXX-XXXX
B Smith	Operations Engineer	204-XXX-XXXX	204-XXX-XXXX
C Smith	Project Director	204-XXX-XXXX	204-XXX-XXXX

Contractor – AAA Contracting Ltd.:			
Name	Role	Phone#	Mobil#
D Smith	AAA Project Manager	204-XXX-XXXX	204-XXX-XXXX
E Smith	AAA Technician	204-XXX-XXXX	204-XXX-XXXX

Contractor – BBB Consulting Ltd.:			
Name	Role	Phone#	Mobil#
F Smith	BBB Contract Administrator	204-XXX-XXXX	204-XXX-XXXX