



**THE CITY OF WINNIPEG**

# **REQUEST FOR PROPOSAL**

**RFP NO. 947-2024**

**PROFESSIONAL CONSULTING SERVICES FOR TYLEHURST LIFT STATION  
UPGRADES**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

- B1.1 PROFESSIONAL CONSULTING SERVICES FOR TYLEHURST LIFT STATION UPGRADES
- B1.2 TYLEHURST LIFT STATION UPGRADES

### **B2. SUBMISSION DEADLINE**

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, January 24, 2025.
- B2.2 The Consulting Contract Administrator or the Manager of Purchasing 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 Consulting Contract Administrator or an authorized representative will conduct a site investigation tour of the facility located at 499 Tylehurst Street on the following dates:
  - (a) Wednesday December 18, 2024, beginning at 1:00 pm.
  - (b) Thursday January 9, 2025, beginning at 11:00 am.
- B3.2 Proponents are requested to register for the site investigation by contacting the Consulting Contract Administrator identified in D2.
- B3.3 Attendance of at least one (1) Proponent representative at one (1) of the Site Investigations is **mandatory**. Should a Proponent representative not attend at least one (1) site investigation, the Proponents Proposal will be determined to be non-responsive and will not be further evaluated.
- B3.4 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 Consulting Contract Administrator in writing.
- B3.5 The Proponent is responsible for inspecting the Site, the nature of the Work to be done and all conditions that might affect their Proposal or their performance of the Work, and shall assume all risk for conditions existing or arising in the course of the Work which have been or could have been determined through such inspection.
- B3.6 Proponent's will be allowed to take pictures of the site provided there are no City representatives in the pictures.
- B3.7 The Proponent is responsible for inspecting the Site, the nature of the Work to be done and all conditions that might affect their Proposal or their performance of the Work, and shall assume all risk for conditions existing or arising in the course of the Work which have been or could have been determined through such inspection.

### **B4. ENQUIRIES**

- B4.1 All enquiries shall be directed to the Consulting Contract Administrator 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 Consulting Contract Administrator of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.

- B4.3 Responses to enquiries which, in the sole judgment of the Consulting Contract Administrator, require a correction to or a clarification of the Request for Proposal will be provided by the Consulting Contract Administrator to all Proponents by issuing an addendum.
- B4.4 Responses to enquiries which, in the sole judgment of the Consulting Contract Administrator, do not require a correction to or a clarification of the Request for Proposal will be provided by the Consulting Contract Administrator only to the Proponent who made the enquiry.
- B4.5 All correspondence or contact by Proponents with the City in respect of this RFP must be directly and only with the City's Consulting Contract Administrator. Failure to restrict correspondence and contact to the Consulting Contract Administrator may result in the rejection of the Proponents Proposal Submission.
- B4.6 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 Consulting Contract Administrator in writing.
- B4.7 Any enquiries concerning submitting through MERX should be addressed to:  
MERX Customer Support  
Phone: 1-800-964-6379  
Email: merx@merx.com

## **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 Consulting Contract Administrator. 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 Proposals to the media or any member of the public without the prior written authorization of the Consulting Contract Administrator.

## **B6. ADDENDA**

- B6.1 The Consulting Contract Administrator 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 Consulting Contract Administrator 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 MERX website at [www.merx.com](http://www.merx.com).
- B6.4 The Proponent is responsible for ensuring that they have received all addenda and is advised to check the MERX 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 10 of Form A: Bid/Proposal. Failure to acknowledge receipt of an addendum may render a Proposal non-responsive.
- B6.6 Notwithstanding B4, enquiries related to an Addendum may be directed to the Consulting Contract Administrator indicated in D2.

## **B7. PROPOSAL SUBMISSION**

- B7.1 The Proposal shall consist of the following components:
- (a) Form A: Bid/Proposal (Section A) in accordance with B8;
  - (b) Form B: Fees (Section B) in accordance with B9;
  - (c) Form P: Person Hours (Section C) in accordance with B10.
- B7.2 The Proposal should also consist of the following components:
- (a) Experience of Proponent and Subconsultants (Section D) in accordance with B11;
  - (b) Experience of Key Personnel Assigned to the Project (Section E), in accordance with B12;
  - (c) Project Understanding and Methodology (Section F) in accordance with B13;
  - (d) Management Proposal (Section G) in accordance with B14; and
  - (e) Project Schedule (Section H) in accordance with B15.
- 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 Proposal format, including 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 proposed solution.
- B7.6 The Proposal shall be submitted electronically through MERX at [www.merx.com](http://www.merx.com).
- B7.6.1 Proposals will **only** be accepted electronically through MERX.
- B7.7 Proponents are advised that inclusion of terms and conditions inconsistent with the Request for Proposal, will be evaluated in accordance with B24.1(a).
- B7.8 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: Bid/Proposal, making all required entries.
- B8.2 Paragraph 2 of Form A: Bid/Proposal shall be completed in accordance with the following requirements:
- (a) if the Proponent is a sole proprietor carrying on business in their own name, their 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 their 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 or more persons, each and all such persons shall identify themselves in accordance with B8.2

- B8.3 In Paragraph 3 of Form A: Bid/Proposal, the Proponent shall identify a contact person who is authorized to represent the Proponent for purposes of the Proposal.
- B8.4 Paragraph 13 of Form A: Bid/Proposal shall be signed in accordance with the following requirements:
- (a) if the Proponent is a sole proprietor carrying on business in their 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 their duly authorized officer or officers;
  - (d) if the Proponent is carrying on business under a name other than their 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: Bid/Proposal should be entered below such signatures.
- B8.5 If a Proposal is submitted jointly by two 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 Proposal shall include a Fixed Fee for all disciplines and/or phases identified in D4 Scope of Services.
- (a) Preliminary Engineering Design (D7);
  - (b) Detailed Engineering Design (D8);
  - (c) Construction Documents (D9);
  - (d) Procurement Process (D10);
  - (e) PLC & HMI Controller Programming (D11);
  - (f) Contract Administration Services – Non-Resident (D12);
  - (g) Contract Administration Services – Resident (D13);
  - (h) Commissioning (D14); and
  - (i) Record Documents and Project Closeout (D15);
- B9.2 The Proponent shall include an Additional Work Allowance of \$75,000.00 in their Proposal identified in D16, which has been included on Form B: Fees and Form P: Person Hours.
- B9.3 Allowances for Additional Work has been included on Form B as the City's estimate of costs. These costs shall be included in the calculation of Total Fees proposed by the Proponent.
- (a) The Additional Work Allowances shall only be used with written permission of the Consulting Contract Administrator;
- B9.4 Adjustments to Fees will only be considered based on increases to the Scope of Services.
- (a) The City will not consider an adjustment to the Fees based on changes in the Project budget or the Final Total Construction Cost.
  - (b) There will be no fee escalation allowed for yearly adjustments, promotions, etc. The Fee scale shall remain fixed for the duration of the Project based on the rates set in Form P: Person Hours submitted in the proponents Proposal.

- B9.5 Notwithstanding C1.1(b), Fees shall include costs for out of town travel, related meals and accommodations for the duration of the Project and shall not be considered an Allowable Disbursement.
- B9.6 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.
- B9.7 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.
- B9.8 Payments to Non-Resident Consultants are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).
- B9.8.1 Fees stated shall not include any costs which may be incurred by the Consultant with respect to any applicable funding agreement obligations as outlined in D27. Any such costs shall be determined in accordance with D27.

**B10. PERSON HOURS (SECTION C)**

- B10.1 The Proposal shall include Form P: Person Hours for all disciplines and phases identified in D4 Scope of Services. Time estimates by for each phase work activity defined in D4.1 and in total for each individual identified in B12.2.
- B10.2 Proponents may use Form P: Person Hours included or a table of their own design provided it includes all information requested in accordance with B10.1.
- B10.3 The Proposal shall include Form P: Person Hours showing the charge out rates for each project personnel, the total hourly breakdown for each task and assigned Key Personnel for each Fixed Fee item of work identified in B9.1.
- (a) The total Fees on Form P: Person Hours should match Fees submitted in response to B9.
- B10.4 The Proponent shall submit a list of charge out rates for each generic project position (i.e. Project Manager, Lead Discipline Engineer, Discipline Drafter). For any unforeseen work, the Proponent will be allowed pending City approval to include additional work as part of Additional Work Allowances.
- (a) The Proponent shall clearly show rate adjustments for three (3) consecutive years for each generic position to be used. If the Proponent does not indicate any rate adjustments with their Bid, the specified rates from Form P: Person Hours shall be used for up to three (3) consecutive years.

**B11. EXPERIENCE OF PROPONENT AND SUBCONSULTANTS (SECTION C)**

- B11.1 Proposals should include:
- (a) Details demonstrating the history and experience of the Proponent and Subconsultants in providing programming; design, management of the project and contract administration services on three (3) projects of similar complexity, scope and value.
- (b) A maximum of three (3) similar projects. Should the Proponent prepare more than three (3) project references, only the first three (3) project references will be considered for evaluation.
- B11.2 For each project listed in B11.1(a), the Proponent should submit:
- (a) Location of the project (street, city and province);
- (b) Pictures of the project (including beginning and end of project);
- (c) Description of the project;
- (d) Role of the consultant;



- (e) Any other Consultant's on the project and their role otherwise identify no other Consultants used;
- (f) Proponent's original cost and final cost;
  - (i) Any deviations between original and final costs shall clearly describe the differences.
- (g) Project's original construction cost and final cost;
  - (i) Any deviations between original and final costs shall clearly describe the differences.
- (h) Design and Construction schedule (anticipated Project schedule and actual project delivery schedule, showing design separately) including the following:
  - (i) Detailed Design Award
  - (ii) 100% design Completion;
  - (iii) Construction Award;
  - (iv) Substantial Performance;
  - (v) Total Performance;
  - (vi) Any deviations between original and final schedules shall clearly describe the differences.
- (i) Project owner;
- (j) Reference information (two current names, position titles, telephone numbers and email addresses per project);
- (k) General Contractor company name.

B11.2.1 Where applicable, information should be separated into Proponent and Subconsultant project listings.

B11.3 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.

## **B12. EXPERIENCE OF KEY PERSONNEL ASSIGNED TO THE PROJECT (SECTION D)**

B12.1 Describe your approach to overall team formation and coordination of team members.

B12.1.1 Include an organizational chart for the Project.

B12.2 Identify the following Key Personnel assigned to the Project:

- (a) Project Manager;
- (b) Contract Administrator;
- (c) Automation Lead Engineer;
- (d) Civil / Municipal Lead Engineer;
- (e) Electrical Lead Engineer;
- (f) Geotechnical Lead Engineer;
- (g) Mechanical Lead Engineer;
- (h) PLC Programming Lead Engineer;
- (i) Process Lead Engineer; and
- (j) Structural Lead Engineer.

B12.3 Submit the experience and qualifications of the Key Personnel assigned to the Project for projects of similar complexity, scope and value, including the principals-in-charge, the Consultants Representative, managers of the key disciplines and lead designers. Roles of each of the Key Personnel in the Project should be identified in the organizational chart referred to in B12.2. Descriptions should include:

- (a) Planned role of key personnel intended for this project;

- (b) Short writeup of the person and why they would be good fit for project key person role;
- (c) Educational background and degrees;
- (d) Professional recognitions along with registration with Engineers Geoscientists Manitoba (for any personnel identified as Lead Engineer positions);
- (e) Identify each proposed discipline Lead Engineer that is registered with Engineers Geoscientists Manitoba.
- (f) Current job title;
- (g) Years of experience in current position;
- (h) Years of experience in design and construction administration services; and
- (i) Years of experience with current employer.

B12.4 For each person identified, list at least two 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;
- (d) Reference information (two current names with telephone numbers and email addresses per project).

### **B13. PROJECT UNDERSTANDING AND METHODOLOGY (SECTION E)**

B13.1 Describe your firm's project management approach and team organization during the performance of Services, so that the evaluation committee has a clear understanding of the methods the Proponent will use in the delivery of this Project.

B13.2 Methodology should be presented in accordance with the Scope of Services identified in D4.

B13.3 Proposals should address the following as separate proposal subsections:

- (a) the Proponent's understanding of the project;
- (b) the Proponent's approach and methodology to complete the work;
  - (i) Proponent's should carefully provide details for how the scope of services items will be accomplished rather the rewording the RFP scope items.
- (c) the Proponent's understanding of Standardized City Equipment to be used on this project;
- (d) the Proponent's understanding of the City Design Guidelines and how they will be used on this project;
- (e) any innovations to be used to perform the services;
- (f) any location specific issues;
- (g) any perceived project risks and challenges along with how they will be overcome;
- (h) any activities and services to be provided by the City;
- (i) the Project methodology with respect to the information provided within this RFP and the City's Project Management Manual at <http://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#2> and templates at <http://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#4> ; and;
- (j) any other issue that conveys your team's understanding of the Project requirements.

**B14. MANAGEMENT PROPOSAL (SECTION G)**

- B14.1 Describe your firm's Project management approach and team organization during the performance of Services, so that the evaluation committee has a clear understanding of the methods the Proponent will use in the delivery of this Project.
- B14.2 Describe the collaborative process/method to be used by the Key Personnel of the team in the various phases of the Project
- B14.3 Proposals should address:
- (a) Job function for each identified individual and group of individuals so identified;
  - (b) Time estimates by each work activity/phase defined in D4 Scope of Services in total for each individual identified in B12.2 and listed on Form P; Person Hours;
  - (c) Risk and Quality Management Systems that will be used on the project;
  - (d) Scheduling monitoring and control systems to be used on the project to ensure the Proponent and Contractor remain on schedule. Proponents should address actions to be done when design schedule starts to slip;
  - (e) Cost monitoring and control systems to be used on the project to ensure the Proponent remains on budget;
  - (f) Cost over runs and how they will be handled.

**B15. PROJECT SCHEDULE (SECTION H)**

- B15.1 The Proponent should include a key project schedule table indicating the following milestone dates:
- (a) Award of Contract;
  - (b) Technical Memorandum
  - (c) Preliminary (33%) Design Submission;
  - (d) 66% Design Submission;
  - (e) 99% Design Submission;
  - (f) 100% Design Completed;
  - (g) Construction Tender Posted to MERX;
  - (h) Construction Tender Closing;
  - (i) Award of Construction Contract;
  - (j) All Shop Drawings Reviewed and Approved;
  - (k) Temporary Bypass Pumping in Place;
  - (l) New Lift Pumps Back in Service;
  - (m) Commissioning Completed;
  - (n) Substantial Performance;
  - (o) Total Performance;
  - (p) Project Closeout (include Record Documents Received); and
  - (q) Any Other Critical Stages.
- B15.2 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 (monthly timescale) and milestone dates or events. The schedule should address each requirement of the Scope of Services.
- (a) The Proponent should include for two (2) week project blackout dates for City staff during Christmas holidays of each fiscal year and should be shown on the project schedule.

B15.3 The Proponent's schedule should include critical dates for review and approval processes by the City and other organizations anticipated during the design and tendering phases of the Project. Reasonable times should be allowed for completion of these processes.

(a) It is anticipated that each design submission will require ten (10) Business Days for City staff to review and should be shown on the project schedule.

B15.4 The Lift Pumps and associated piping can only be replaced while the station is on temporary bypass pumping. Bypass pumping will only be allowed to occur from November 1, 2026 to February 28, 2027. The Proponent's schedule should allow for three (3) months of bypass pumping.

## **B16. DISCLOSURE**

B16.1 Various Persons provided information or services with respect to this RFP. 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.

B16.2 The Persons are:

(a) MPE, a Division of Englobe (formerly MPE Engineering Ltd.).

B16.3 Additional Material:

(a) Tylehurst Lift Station Assessment Report produced by MPE Engineering included as Appendix B.

## **B17. CONFLICT OF INTEREST AND GOOD FAITH**

B17.1 Further to C3.2, Proponents, by responding to this RFP, declare that no Conflict of Interest currently exists, or is reasonably expected to exist in the future.

B17.2 Conflict of Interest means any situation or circumstance where a Proponent or Key Personnel proposed for the Services 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 their 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.

B17.3 In connection with their Proposal, each entity identified in B17.2 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 Consulting Contract Administrator; 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.

B17.4 Without limiting B17.3, the City may, in their 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 their 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 their sole discretion, to avoid or mitigate the impact of such Conflict of Interest.

B17.5 Without limiting B17.3, 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 their sole discretion:

- (a) disqualify a Proponent that fails to disclose a perceived, potential or actual Conflict of Interest of the Proponent or any of their Key Personnel;
- (b) require the removal or replacement of any Key Personnel proposed for the Services that has a perceived, actual or potential Conflict of Interest that the City, in their sole discretion, determines cannot be avoided or mitigated;
- (c) disqualify a Proponent or Key Personnel proposed for the Services that fails to comply with any requirements prescribed by the City pursuant to B17.4 to avoid or mitigate a Conflict of Interest; and
- (d) disqualify a Proponent if the Proponent, or one of their 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.

B17.6 The final determination of whether a perceived, potential or actual Conflict of Interest exists shall be made by the City, in their sole discretion.

## **B18. QUALIFICATION**

B18.1 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;
- (d) have or establish and staff an office in Winnipeg for the duration of the Project.

B18.2 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, Purchasing Division website at <https://winnipeg.ca/finance/findata/matmgt/listing/debar.pdf>

B18.3 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;
- (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) have completed the Accessible Customer Service online training required by the Accessibility for Manitobans Act (AMA) (see B18.4 and D6).
- (g) have completed Confined Space Entry Training for any Proponent staff that will be accessing the lower levels of the Lift Station.

B18.4 Further to B18.3(f), the Proponent acknowledges they and all Subconsultants have obtained training required by the Accessibility for Manitobans Act (AMA) available at [Accessibility Training](#) for anyone that may have any interaction with the public on behalf of the City of Winnipeg.

B18.5 The Proponent shall submit, within three (3) Business Days of a request by the Consulting Contract Administrator, further proof satisfactory to the Consulting Contract Administrator of the qualifications of the Proponent and of any proposed Subconsultant.

B18.6 The Proponent shall provide, on the request of the Consulting Contract Administrator, full access to any of the Proponent's equipment and facilities to confirm, to the Consulting Contract Administrator's satisfaction, that the Proponent's equipment and facilities are adequate to perform the Services.

## **B19. OPENING OF PROPOSALS AND RELEASE OF INFORMATION**

B19.1 Proposals will not be opened publicly.

B19.2 After award of Contract, the Contract amount and the name of the successful Proponent and their address will be available on the MERX website at [www.merx.com](http://www.merx.com).

B19.3 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).

B19.3.1 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 Protection of Privacy Act (Manitoba), as amended.

B19.4 Following the award of Contract, a Proponent will be provided with information related to the evaluation of their submission upon written request to the Consulting Contract Administrator.

## **B20. IRREVOCABLE OFFER**

B20.1 The Proposal(s) submitted by the Proponent shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid/Proposal.

B20.2 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 Services for the time period specified in Paragraph 11 of Form A: Bid/Proposal.

## **B21. WITHDRAWAL OF OFFERS**

B21.1 A Proponent may withdraw their Proposal without penalty prior to the Submission Deadline.

## **B22. INTERVIEWS**

B22.1 The Consulting Contract Administrator may, in their sole discretion, interview Proponents during the evaluation process. The Proponent would be required to attend a Pre-Award meeting to confirm they understand the contract details and confirm they have the resources to meet schedule. The Consulting Contract Administrator would run the Pre-Award meeting.

## **B23. NEGOTIATIONS**

B23.1 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.

B23.2 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.

B23.3 If, in the course of negotiations pursuant to B23.2, 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.

## **B24. EVALUATION OF PROPOSALS**

B24.1 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 B18: (pass/fail)
- (c) Proponent Attended at Least One (1) Site Investigation (pass/fail)
- (d) Fees; (Section B) 20%
- (e) Person Hours; (Section C) (pass/fail)
- (f) Experience of Proponent and Subconsultant; (Section D) 20%
- (g) Experience of Key Personnel Assigned to the Project; (Section E) 25%
- (h) Project Understanding and Methodology (Section F) 25%
- (i) Management Proposal (Section G) 5%
- (j) Project Schedule. (Section H) 5%

B24.2 Further to B24.1(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.

- B24.3 Further to B24.1(b), the Award Authority shall reject any Proposal submitted by a Proponent who does not demonstrate, in their Proposal or in other information required to be submitted, that it is qualified.
- B24.4 If, in the sole opinion of the City, a Proposal does not achieve a pass rating for B24.1(a), B24.1(b), B24.1(c) and B24.1(e), the Proposal will be determined to be non-responsive and will not be further evaluated.
- B24.5 Further to B24.1(d), Fees will be evaluated based on Fees submitted in accordance with B9.
- B24.6 Further to B24.1(d), the Award Authority may reject a Proposal as being non-responsive if it exceeds the funds available as shown in D4.3.
- B24.7 Further to B24.1(f), Experience of Proponent and Subconsultants will be evaluated considering the experience of the organization on projects of similar size and complexity as well as other information requested, in accordance with B11.
- B24.8 Further to B24.1(g), Experience of Key Personnel Assigned to the Project will be evaluated considering the experience and qualifications of the Key Personnel and Subconsultant personnel on Projects of comparable size and complexity, in accordance with B12.
- B24.9 Further to B24.1(h), Project Understanding and Methodology will be evaluated considering your firm's understanding of the City's Project, project management approach and team organization, in accordance with B13.
- B24.10 Further to B24.1(i), Management Proposal will be evaluated considering the Proponent's ability to comply with the requirements of the Project, in accordance with B14.
- B24.11 Further to B24.1(j), Project Schedule will be evaluated considering the Proponent's ability to comply with the requirements of the Project, in accordance with B15.
- B24.12 Notwithstanding B24.1(f) to B24.1(j), 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.
- B24.13 Proposals will be evaluated considering the information in the Proposal Submission and any interviews held in accordance with B22.
- B24.14 Where references are requested, the reference checks to confirm information provided may not be restricted to only those submitted by the Proponent, and may include organizations representing Persons, known to have done business with the Proponent.

## **B25. AWARD OF CONTRACT**

- B25.1 The City will give notice of the award of the Contract, or will give notice that no award will be made.
- B25.2 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 qualified, and the Proposals are determined to be responsive.
- B25.2.1 Without limiting the generality of B25.2, 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 their 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.

- B25.3 Where an award of Contract is made by the City, the award shall be made to the qualified Proponent submitting the most advantageous offer.
- B25.4 The City may, at their discretion, award the Contract in phases.
- B25.5 Further to B25.4 the City reserves the right to negotiate and award future phases to the successful Proponent.
- B25.6 Further to Paragraph 7 of Form A: Bid/Proposal and C4, the City may issue an award letter to the successful Proponent in lieu of execution of Contract Documents
- B25.6.1 The Contract documents as defined in C1.1(u) in their entirety shall be deemed to be incorporated in and to form a part of the award letter notwithstanding that they are not necessarily attached to or accompany said award letter.
- B25.7 The form of Contract with the City of Winnipeg will be based on the Contract as defined in C1.1(v).
- B25.8 If funding for the Services is provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada, Proponents are advised that the terms of D27 shall immediately take effect upon confirmation of such funding, regardless of when funding is confirmed.
- B25.9 Following the award of Contract, a Proponent will be provided with information related to the evaluation of their Proposal upon written request to the Consulting Contract Administrator.
- B25.10 If, after the award of Contract, the Project is cancelled, the City reserves the right to terminate the Contract. The Proponent 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 2022-09-02) 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, Purchasing Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](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.

#### D2. CONSULTING CONTRACT ADMINISTRATOR

D2.1 The Consulting Contract Administrator is:

Kevin Sapiak, P.Eng.  
Senior Project Engineer  
Telephone No. (431) 278 0876  
Email Address: [kevinsapiak@winnipeg.ca](mailto:kevinsapiak@winnipeg.ca)

D2.2 At the pre-commencement meeting, the Consulting Contract Administrator will identify additional personnel representing the Consulting Contract Administrator and their respective roles and responsibilities for the Services.

#### D3. BACKGROUND

D3.1 The administrative structure for the City of Winnipeg is a Chief Administrative Officer (CAO) who is the head of the public service and provides overall leadership to all City departments.

#### D4. SCOPE OF SERVICES

D4.1 The Services required under this Contract shall consist of ^in accordance with the following:

- (a) Preliminary Engineering Design (D7);
- (b) Detailed Engineering Design (D8);
- (c) Construction Documents (D9);
- (d) Procurement Process (D10);
- (e) PLC & HMI Controller Programming (D11);
- (f) Contract Administration Services – Non-Resident (D12);
- (g) Contract Administration Services – Resident (D13);
- (h) Commissioning (D14);
- (i) Record Documents and Project Closeout (D15); and
- (j) Additional Work Allowance (D16).

D4.1.1 The Services required under D4.1 shall be in accordance with the City's Project Management Manual <http://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#2> and templates <http://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#4> . Notwithstanding the foregoing, the Consultant is being engaged by the City for their professional expertise; the Consultant shall bring to the Consulting Contract Administrator's attention any aspect of the City's Project Management Manual or templates which the Consultant is of the opinion is not consistent with good industry practice.

D4.2 The following shall apply to the Services:

- (a) The City of Winnipeg, Water and Waste Department - Electrical Design Guide, current revision: <https://winnipeg.ca/waterandwaste/dept/manual.stm#wastewater>

- (b) The City of Winnipeg, Water and Waste Department - Automation Design Guide, current revision: 03 attached as Appendix D
- (c) The City of Winnipeg, Water and Waste Department – Identification Standard, current revision: <https://winnipeg.ca/waterandwaste/dept/manual.stm#wastewater>
- (d) The City of Winnipeg, Water and Waste Department – HMI Layout and Animation Plan, current revision: 02 attached as Appendix E
- (e) The City of Winnipeg, Water and Waste Department – Tag Naming Standard, current revision: 00 attached as Appendix J
- (f) City of Winnipeg Green Building Policy: New City-Owned Buildings and major additions  
<http://clkapps.winnipeg.ca/DMIS/DocExt/ViewDoc.asp?DocumentTypeId=2&DocId=5989>
- (g) Universal Design Policy  
<http://clkapps.winnipeg.ca/DMIS/DocExt/ViewDoc.asp?DocumentTypeId=2&DocId=3604>

D4.3 The funds available for this Contract are \$ 500,000.00.

## D5. DEFINITIONS

D5.1 When used in this Request for Proposal:

- (a) "**A/C**" means Air Conditioning;
- (b) "**ACH**" means Air Changes per Hour;
- (c) "**ATS**" means Automatic Transfer Switch;
- (d) "**Commissioning**" means a process by which equipment is physically verified and tested at the installed site location to verify if equipment functions according to design and functional requirements;
- (e) "**CSO**" means Combined Sewer Overflow;
- (f) "**CSTE**" means Customer Service Termination End;
- (g) "**FAT**" means Factory Acceptance Testing;
- (h) "**FRP**" means Fibre Reinforced Polymer;
- (i) "**H<sub>2</sub>S**" means Hydrogen Sulfide;
- (j) "**HMI**" means Human Machine Interface;
- (k) "**HVAC**" means Heating, Ventilating, and Air Conditioning;
- (l) "**IO**" means Input / Output;
- (m) "**mASL**" means metres Above Sea Level;
- (n) "**MCC**" means Motor Control Centre;
- (o) "**MH**" means Manhole;
- (p) "**NMS**" means National Master Specifications;
- (q) "**O&M**" means Operations & Maintenance;
- (r) "**OSS**" means Operational Shutdown Summary;
- (s) "**NMS**" means National Master Specifications;
- (t) "**P&ID**" means Piping & Instrumentation Diagram;
- (u) "**PDWF**" means Peak Dry Weather Flow;
- (v) "**PLC**" means Programmable Logic Controller;
- (w) "**Professional Engineer**" means an individual that registered to practice engineering in the Province of Manitoba;
- (x) "**PWWF**" means Peak Wet Weather Flow;

- (y) **“Record Documents”** means final documents that have been prepared and sealed by a registered Professional Engineer in the Province of Manitoba after site verifying in detail the completed work of the project. The sealing Professional Engineer is taking full responsibility for the completed works while ensuring that applicable current codes and standards are being met;
- (z) **“RTU”** means Remote Terminal Unit;
- (aa) **“SCADA”** means Supervisory Control And Data Acquisition;
- (bb) **“SCR”** means Silicon Controlled Rectifier;
- (cc) **“Supply Chain Disruption”** means an inability by the Consultant/Contractor to obtain goods or services from third parties necessary to perform the Work of the Contract within the schedule specified therein, despite the Consultant/Contractor making all reasonable commercial efforts to procure same. Consultant/Contractors are advised that increased costs do not, in and of themselves, amount to a Supply Chain Disruption;
- (dd) **“TDH”** means Total Dynamic Head;
- (ee) **“TVSS”** means Transient Voltage Surge Suppressor;
- (ff) **“UPS”** means Uninterruptible Power Supply;
- (gg) **“VFD”** means Variable Frequency Drive.

## **D6. GENERAL REQUIREMENTS**

- D6.1 The Water and Waste Department will provide assistance towards the following services:
  - (a) Site access to the Station.
  - (b) Provision of any available information on Tylehurst Lift Station operational records (i.e. pump cycle times, maintenance records, sewer flow gauging).
  - (c) Performing pressure and flow testing of the existing lift pump equipment.
  - (d) Providing SCADA flow pumping trends for dry weather and wet weather events.
  - (e) Providing rainfall reports as needed.
- D6.2 The City of Winnipeg has adopted Manitoba Building Code (2020 edition). All designs shall comply with the latest building code edition.
- D6.3 All electrical work shall comply with latest version of Manitoba Electrical Code along with Canadian Electrical Code (2024 edition).
- D6.4 Latest available editions of NFPA 820 along with CSA B149.1 shall be followed for the project even if they have not been adopted by the City of Winnipeg.

## **D7. PRELIMINARY ENGINEERING DESIGN**

- D7.1 Provide preliminary engineering services including:
  - (a) Architectural and Building Design;
  - (b) Civil and Municipal Engineering Design;
  - (c) Structural Engineering Design;
  - (d) Mechanical Engineering Design – Process Pumping and Piping;
  - (e) Mechanical Engineering Design – HVAC System & Backup Power;
  - (f) Electrical Engineering Design; and
  - (g) Automation and Instrumentation Engineering Design.
- D7.2 Meetings

- (a) The Consultant shall plan for seven (7) meetings total, one (1) hour in length per meeting. The consultant shall ensure that the project manager and all discipline leads attend each meeting. The Consultant will be required to prepare and distribute meeting minutes for all meetings.
- (b) Attend a mandatory kickoff meeting with the Design & Construction and Wastewater Services Branches of the Water and Waste Department to review project expectations and limits.
- (c) Attend biweekly preliminary design progress Microsoft Teams meetings with the Design & Construction and Wastewater Services Branches of the Water and Waste Department to review preliminary design progress. Meetings will be used to update progress to date, anticipated submittals, any ongoing project issues along with ask questions to City staff.

#### D7.3 Site Visits

- (a) Attend a mandatory preliminary site visit with the Consulting Contract Administrator and City Collections staff to review existing site conditions, take measurements and collect data. The Consultant shall ensure that all discipline leads/staff attend the preliminary site visit. The Consultant will be required to arrange the site visit with City Wastewater Collections Supervisor.
- (b) The Consultant will be allowed to take pictures of the Tylehurst Lift Station permitted no City staff are in the pictures.
- (c) The Consultant will be required to arrange a second site to witness pressure and flow testing performed by City staff. The Consultant will be required to analyze the data in order to determine realistic 'C' values of the existing force main for determining actual force main losses. Data will need to be included for determining hydraulic system curves.
- (d) Any staff requiring to access the lower levels of the Lift Station will be required to have Confined Space Entry Training. The Consulting Contract Administrator will be checking all Consultant staff planning to enter the lower areas on site. Any staff that can not produce proof of training on site will not be allowed to enter the lower levels of the Lift Station.

D7.4 Tylehurst Lift Station has a large number of power failures that results in wastewater being discharged to the Assiniboine River. The Consultant shall investigate adding indoor backup power for Tylehurst Lift Station to minimize future wastewater discharges related to power failures. Backup power shall be capable of supplying temporary power for all critical loads (all pumps to keep up with wet weather flows, HVAC fans, 240V and below loads) for the following:

- (a) Backup power options such that all equipment is within a new building including:
  - (i) Natural gas generator along with noise reduction;
  - (ii) Customized 3-phase UPS system (600V input & 600V output) with two (2) hour backup time; and
  - (iii) Customized 3-phase UPS system (600V input & 600V output) with four (4) hour backup time.
  - (iv) The preference is for 3-phase UPS systems that do not require step-up and/or step-down transformers to meet the required UPS voltages. The city will consider transformers if 600V rated UPS systems are not available.
- (b) Each option shall consider the full size of structure required, an Automatic Transfer Switch, all equipment needed, maintenance requirements and ventilation to meet NFPA 820 requirements. Backup power should not be provided for any 600V heating loads.
- (c) Provide class III cost estimates, advantages, disadvantages along with equipment lead times with each option.
- (d) Provide recommendation for preferred option as part of the detailed engineering design scope.
- (e) The Consultant shall prepare a Technical Memorandum of the indoor backup power investigation findings. Allow for a minimum one (1) week review of the Technical Memorandum by City staff.

- D7.5 The Consultant shall develop a new excel file to include new hydraulic system curves along with preliminary pump curves for the Tylehurst Lift Station. The curves shall include:
- (a) System curve for force main;
  - (b) Preliminary pump curves shall include curves for one (1) pump in operation, two (2) pumps in operation and theoretical three (3) pumps in operation. Provide recommendations for pump speed (based on pumping unit specifications) to be utilized based on full size impeller and pipe diameter size to provide maximum pumping efficiency.
- D7.6 Preliminary Design Services
- (a) General
    - (i) The existing Tylehurst Lift Station Building size is not sufficient to house all the equipment required for this project. The Consultant shall design a new structure of sufficient size to house all new equipment.
    - (ii) A new Backup Power building (room) shall be connected to the new Lift Station building to house the indoor natural gas generator or 3-phase UPS system along with Automatic Transfer Switch.
  - (b) Architectural and Building Design Details
    - (i) Provide design for a new Lift Station and Backup Power Structure that is aesthetically suitable for the area. The new roof shall be a metal gable roof with eavestroughs and down spouts. Walls shall be coloured stone veneer.
  - (c) Civil and Municipal Engineering
    - (i) Provide preliminary design for a temporary bypass pumping to be provided on existing force main. Bypass pumping capacity shall be provided to accommodate two (2) pumps, with each pump capable of pumping approximately 105 L/s (1664 USgpm) at a TDH determined by the Consultant.
    - (ii) Bypass pumping vault shall be designed as a manhole complete with valves for permanent and temporary force main tie-ins. Temporary force main tie-in shall be designed using a wye connection for future pipeline pigging.
  - (d) Structural Engineering
    - (i) Provide an overall structural review of the existing Lift Station substructure to determine condition, identify and scope any repair work required.
    - (ii) Provide preliminary design for a new Lift Station Main Floor and Backup Power Building (room) combined building complete with a gable metal roof. Backup Power room and Main Floor shall each include a new exterior double door along with a new single interior door between rooms.
    - (iii) Provide design to repair interior substructure surfaces (i.e.: sand blasting, patching, painting) to floors, walls and ceilings.
    - (iv) Test to determine if lead paint and/or asbestos is present in the Station and if present, develop procedures for working around and safe handling of these materials.
    - (v) Provide condition review of existing Lift Station stairs. Propose means to refurbish and reuse stairs.
    - (vi) Provide preliminary design for Main Floor, Lower Level, Comminutor Chamber, Motor Room and Pump Room hoisting/crane devices.
    - (vii) Provide structural reinforcement preliminary design of Lift Station Motor Room and Pump Room to accommodate three (3) new larger sized lift pumps.
  - (e) Mechanical Engineering – Process Pumping and Piping
    - (i) Provide design recommendation for replacement of three (3) existing wastewater lift pumps and pump motors in the “dry-pit” section of the Station with three (3) new wastewater lift pumping units (pumps, motors, driveshafts, guards, etc.)
      - The Consultant shall review the desired flow capacities and provide recommended preliminary pump sizing to achieve the desired flows in the system:

- Only two (2) out of the three (3) pump shall be required to be run at the same time.
  - The new pumps shall be sized as determined by the Consultant in accordance with the following:
    - Pumps shall be all be identical, non-clog sewage pumps capable of handling 75mm (3") solids and suitable for vertical dry-pit installation and capable to run in reverse mode. Pumps shall be required to include pumps (located in Pump Room), motors (located in Motor Room) along with a driveshaft to connect the pumps and motors.
    - Pumps shall be sized such that two (2) pumps are capable of providing a minimum flow of 380 L/s (5151 USgpm) at a Total Dynamic Head determined by the Consultant. Pumps to include a full-size impeller run at 1200 RPM.
    - Pump motors shall be 575 Volt, 3-phase, 60 Hertz. Pumps shall utilize a full-size impeller to minimize clogging. The use of a trimmed impeller to be used shall be reviewed and approved by the City prior to specifying. Pump motors and driveshafts shall be sized for full size impellers.
    - All pumps shall be designed for a double mechanical cartridge seal complete with separate automated seal water systems.
  - The PDWF rates identified are from historical sewer gauging records. This gauging data will be available to the Consultant.
- (ii) Provide preliminary design to replace all lift pump intake and discharge process piping, including all valves, flow meters, pipe and pipe fittings.
- Each lift pump discharge piping shall include a check valve, flow meter, manually operated isolation valve.
  - Force main within the station and up to bypass pumping vault shall be replaced.
  - Bypass discharge line (to Gate Chamber) within the station and up to 3 metres outside the station shall be replaced. Bypass discharge line shall include a manual isolation valve within the station.
- (f) Mechanical Engineering– HVAC System and Backup Power
- (i) If backup power utilizes a permanent standby natural gas generator, ensure CSA B149.1 latest edition is followed that requires a permanent methane gas detector to be installed and connected into the generator control panel along with HVAC system.
  - (ii) Provide design to install a new outdoor air conditioning unit(s) to provide cooling to for Lift Station Main Floor and Backup Power room.
  - (iii) Provide preliminary design for Lift Station and Backup Power room HVAC system for all areas/rooms (excluding Wet Well and Gate Chamber) to incorporate six (6) continuous Air Changes per Hour (ACH). HVAC system design shall comply with latest edition of NFPA 820.
  - (iv) All HVAC fans shall be rated 575V, 3-phase, 60 Hz. All HVAC equipment shall utilize 24 VAC controls.
- (g) Electrical Engineering
- (i) Refer to City of Winnipeg Electrical Design Guide for requirements associated with City of Winnipeg Wastewater Lift Stations.
  - (ii) The electrical service is at capacity and will require a service upgrade through Manitoba Hydro. Prepare a spring demand load list capable of powering three (3) lift pumps running along with planned HVAC and miscellaneous electrical loads. The demand load list shall be used for sizing the new electrical service size.
  - (iii) Review and provide analysis on historical pump start frequency data (supplied by the Water and Waste Department) to confirm the expected number of pump starts within various dry and wet weather flow conditions to determine if station operation meets expected requirements.



- (iv) Provide preliminary design for new equipment to be used on the project including: CSTE, MCCs, VFDs, step down transformer and 120/240V distribution.
  - (v) Provide preliminary design to provide backup power to include: generator or 3-phase UPS system along with an ATS. Should a generator be installed, an outdoor stepped load bank would be required to be designed for testing purposes. Provide details on what is needed to meet current codes.
  - (vi) Provide design for new electrical equipment to be provided as part of the project.
  - (h) Automation and Instrumentation Engineering
    - (i) Review the existing automation system including pump controls and make design recommendations consistent with recent City of Winnipeg Wastewater Pumping Station upgrades.
    - (ii) Provide preliminary design to remove existing Remote Terminal Unit (RTU) panel and design a new PLC Control Panel. The RTU panel will need to remain in place during construction so that CSO equipment can be monitored.
    - (iii) Provide details for Wet Well Level monitoring and pumping controls to be used.
    - (iv) Provide details for HVAC controller(s) to be used for the Lift Station and Backup Power room, independent of any PLC Controls.
    - (v) The Lift Station contains existing CSO equipment that will need to be designed to be transferred over to the new PLC Control Panel. The existing CSO Panel and CSO instruments shall be reused in the design. The CSO Panel shall be designed to be moved to the Main Floor Level.
    - (vi) Provide details for new instruments to be used on the project.
- D7.7 Preparation of a Preliminary Design Report complete with description of each discipline work to be performed. Allow for a minimum two (2) weeks review of the Preliminary Design Report by City staff. The report shall include:
- (a) Background information on the Tylehurst Lift Station.
  - (b) Reference governing standards/codes that are applicable to the work.
  - (c) Historical pumping trends for dry and wet weather data using data gathered from SCADA.
  - (d) Details on backup power options and recommended option to be provided for the station.
  - (e) Pump design criteria including duty pump flow along with TDH.
  - (f) Planned temporary bypass pumping details including duty pumps and TDH.
  - (g) Standardized City equipment to use on the project.
  - (h) Separate sections for each discipline engineering work (Architectural/Building, Structural, Civil, Mechanical Process, Mechanical HVAC, Electrical, Automation & Instrumentation).
  - (i) Options for City staff to select anticipated designs.
  - (j) High level CAD Drawings (such as electrical single line diagrams, plan drawings, elevation details, mechanical schedules, P&ID diagrams, etc.).
  - (k) Instrument List to convey the design. Provide options for City staff to select anticipated designs. Provide an excel Drawing Number and Titles of each line of planned drawings to be produced. Provide Hydraulic System Curves along with Preliminary Pump Selection Curves in excel format. The Consulting Contract Administrator will provide a sample template to be used.
  - (l) Provide Hydraulic System Curves along with Preliminary Pump Selection Curves in excel format.
  - (m) An excel drawing list to include all new drawing numbers and all title lines, separated out for each discipline to be created for the project. The Consultant Contract Administrator will arrange for drawing numbers and title lines to be reserved once received from the Consultant. The Consulting Contract Administrator will provide a sample template to be used.

- (n) Provide a Class III cost estimate for the proposed work at the Preliminary Design Submission.

## **D8. DETAILED ENGINEERING DESIGN**

D8.1 Provide detailed engineering services including:

- (a) Architectural and Building Design;
- (b) Civil and Municipal Engineering;
- (c) Geotechnical Engineering;
- (d) Structural Engineering;
- (e) Mechanical Engineering – Process Pumping and Piping;
- (f) Mechanical Engineering – HVAC System & Backup Power;
- (g) Electrical Engineering; and
- (h) Automation and Instrumentation Engineering.

D8.2 Utilize Standardized City Equipment including:

- (a) Schneider Electric equipment (via RFP 756-2013) for Motor Control Centres, Variable Frequency Drives along with Programmable Logic Controllers.
- (b) Siemens equipment (via RFP 449-2014) for Flow Transmitters, Ultrasonic Level Transmitters, Differential Pressure Transmitters and Temperature Transmitters.
- (c) MSA equipment (via RFP 123-2014) for Gas Detection Systems.

D8.3 Meetings

- (a) The Consultant shall plan for thirteen (13) meetings total, one (1) hour in length per meeting. The Consultant shall ensure that the project manager and all discipline leads attend each meeting. The Consultant will be required to prepare and distribute meeting minutes for all meetings. Meetings will be used to update progress to date, anticipated submittals, any ongoing project issues along with ask questions to City staff.
- (b) Attend biweekly preliminary design progress Microsoft Teams meetings with the Design & Construction and Wastewater Services Branches of the Water and Waste Department to review preliminary design progress.

D8.4 Design stage submissions shall be provided for City staff to review Consultant work. Allow for a minimum two (2) weeks review each Design Package by City staff. Any incomplete submissions will be returned and will require resubmission until the Design Package stage submission is complete. The following Design Package submissions and list of deliverables at each design stage submission includes:

- (a) Prepare a 66% Design Package complete with Drawings List in excel format, Drawings, Specifications, Instrument list, DNP3 I/O mapping list, Control Narrative report, PLC Programming report and Class II cost estimate.
- (b) Prepare a 99% Design Package complete with Drawings, Specifications, Instrument List, DNP3 I/O mapping list, Control Narrative report, Shop Drawing Submittal Log and Class I cost estimate.
- (c) Prepare a 100% Design (Tender Ready) Package review submission complete with Drawings, Specifications, Instrument List, DNP3 I/O mapping list, Control Narrative report, Shop Drawing Submittal Log and Class I, revised pre-tender cost estimate. The pre-tender estimate must be provided to the Water and Waste Department's contact person for review at least fifteen (15) calendar days prior to tendering. The project shall not be tendered without this review.

D8.5 Engineering Design Services

- (a) Architectural and Building Design

- (i) The existing building size is not sufficient to house all the equipment required for this project. The Consultant shall design a new structure of sufficient size to house all new equipment. The new building superstructure for the wastewater pumping station will generally consist of:
    - Stone veneer and masonry construction;
    - Metal profile gable roof complete with eavestroughs and down spouts;
    - Main exterior entrance steel double man-entry doors.
    - The superstructure will be required to house the electrical distribution centre, equipment hoist, HVAC equipment and all other necessary components above grade.
    - The superstructure should be aesthetically suitable for the location of the pumping station. The superstructure shall extend to the north to include the outdoor hatch for equipment removal.
  - (ii) The existing building foundation is to be utilized as part of the footprint of the new superstructure.
  - (iii) Provide new insulation and vapour barrier for the Main Floor and lower level rooms.
  - (iv) Design new backup power room structure for housing standby natural gas generator or 3-phase UPS system. The new Backup Power Room superstructure shall connect to the new Lift Station structure and will generally consist of:
    - Stone veneer and masonry construction to match Lift Station structure;
    - The superstructure will be required to house standby natural gas generator or 3-phase UPS system, ATS and all other necessary components above grade.
    - The superstructure shall connect to new Lift Station Building. The Consultant will need to make sure all equipment hatches along with wet well entrance are accounted for. The Backup Power building shall be a separate room from the Lift Station Main Floor.
    - Main entrance steel double man-entry doors on the north wall for removing backup power equipment along with a single door going to the Lift Station Main Floor.
- (b) Civil and Municipal Engineering
- (i) Provide design for temporary bypass pumping including:
    - The Wet Well has one (1) incoming 500mm diameter gravity fed wastewater pipe to the Lift Station Wet Well. Wastewater pipe will need to be included temporary bypass connections in order to fully isolate the Wet Well during Construction.
    - The Gate Chamber shall be designed to house the temporary bypass pumps with a temporary force main going to a new bypass vault manhole.
    - New permanent bypass vault manhole to house force main valve connections (Lift Station and Bypass Pump force main connections). Temporary force main tie-in shall be designed using a wye connection for future pipeline pigging. It is planned that the assembly would remain after temporary bypass pumping is completed for City to perform bypass pumping in the future.
    - Bypass pumping will only be allowed to occur during low flow (winter) months, November - February.
    - Bypass pumping capacity shall be provided to accommodate two (2) pumps, with each pump capable of pumping approximately 105 L/s (1664 USgpm) at a TDH determined by the Consultant.
    - Under dry weather flows, the time from shutdown of the Lift Station pumps to overflow is less than 15 minutes. Using a raised weir elevation of 900 mm, the time to overflow is approximately 2.75 hours, while the time to basement flooding is approximately 36 hours. The critical manhole (S-MH70013355) is located at the Intersection of Richmond Way & Richmond Street where the

critical rim elevation is 231.396 mASL while the critical basement elevation is 228.996 mASL.

- The weir will be required to be raised during bypass pumping such that there is at least one (1) hour of storage time prior to an overflow occurring.
  - (ii) Repairs to existing paved surfaces around the Station property.
- (c) Structural Engineering
- (i) Ensure that all building design upgrades are comply with the Manitoba Building Code, latest edition.
  - (ii) Provide an overall structural review of the existing Station substructure to determine condition, identify and scope any repair work required.
  - (iii) Provide design to replace Wet Well access hatch rim. The ladder rungs shall be removed and a new stainless steel ladder designed for entry into the Wet Well chamber.
  - (iv) The existing Lift Station superstructure will be not be large enough to accommodate new equipment and code spacing requirements. Provide design for a new superstructure sufficient in size and layout to adequately accommodate the proposed installation of all required above grade equipment and components, etc. The building shall be insulated and be code compliant with all building codes. The new structure shall be designed with trusses to be a gable roof, complete with metal roofing, eavestroughs and downspouts along with a double main entrance door. Provide seismic calculations for the new buildings required as part of Manitoba Building Code 2020.
  - (v) Provide design of all interior substructure surface repairs (i.e.: sand blasting, patching, painting) to floors, walls and ceilings.
  - (vi) Test to determine if lead paint and/or asbestos is present in Tylehurst Station and if present, develop procedures for working around and safe handling of these materials.
  - (vii) The Lift Station suspended floor slabs are in extremely poor condition and the structural integrity of the floors is compromised. Provide structural analysis on the floor slabs and provide structural reinforcement to make the floor slabs safe for use. Include all steel reinforcing requirements along with any new vertical supports required.
  - (viii) Provide design to include new swing gates around all Lift Station floor hatches.
  - (ix) All Lift Station rooms (Lower Level, Comminutor Chamber, Pump Room, Motor Room) stairs are in good shape and shall be reused. Provide design to refurbish all Lift Station rooms stairs and ladders to securely fasten and remove any corrosion.
  - (x) Provision of removable barriers that can be installed around interior floor hatches when hatches are opened.
  - (xi) All applicable forces and loadings (both during construction and post construction) shall be taken into consideration for the design of each component above and/or additional components included to this assignment.
  - (xii) Recommendation for design and type of Main Floor, Motor Room and Pump Room hoisting/crane devices, preferably a suspended steel I-Beam design with a movable trolley hoist and minimum 1 tonne lifting capacity. Provide lifting devices capable of removing all pumping and piping materials without affecting operation of other pumping units.
  - (xiii) Design new housekeeping pad(s) for MCC's and VFD's along with backup power (standby generator or 3-phase UPS system).
  - (xiv) Design new concrete support slabs for new pumps and piping.
  - (xv) Include design work to properly slope Pump Room (Dry Well) floor so any water drains to the sump pit.
  - (xvi) Provide seismic calculations for the new buildings required as part of Manitoba Building Code 2020.

- (xvii) The Lift Station outdoor equipment removal hatch slab is in poor shape. Provide structural design to repair hatch slab. Provide design to replace outdoor equipment hatch. The new hatch shall be designed to be indoors.
- (d) Mechanical Engineering – Process Pumping and Piping
- (i) Ensure that all mechanical process design complies with the Manitoba Building Code (latest edition).
- (ii) Provide design recommendation for replacement of three (3) existing wastewater lift pumps and pump motors in the “dry-pit” section of the Station with three (3) new wastewater lift pumping units (pumps, motors, driveshafts, guards, etc.) including:
- Pumps shall be of the same manufacturer and shall all be identical, non-clog sewage pumps capable of handling 75mm (3”) solids and suitable for vertical dry-pit installation and capable to run in reverse mode. Pump assemblies that are considered a submersible style pump where the motor is directly connected to the pump will not be acceptable.
  - Two (2) pumps both running to provided a minimum station pumping capacity of 380.0 L/s (6023 USgpm) at a Total Dynamic Head determined by the Consultant.
  - Pumps shall be upsized from existing pump sizes such that only two (2) out of the three (3) pumps shall be required to be run at the same time. Should three (3) larger sized lift pumps not fit within the existing pump room, three (3) similar sized pumps shall be provided with all three (3) required to run during wet weather events.
  - Pumps shall utilize double mechanical cartridge seals that require potable water for sealing. Pump seals that only utilize single seals and/or seals not requiring seal water will not be acceptable.
  - The pumps shall utilize a full-size impeller run at 1200 RPM or lower in order to minimize rag clogging. Unless reviewed and approved by the City, trimmed impellers will not be acceptable for the station.
  - Pump motors shall be 575 Volt, 3-phase, 60 Hertz and be premium efficiency. The new motors will likely need to be upsized to 50 HP or higher for the increased pump flows.
  - Pump motors and drive shaft shall be sized for the full-size pump impeller. Under no condition shall the motor and drive shaft be sized for a trimmed impeller.
  - Vibration and temperature monitoring instruments are required on two (2) of the four (4) bearings per pump including, the motor end drive shaft (motor end side) along with pump end drive shaft (drive shaft side).
  - The Consultant shall develop a new excel file to include new hydraulic system curve along with preliminary pump curves for the Tylehurst Station. Pump curves shall include curves for one (1) pump in operation, two (2) pumps in operation and theoretical three (3) pumps in operation. Provide recommendation for pump speed (based on pumping unit specifications) to be utilized based on full size impeller and pipe diameter size to provide maximum pumping efficiency. The City may consider non-standard pump speeds if pumps are operating closer to the best efficiency point.
  - The PDWF rates identified are from historical sewer gauging records. This gauging data will be available to the Consultant.
  - Pumps must be able to rotate through the duty cycle so that the lead pump changes with ever cycle.
  - Pumps must be capable of selected duty for both PLC Mode and Local (Backup) Mode such that City staff can decide which pump always starts/stops first.
  - Pumps must be capable of being run in reverse for unclogging/de-ragging purposes.

- Each pump shall include a complete rebuild kit for overhaul of each pump. This includes spare parts such as: impeller, upper bearings (motor side) set, lower bearings (pump side) set, mechanical seal set, wear rings, gaskets, O-rings, AEGIS ground ring and associated hardware.
  - The Consultant will be required to pre-qualify a minimum of three (3) pump suppliers and models to be listed on the Construction Tender specifications.
- (iii) Provide design to replace all lift pump intake process piping, including all valves and fittings inside the Lift Station. New intake piping shall be designed to include the following:
- Each lift pump intake piping shall include a manually operated gate stem (with external position indicator) valve along with piping and pipe fittings to connect with the pump intake flange. New lift pump intake piping shall be separate for each pump (i.e. pump intake piping is not tied together).
  - New inlet piping going into the Wet Well. Existing wall penetration holes shall be modified for new piping to be installed. All wall penetrations shall be properly sealed to prevent the ingress of wastewater along with gases from passing into the pump room (dry well).
- (iv) Provide design to replace all lift pump discharge process piping, including all valves and fittings inside the Lift Station along with short section of force main outside of the Lift Station. New discharge piping shall be designed to include the following:
- Each lift pump discharge piping shall include a check valve, flow meter, manually operated isolation valve (with external position indicator), along with pipe and pipe fittings to connect with pump discharge flange.
  - Flow meters on each pump discharge piping shall be 24 VDC electromagnetic Siemens SITRANS F M MAG 6000 series flow transmitters complete with SITRANS F M MAG 5100W series flow sensors and Remote Wall Mount Kits FDK:085U1053 as standardized by the City. Each flow meter shall include a 4-20 mA output signal and tied into the PLC Control Panel for monitoring. Flow meters shall be designed such that they are easily accessible (without the use of a ladder) for maintenance work such as calibration.
  - All lift pump discharge piping shall include all pipe and pipe fittings to tie into the existing force main and discharge line (to Gate Chamber). Discharge line and force main will each require a new manually operated gate valve.
  - New wall penetrations of force main and discharge line (to Gate Chamber) along with replacement of short section of piping outside the station. Existing wall penetration holes shall be modified for new piping to be installed and properly sealed to prevent the ingress of water.
- (v) Replace the existing Comminutor Chamber gate valve with new stem valve to the accessed from the Lower Level room.
- (vi) All lift pumps, check valves and flow meters shall be designed such that they are between two (2) isolation valves so they can be taken offline for maintenance purposes without taking force main offline.
- (vii) Shall include design for force main by-pass pumping connections, complete with bypass vault manhole assembly.
- (viii) Development of temporary by-pass pumping specifications.
- (ix) Relocation of water supply meter and backflow prevention device to the Main Floor elevation. Provide a new water pressure instrument for monitoring of low pressure and tie into PLC Control Panel.
- (x) Replace the pump room sump pump and provide new discharge piping to the Wet Well. Sump pump shall be sized to be 120 VAC, 1 HP. Provide isolation valves and check valve(s) on new discharge piping.
- (xi) Provide new seal water systems, separate for each lift pump. Seal water shall automatically operate by a solenoid valve when lift pump is running and utilize a flow meter connected into the PLC Control Panel. Provide a manual bypass line for each

- seal water system. Provide manually operated valves in order to utilize bypass line and to take solenoid line out of service for maintenance activities.
- (xii) All Lift Station areas/rooms (excluding Wet Well) process pipe work that penetrates exterior walls (force main, discharge line, etc.) shall be properly sealed to prevent the ingress of water. Any abandoned services shall be removed and holes properly sealed.
- (e) Mechanical Engineering – HVAC System & Backup Power
- (i) Ensure that all mechanical HVAC complies with the Manitoba Building Code (latest edition), NFPA 820 Fire Protection in Wastewater Treatment and Collection Facilities (latest edition).
  - (ii) Should a standby generator be installed, provide design to for permanent standby generator to meet CSA B149.1 (Natural Gas and Propane) code latest edition and tie into HVAC system for high methane gas levels. Provide design for a new natural gas service line.
  - (iii) Provide design for new Lift Station HVAC system that should incorporate six (6) continuous Air Changes per Hour (ACH) of seasonally heated ventilation. The Backup Power Room along with Lift Station Main Floor, Lower Level, Motor Room, Pump Room (Dry Well) and Comminutor Chamber areas are all required to be ventilated. All HVAC fans shall be rated 575V, 3-phase, 60 Hz. Preference is to utilize fans that are direct driven rather than belt driven. If HVAC fans utilize a belt system, a current sensor will be required with signal sent to the PLC for monitoring for broken fan belts.
  - (iv) Provide design to install new outdoor air conditioning units for cooling Lift Station superstructure (Main Floor and Backup Power Room). The preference is to have one (1) air conditioning unit cool both areas.
  - (v) The HVAC systems shall utilize modulated 0-10V dampers to incorporate 50% recirculated air when unoccupied and no high gas alarm. The HVAC systems shall provide 100% fresh air when occupied or when a high gas alarm is detected. HVAC control shall be accomplished by standalone HVAC controllers with monitoring status being sent to PLC panel. Electric heat shall be used over natural gas heat.
  - (vi) Design the means to determine Station occupancy by utilizing the facility light switches and integrating into the HVAC controllers.
  - (vii) Design the new Lift Station HVAC system to adequately fit in the layout of the existing substructure. Provide heated supplied air to all levels of the Lift Station (Main Floor, Lower Level, Comminutor Chamber, Motor Room, Pump Room, etc.). Install ducting and relief dampers as required.
  - (viii) Design the new Backup Power Room HVAC system to adequately fit in the proposed layout of the new superstructure. Provide heated supplied air to the Backup Power Room. Install ducting and relief dampers as required.
  - (ix) For the Lift Station (including Backup Power Room) HVAC systems shall be modulated dampers with electric actuators shall be used for all HVAC outdoor air, return and exhaust ducts. All damper status signals shall be designed to be sent to the PLC control panel for monitoring.
    - Preference is to have one (1) combined HVAC system and one (1) air conditioning unit to ventilate all Lift Station Rooms (including Backup Power Room)
    - Cooling of standby generator or 3-phase UPS system will require a second HVAC system.
  - (x) All Lift Station (Main Floor and Backup Power Room) mechanical services penetrating exterior walls/ceilings (HVAC ductwork, dampers, water piping, natural gas piping, etc.) shall be properly sealed to prevent the ingress of water. Any abandoned services shall be removed and holes properly sealed.
- (f) Electrical Engineering
- (i) Refer to City of Winnipeg Electrical Design Guide for requirements associated with City of Winnipeg Wastewater Lift Stations.

- (ii) Ensure that all electrical design complies with the Manitoba Building Code (latest edition) along with Manitoba Electrical Code (latest edition).
- (iii) Prepare a spring demand load list with theoretical three (3) lift pumps running along with new HVAC and miscellaneous electrical loads. The demand load list will be used to upgrade the existing hydro service.
- (iv) Review and provide analysis on historical pump start frequency data (supplied by the Water and Waste Department) to confirm the expected number of pump starts within various dry and wet weather flow conditions to determine if station operation meets expected requirements.
- (v) Provide design of a new Customer Service Termination Equipment (CSTE) to include Manitoba Hydro metering transformers, remote enclosure along with service entrance section to include a main breaker.
- (vi) Provide design for a new automatic transfer switch (ATS) and tie into new PLC Control Panel for monitoring of on Utility Power, on Backup Power and Alarm. An ATS is required for either a standby generator or 3-phase UPS system.
- (vii) Provide design for backup power (standby generator or 3-phase UPS system) at the Station. The Consultant will be required to pre-qualify a minimum of three (3) backup power suppliers and models to be listed on the Construction Tender specifications.
- (viii) Should a standby generator be installed, provide design for the following:
  - Generator breaker to include new LSI type breaker with auxiliary status contact tied into new PLC Control Panel for monitoring. A second breaker shall be designed to feed a permanent load bank.
  - Include a new outdoor permanent stepped 600 VAC load bank for maintenance testing of the generator. The load bank shall be capable of testing the generator at 25%, 50%, 75% and 100% loading.
- (ix) Provide design for a new normal power 3-phase, 600 volt, 60 Hz, 4-wire Motor Control Centre (MCC located within the Generator Building. The MCC shall be a Schneider Electric Model 6 MCC and include the following:
  - Main breaker complete with adjustable Long, Short and Instantaneous (LSI) settings. Main breaker shall be in a service entrance compartment,
  - Digital power meter connected to PLC Control Panel for SCADA monitoring with metering transformers located outside of service entrance compartment,
  - Provide for the installation of a Transient Voltage Surge Suppressor (TVSS) with signal tied into the new PLC Control Panel.
  - Provide a breaker complete with adjustable Long, Short and Instantaneous (LSI) settings to feed automatic transfer switch normal power supply.
- (x) Provide design for a new emergency power 3-phase, 600 volt, 60 Hz, 4-wire Motor Control Centre (MCC located within the Generator Building. The MCC shall include the following:
  - Provide for the installation of a power fail relay and tie into the new PLC Control Panel with automatic reset.
  - Provide separate breakers complete with adjustable Long and Instantaneous (LI) settings for each pump VFD enclosure.
  - Provide starters for the 3-phase Backup Power Room HVAC ventilation fans,
  - Provide starters for the 3-phase Lift Station HVAC ventilation fans,
  - Provide separate breakers for each 3-phase heating loads,
  - All HVAC starters shall include a selector switch for manual, off and auto modes along with the following signals sent to the PLC Control Panel for monitoring, Run status, Fault status and
  - All starters shall incorporate pilot devices including, 3-position selector switch (hand, off, auto modes) and lights (Run, Fault). The starters shall include a current proving switch to detect when motor is running below rated full load



- current. The following signals are required to be sent to the PLC Control Panel for monitoring: Run status, Fault (Overload) status and Undercurrent status.
- Provide a breaker for a 120/240V transformer,
  - provide spare space for future expansion.
- (xi) Provide design for new Schneider Electric Variable Frequency Drives (VFDs) standalone enclosures (separate from MCC) for powering the lift pumps.
- Pump VFDs shall include line and load side filters along with terminals for all field (power & control) cabling to terminate at. The following signals are required to be sent to the PLC Control Panel for monitoring: Ready status, Forward Run status, Reverse Run status, VFD failure, Auto Mode, Manual Mode, bearing vibrations, motor speed and motor current. The following signals will be received from the PLC Control Panel for control: Speed Set, Run Forward Command and Run Reverse Command. Ready status shall be activated when there is control power available, no emergency stops are pushed, no pump vibration lockout and pump is either in Manual or Auto Mode of operation.
  - All pump VFD signals between VFD enclosure and PLC Control Panel shall be hardwired.
  - VFDs shall incorporate pilot devices including emergency stop, start/stop pushbuttons, 3-position selector switch (manual, off, auto modes), indicator lights (Ready, Pump Forward Run, Pump Reverse Run, VFD/Pump Trouble), speed potentiometer, runtime counter, and enclosure fans. Speed potentiometer will be used for manual speed adjustment in Auto Mode (via Local Mode of operation) or Manual Mode.
  - All pump/motor instruments including vibration and temperature shall be brought to an HMI relay to be installed on the VFD enclosure door. At this time it is planned that the HMI controller will Schneider Electric XBTGC HMI Controller complete with 5.7" touchscreen and analog I/O expansion card.
- (xii) Replace existing Station 120/240V transformer and panelboard.
- (xiii) Provide replacement of the entire Lift Station 120/240V loads and wiring, including all lighting, receptacles and conduits. All areas/rooms all require new lighting and receptacles. All lighting shall be installed in easily accessible locations so lights can be replaced when needed.
- (xiv) Provide design for new battery-based emergency lighting to be provided in all areas. All Station emergency light(s) shall tie into one (1) central battery bank. Emergency lighting shall be designed to turn on when there is a power failure at the station and/or individual lighting circuits lose power.
- (xv) Provide design for Station exterior lighting, 120 VAC rated light with each lighting having the ability to be dimmed using 0-10V.
- (xvi) Provide design for new Station exterior lighting and emergency lighting to be within a single control panel located on the Main Floor. All exterior lighting to be controlled by a 0-10V dimming controller along with manual controls for adjustment of light output.
- (xvii) Identify the electrical classification of all areas of the wastewater pumping station, considering the proposed ventilation design and currently accepted standards for wastewater facilities.
- (xviii) All electrical code requirements to be satisfied. All electrical equipment and wiring shall be designed for the hazardous areas to be installed within.
- (xix) Provide recommendations regarding the proposed facility wiring type (Teck cable, Aluminum conduit or PVC conduit).
- (xx) Replace the existing grounding and identify upgrades as required to meet code requirements and good practice.
- (g) Automation and Instrumentation Engineering

- (i) Review the existing automation system including pump controls and make design recommendations consistent with recent City of Winnipeg Wastewater Pumping Station upgrades.
- (ii) Existing Remote Terminal Unit (RTU) Panel will need to remain in operation during construction so the CSO instruments can be monitored. Once CSO instruments have been migrated to the new PLC Control Panel, RTU Panel can be removed.
- (iii) Provide design for a new PLC Control Panel. Provide recommendations for required upgrades to sufficiently run the Station functions. Redundant communication shall be designed to Operation's SCADA system utilizing DNP3 communication protocol. Provide design for a new PLC Control Panel to include the following:
  - Two-door, floor mount NEMA 12 enclosure complete with inner panel and foldable laptop table.
  - Schneider Electric M580 PLC as standardized by the City complete with power supply, processor, NOR communication cards, discrete I/O cards and analog I/O cards. A new HMI screen shall be provided on the Control Panel door.
  - Precision Digital process meter complete with programmable output relays and 4-20 mA output signals for connection of differential pressure transmitter level reading. The process meter is required for Local Mode operation of the differential pressure transmitter. Should an ultrasonic level transmitter not work for this application, two (2) Precision Digital process meters will be required. Utilize a contact switch on each level controller and tie into the PLC for high wet well level alarm.
  - New PLC Control Panel shall include two (2) 120 VAC to 24 VDC power supplies with fail monitoring on each tied into the PLC.
  - Wireless (cellular) communication modem. For redundant communication, The City has used wired (PSTN) communication modems in the past that is currently being phased out by suppliers. The City is considering using Ethernet data radios as a redundant communication to the cellular modem.
  - Include a 24 VDC Uninterruptible Power Supply (UPS) complete with a detachable battery pack sized for a minimum of 12AH. UPS shall include monitoring points: UPS fail alarm, UPS on battery and UPS charging.
  - Pilot devices including 2-position selector switch for alarm test mode (normal and test mode), 2-position selector switch for Local Mode control (Level Transmitter A and Level Transmitter B), push buttons (PLC Rest, PLC Mode, Local Mode) along with Schneider Electric PLC HMI screen.
  - Terminal blocks for 120 VAC and 24 VDC power distribution along with pump control circuits. Terminal blocks shall also be designed for connecting all I/O field wiring along with connecting pre-manufactured cabling to each PLC I/O card. All wiring shall be contained within wiring ducts.
  - Control relays with LED indicating lights as needed.
  - 120 VAC power fail monitoring for each circuit brought to the PLC Control Panel.
  - 120 VAC Surge arrestor modules.
- (iv) Provide design for installation of three (3) flow transmitters (1 for each pump). Siemens SITRANS F M MAG 6000 series flow transmitters complete with 5100W series flow sensor as standardized by the City are to be used to totalize individual pump discharge along with Station total discharge. Power supply shall be 24 VDC.
- (v) Make recommendations regarding all the I/O to be utilized.
- (vi) Station to have the ability to run pumping automatically in PLC Mode (via the PLC) along with Local Mode (via local level controllers and completely independent of the PLC). Selection of operation modes shall be through push buttons on the PLC Control Panel. PLC Mode shall automatically fail over to Local Mode. The Station shall only be capable of being put into PLC Mode via the push button (i.e. can not be done through SCADA).

- (vii) Design new redundant level site glass controller systems for pump run operations utilizing a Siemens SITRANS P DS III Differential Pressure Transmitters as standardized by the City complete with output relays and 4- 20 mA output signal. Level site glass controller system shall include:
- Differential Pressure Transmitters shall be on separate level gauges, with each level gauge including: an isolation valve, a calibration port and level gauge sight glass with drain. Transmitters shall not be averaged at the transmitter side.
  - Each level gauge shall include a removable top to allow a water hose to be used for cleaning purposes. Include markings to indicate each pump duty start and stop level setpoints along with high wet well and high high wet well levels.
  - Differential Pressure Transmitter shall be 100mm flange mounted transmitters.
  - Any sensors in the lower level will require a visual reference for maintenance purposes.
  - Identify and include in the design the required programmable pump controls to allow for level transmitter redundancy.
  - Level reading (4-20 mA signal) shall be sent to the PLC Control Panel for monitoring.
- (viii) Reuse existing CSO Panel and CSO instruments. Provide tie-in connections to transfer CSO Panel signals to new PLC Control Panel for remote monitoring. Design CSO Panel to be relocated to the Main Floor.
- (ix) Design HVAC system to have its own controller system separate from PLC controls. All dampers and equipment status signals shall be hardwired to the PLC for monitoring. Modulated dampers will be required to be 4–20 mA or 0–10 V output to the PLC. Preference for On/Off dampers is to have two (2) digital inputs (fully open and fully closed) if available to be monitored at the PLC.
- (x) All HVAC controls shall be separated from PLC Controls by utilizing an HVAC Control Panel and Temperature Controllers to control HVAC dampers. The PLC shall only monitor HVAC system but not provide any controls.
- (xi) Should a standby generator be used for backup power, provide design for a new MSA X5000 methane gas detector as standardized by the City, will be required to be installed within the Backup Power Room. The gas detector shall include an external horn/strobe along with tie ins to HVAC controller and generator control panel. Upon a high-level methane gas detected, the generator shall be required to be shut down and/or prevented from starting, the external horn/strobe shall operate along with 100% fresh air supplied to the Backup Power Room. Gas analog readings and detector fail discrete signals to be brought to the PLC Control Panel for monitoring.
- (xii) Provide design to tie-in ATS and backup power to the PLC Control Panel for monitoring. Signals should include: ATS normal supply, ATS backup power supply, ATS fail, backup power fault, backup power breaker status and backup power running. Provide design for shunt trip of load breaker if a generator is to be used.
- (xiii) Provide design for a new MSA X5000 Hydrogen Sulfide (H<sub>2</sub>S) gas detector as standardized by the City will be required to be installed within the Lift Station and tied into the Lift Station HVAC controller. Upon a high-level of H<sub>2</sub>S gas detected, the Lift Station shall be provided with 100% fresh air supplied. Gas analog readings and detector fail discrete signals to be brought to the PLC Control Panel for monitoring.
- (xiv) Provide control narrative for to describe how all equipment within the station is controlled in manual and automatic modes of operation. The Control Narrative will be used as a guideline for the Consultant to provide programming of the PLC and set up communication. The Consultant will be responsible for this and will need to submit to the Water and Waste Department during the design review process. The final control narrative shall be provided in a report format and sealed by an Engineer.

- (xv) Provide pumping strategy control narrative that considers reducing clogging and ragging of the pumps. Control narrative shall include operation by HMI touchscreen and remote by SCADA to run the pumps in the reverse direction at low speeds.
- (xvi) Provide recommendations for the type and location of a new room temperature transmitters. The transmitters shall be Siemens SITRANS TF320 series type as standardized by the City and tied into the PLC Control Panel. Provide temperature transmitters for the following areas: Main Floor, Backup Power Room, Motor Room and Pump Room (Dry Well). Provide recommended low and high temperature setpoints.
- (xvii) Provide details regarding the type and configuration of the ventilation controls. At this time, it is anticipated that the ventilation controls will be integrated with the MCC controls.
- (xviii) Identify and propose other instrumentation as required. Coordinate with the Water and Waste Department regarding PLC and associated control instrumentation.
- (xix) Provide a new Wet Well high level float switch instrument and tied into the PLC Control Panel. The level instrument will be required to tie into a separate intrinsically safe junction box (on the Lift Station main floor). Provide two (2) separate wet well high level statuses from the PLC Control Panel process meters where the differential pressure switches tie into.
- (xx) Provide new level float switch in the Lift Station Pump Room (Dry Well) along with Comminutor Chamber to monitor for station flooding. Provide level switch connections for status of each to the PLC.

## **D9. CONSTRUCTION DOCUMENTS**

- D9.1 All drawings are to be drawn in accordance with The City of Winnipeg Manual for Production of Construction Drawings and Water and Waste Departmental requirements. All drawings will be ISO A1 size with loop diagrams being 11" x 17". The City will provide the correct CAD title blocks to be used after the project is awarded.
- D9.2 Construction Drawings are to be prepared by the Consultant and will be included in the Tender Documents. Provide digital PDF's of the Construction Drawings to be posted on the City of Winnipeg web site for the bidding period.
- D9.3 All drawings are required to be produced using AutoCAD standard software. Using any other software platform and converting to AutoCAD will not be acceptable. All AutoCAD drafting shall follow City of Winnipeg drafting standards.
- D9.4 All drawings that include plans, elevations and section details are required to be metric scaled with all unique scalebars shown on the drawings.
- D9.5 The Consultant will be required to create all Station layouts such as XREF AutoCAD drawings to be used. It is acceptable for all discipline drawings to attach XREFs. Sealed construction drawings will be required to bind XREFs into the drawings.
- D9.6 City drawing numbers shall be used for drawing index along with any drawing references. Under no circumstance shall Consultant internal drawing numbers be used for referencing drawings, including on drawing index.
- D9.7 Drawings shall include applicable detail information required for City of Winnipeg Development Permits, applicable Building Permits (including electrical, mechanical, structural, new building construction, etc.) and Waterway Permits.
  - (a) City of Winnipeg Development and Building Permit applications link:  
<https://legacy.winnipeg.ca/ppd/permits/Commercial/Resources.stm#tradePermits>
  - (b) City of Winnipeg Waterway Permit application link:  
<https://legacy.winnipeg.ca/ppd/CityPlanning/Riverbank/WaterwayPermitApplications.stm#1>

- D9.8 All demolition drawings to be created shall be revision 00. New construction work shall be revision 01 of the same drawing number. All drawing revisions are required to be sealed by a Professional Engineer and included as part of the Construction Tender Package.
- D9.9 The following Hazardous Materials Documents will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
- (a) Hazardous Materials Report;
- D9.10 The following General Construction Documents will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
- (a) Cover sheet showing station location.
  - (b) Drawing index including drawing numbers and titles. Drawings shall be separated out for each discipline.
  - (c) Shop Drawing Submittal List including all Contractor submittals required along with Specification section, Drawing number references where submittal can be found and High Priority submittals (for long lead equipment).
- D9.11 The following Architectural Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
- (a) Lift Station and Backup Power Room plans and details.
- D9.12 The following sealed Civil Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
- (a) Temporary bypass pumping plan and section details, including showing gate chamber, manhole(s), pumps, valves and force main connection details. Provide table to indicate flow rates and Total Dynamic Head for duty and standby temporary pumps to be provided. Provide a detail to show temporary level switches / transmitters along with start and stop elevations to be used for bypass pumping.
  - (b) Civil site services including all buried services, property lines, roads & sidewalks, Manitoba Hydro substation and cemetery locations along with Lift Station and Backup Power room locations. All utility (Manitoba Hydro, BellMTS, etc.) scope of work along with Contractor scope of work shall be clearly identified.
  - (c) Landscape and lot grading plan.
- D9.13 The following sealed Structural Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
- (a) Structural demolition plans and details.
  - (b) Structural plans and elevations.
  - (c) Structural floor reinforcement details.
  - (d) MCC, VFD and backup power (standby generator or 3-phase UPS system) housekeeping pads
  - (e) Structural pump and piping support details.
- D9.14 The following sealed Mechanical Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
- (a) Mechanical demolition plan and new construction plans. New construction plans shall include elevations including mechanical ventilation design details.
  - (b) Seal water piping details.
  - (c) Mechanical HVAC and plumbing demolition and new construction.
  - (d) Mechanical HVAC and plumbing sections, details and bill of materials.
  - (e) Mechanical process piping demolition and new construction.
  - (f) Mechanical process piping sections, details and bill of materials.

- (g) Mechanical schedules (dampers, louvers, heaters, fans, fire extinguishers, etc.) including power requirements for equipment.

D9.15 The Electrical drawings content shall follow City of Winnipeg Electrical Design Guide sections 19.2 and 19.5. The following sealed Electrical Construction Drawings and Documents will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

- (a) Single line shall include breaker settings table for all breakers with field adjustable settings along with each branch labelled for MCC bucket location.
- (b) Electrical demolition and new construction plans. New construction plans shall include each room plan layout along with sections view(s) showing all floor levels to show all electrical instruments, lighting, receptacles, motors and HVAC loads. All 120 VAC powered equipment, lighting and receptacles shall show circuit numbers.
- (c) Hazardous location plan for all rooms including section view showing all floor levels for the Lift Station.
- (d) Grounding riser and installation details.
- (e) Motor Control Centre(s) elevation and all VFD enclosure details including showing where all pilot devices (HMI Controllers, lights, push buttons, emergency stops, analog meters, etc.) are located along with all bucket and pilot device equipment lamacoids.
- (f) Lift Station panel and luminaire schedules along with schematic diagrams to clearly show all emergency lighting control. Emergency lighting shall tie into a new control panel within the Lift Station.
- (g) Separate motor schematics for each motor/pump. All motor schematic branches shall be clearly labelled to indicate what the branch control does. All signals tying into the PLC shall be clearly shown. For pump schematics, provide speed potentiometer for manual adjust of VFD.
- (h) Separate motor connection diagrams clearly showing all control field wires for electrical instruments and PLC control panel. For HVAC equipment, it is acceptable to include cable connection details on the motor schematics.
- (i) Backup Power connection diagram showing all field (power and control) cabling. Clearly indicate terminal numbers where all field cabling terminates at.
- (j) Automatic transfer switch connection diagram showing all field (power and control) cabling. Clearly indicate terminal numbers where all field cabling terminates at.
- (k) Separate Setting Letters for each motor fed by a Variable Frequency Drive and/or Soft Starter.
- (l) Setting Letter for Automatic Transfer Switch.

D9.16 The Automation documents content shall follow City of Winnipeg Automation Design Guide sections 22.2, 22.3 and 22.4. The following sealed Automation Construction Drawings and Documents will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

- (a) Automation plan drawing showing all automation instruments. Include a section view to show all station floor levels indicating elevations at each level.
- (b) PLC control panel arrangement and bill of materials. Include an extra sheet to show all control panel terminal blocks arrangement along with PLC rack layouts and PLC pre-manufactured cables.
- (c) PLC power distribution schematic with 120 VAC and 24 VDC distribution clearly separated along with redundant power supplies.
- (d) PLC networking block diagram clearly showing how wireless and wired connections are made to the PLC.

- (e) Separate PLC card schematic drawings for each PLC card is required including showing terminal connection points. All signals shall terminate on terminal blocks with pre-manufactured cabling connecting to the PLC cards.
- (f) Pump control schematic clearly showing PLC and Local modes of operation. The automatic pump control operation shall automatically switch to Local Mode when the PLC fails. Local Mode pump control is done directly by relays on the level controller within the PLC Control Panel, PLC mode pump control is done through the PLC discrete output card.
- (g) Lift Station HVAC control panel arrangement and bill of materials.
- (h) Lift Station HVAC control panel power distribution schematic.
- (i) Intrinsically safe junction box arrangement and bill of materials.
- (j) Separate Loop diagrams for each instrument. For instruments that utilize common controls/monitoring (such as dampers, bearing monitoring, temperature transmitters, level switches, etc.), it is acceptable to include on the same loop diagram. Include content for any instrument alarming details. All instrument signals shall be clearly indicated on loop diagrams for tie in to the PLC for monitoring. For instruments that appear on multiple loop diagrams such as HVAC Temperature Controllers, notes shall be provided to describe operation and reference to applicable loop diagrams. All Loop diagrams shall include all cabling to be labelled along with cable size information. Duct heater SCR controls, automatic transfer switch, generator control panel, 600 VAC power fail monitoring and 600 VAC TVSS will also require separate loop diagrams.
- (k) CSO instrument loop diagrams for tie-in of CSO instruments to CSO Panel and PLC for monitoring.
- (l) Control Narrative in report format for programming of the PLC. The Control Narrative shall include all manual and automatic operation of all equipment in the station, instrument physical tags to PLC tag mapping, all content on HMI Graphic Display Windows, internal PLC variables, all PLC alarm & control logic.
- (m) Instrument List including instrument tag, instrument description, location to be installed, reference to specification section and P&ID drawing number. Clearly identify existing and new instruments along with what instruments are Standardized.
- (n) DNP3 Input/output Mapping list including internal PLC generated signals including terminal numbers, I/O module location, I/O point location, DNP3 addresses, instrument tag and description. All signals are required to be mapped, '0' and '1' states for discrete signals along with analog signal ranges (4 mA, 20 mA, 0V, 10V, etc.). All internal software signals are required to be indicated and mapped as well.
- (o) Separate Setting Letters for each HVAC Controller.

D9.17 The Process documents content shall follow City of Winnipeg Identification Standard discipline designations and symbols. The following sealed Process Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

- (a) Lift Station and Backup Power Room Mechanical HVAC Flow P&ID showing all room areas where equipment is located including all equipment settings and airflow requirements for each room. All HVAC fan signals (between PLC and run operation of the fans as shown on motor schematics) shall be clearly shown on the P&ID.
- (b) Lift Pumping P&ID(s) including pump duty control setpoints, all equipment settings and key elevations (High High Wet Well Level, High Wet Well Level, all pump start setpoints, all pump stop setpoints, wet well bottom, etc.). All pump signals (between PLC and run operation of the pumps as shown on pump motor schematics) shall be clearly shown on the P&IDs. All instruments along with PLC signals shall be clearly labelled for their function (i.e. High High Wet Well Level, Motor Bearing High Vibration, etc.).

D9.18 NMS Specification Sections shall be provided for each discipline as required. All equipment labelling and instrument tag names shown on the construction drawings shall be included for applicable specification section writeups. NMS Specification sections at minimum shall include:

- (a) General Requirements (Division 01);
- (b) Concrete (Division 03);
- (c) Fire Suppression (Division 21);
- (d) Plumbing (Division 22);
- (e) HVAC (Division 23);
- (f) Electrical (Division 26);
- (g) Communications (Division 27);
- (h) Automation (Division 40);

D9.19 The Consultant will be required to prepare a standard City of Winnipeg Construction Tender. The following shall be included as part of the tender:

- (a) Form A (Bid/Proposal).
- (b) Form B (Fees), with line items separated out for each discipline and City standardized equipment.
- (c) Tender Part E (Specifications) section writeups to include sections below. Tender Part E sections (other than Applicable Drawings and Specifications) shall be linked to individual Form B cost line items and shall not include NMS specification sections.
  - (i) Applicable Drawings and Specifications;
    - List all Drawing Numbers and Titles.
    - List all Specification Section and Titles.
  - (ii) Mobilization / Demobilization;
  - (iii) Accessibility Plan;
  - (iv) Dangerous Work Conditions (Hazardous Confined Space Entry);
  - (v) Hazardous Materials Work & Disposal;
  - (vi) Site Development & Restoration;
  - (vii) Excavation & Shoring;
  - (viii) Demolition Work;
  - (ix) Sandblasting and Painting Work;
  - (x) Supply and Installation of Manholes (separate for each manhole);
  - (xi) Temporary Wastewater Bypass Pumping;
  - (xii) Bypass Vault Manhole and Valve Assembly;
  - (xiii) Wet Well Draining, Cleaning and Inspection;
  - (xiv) Construction of New Structures;
  - (xv) Cast-in-Place Concrete;
  - (xvi) Lift Pumping Equipment (Pumps, Motors, Drive Shafts, Guards, Accessories and Spare Parts);
  - (xvii) Process Work and Valves (Gate Valves, Check Valves, Plug Valves, etc.);
  - (xviii) Backup Power (Generator / 3-Phase UPS System);
  - (xix) City Standardized Equipment (separate sections for each standard supplier);
  - (xx) Commissioning;
  - (xxi) Training;
  - (xxii) Operation & Maintenance (O&M) Manuals; and
  - (xxiii) Extra Work Allowance.
- (d) All Addendums as required.



## **D10. PROCUREMENT PROCESS**

- D10.1 After Approval by the Consulting Contract Administrator, submit the Construction Tender Package to City of Winnipeg Purchasing Division for public bidding.
- (a) Construction Tender Package shall be prepared and posted in accordance with the City of Winnipeg Purchasing Division requirements.
    - (i) the City bid submission forms, Bid Procedures, General Conditions, Supplemental Conditions which are available at <https://legacy.winnipeg.ca/matmgt/templates/>;
  - (b) Coordinate review of the package with Purchasing and make changes as requested to the Tender package.
- D10.2 Provide appropriate response to Bidders and advice to the City during Tender call and issue addenda to the Contract documents as necessary.
- D10.3 Prepare site visit meeting agenda to discuss high level scope of work and schedule.
- D10.4 Arrange and attend two (2) mandatory Bidders site visits for the Construction Tender Package. At the start of the site visits, coordinate a discussion meeting with all Bidders.
- D10.5 Prepare a list of all questions from all Bidders asked at the site visit and issue Addenda to answer all questions.
- D10.6 Review bid submissions for completeness and prepare bid tabulations for multiple Tenders.
- D10.7 Perform a complete review of the low Bidder's qualification to determine if they are capable of performing the Work under the terms of the Contract.
- D10.8 Review and approve of Contractor qualification submittals and ensure submittals are in conformance to the contract qualifications, without relieving the Contractor of their contractual and legal obligations including:
- (a) Good standing under The Corporations Act (Manitoba)
  - (b) subContractors (Form J);
  - (c) Workplace Safety and Health Act (Manitoba) Program;
  - (d) Social Procurement Plan.
- D10.9 Coordinate and lead a pre-award meeting with lowest qualified Bidder. Prepare and distribute meeting minutes after meeting has completed. Pre-Award meeting shall involve:
- (a) To ascertain that the Contractor understands the scope of work in the Tender.
  - (b) To determine that the Contractor is capable of meeting the obligations detailed in the Tender.
  - (c) To secure advisement by the Contractor of intended methods, materials, stages, timelines or sequences of the Contract that are of interest to the Water and Waste Department.
- D10.10 Complete a review, analysis, comparison, tabulation, calculation, and evaluation of the Bids received. Make recommendations for award of Tender.
- (a) If the bids deviate more than 15% from the Class 1 Cost Estimate, provide justification for the difference in pricing in the award recommendation letter. Submit a Letter of Recommendation, copies of the bids, a Tender comparison sheet, and a Tender tabulation.
- D10.11 Following Tender close, submit one (1) electronic copy of the Final Construction Tender Package including all addenda.

## **D11. PLC & HMI CONTROLLER PROGRAMMING**

- D11.1 The Consultant shall plan for three (3) meetings total, one (1) hour in length per meeting to for PLC Programming work. The consultant shall ensure that the project manager, PLC

Programming Lead and PLC Programming designer attend the discussion meetings. Meetings will be used to update progress to date, anticipated submittals, any ongoing project issues along with ask questions to City staff. The Consultant will be required to prepare and distribute meeting minutes for all meetings.

- (a) One meeting will be to discuss PLC Programming requirements, one (1) to review draft submission and a 3<sup>rd</sup> meeting to discuss final City comments.

D11.2 The following PLC Programming Documents will be required to be produced by the Consultant and reviewed by the City after the project has gone to Tender:

- (a) Schneider Electric M580 PLC Programming in report format. The PLC Programming report shall include a table of contents, setup of each I/O card, a section for mapping of signal and internal variables, the general PLC program structure, control details of all alarm and control logic along with screenshots of the HMI windows.
- (b) Schneider Electric HMI Controller Programming in report format. The PLC Programming report shall include a table of contents, setup of all I/O signals, a section for mapping of signal and internal variables, the general PLC program structure, control details of all alarm and control logic along with screenshots of the HMI windows.

D11.3 The program shall use function block programming. The use of any programming (such as structured text) shall be reviewed and approved by the City prior to starting. All branches shall be clearly labelled/documentated to indicate what the branch does.

D11.4 Software tag names shall follow City Tag Naming Standard. Utilize standard tag names in the Control Narrative, DNP3 I/O list and Construction Documents.

D11.5 The Consultant will be required to Design and Implement complete programming of the new Schneider Electric M580 PLC that will be used. The City has found issues in the past with NOR2200H cards when using Schneider Electric Unity Pro software. To avoid past issues, the Consultant will be required to be utilize Schneider Electric Control Expert 15.3 for programming of the PLC. The following will be required as part of the PLC Programming:

- (a) Provision for a local Human Machine Interface (HMI) touchscreen. The HMI touchscreen shall include the following individual windows, Operations (showing Wet Well level and lift pump status), HVAC Status (including all fans and damper statuses), Pump Details, Pump Trends along with Alarms Table. All symbols to be shown on HMI screen shall follow standard City HMI Layout and Animation Plan Guide. Note that colours for equipment status (run, off, fault, alarm, etc.) used in the City of Winnipeg Wastewater Collection System differ than shown in the HMI Layout and Animation Plan Guide.
- (b) HMI touchscreen shall include push buttons for pump duty selection, pumps reverse run. All pump start and stop setpoints shall be shown and be password protected for setpoints to be changed. HMI Pump Details shall animate Wet Well to show the level and include Low Wet Well, High Wet Well and High High Wet Well setpoints.
- (c) Provision to include all PLC programming and communication, set up DNP3 mapping including internal PLC variables and establish communication with SCADA.
- (d) Provide SCADA Operations Centre the ability to see all incoming signals to the PLC along with output signals.
- (e) Provide SCADA Operations Centre the ability to remotely select pump run and cycling options.
- (f) Provide cleaning cycle function or auto de-ragging options of the pumps programmed into the PLC logic so that the pumps can run in reverse mode and be capable to run remote from the SCADA Operations Centre.
- (g) PLC NOR card for wired communication shall only be setup for SCADA Operations Centre to see I/O monitoring. PLC NOR card for wireless communication shall be setup for I/O along with control functions.
- (h) PLC shall be programmed to receive I/O monitoring signals from each lift pump HMI Controller.

- (i) All code branches shall be documented to describe the function of each branch/section of PLC code.
- D11.6 The Consultant will be required to Design and Implement complete programming for new Schneider Electric HMISCU6B5 Controllers that will be used with each lift pump VFD. The Consultant will be required to utilize Schneider Electric Vijeo Designer for programming of the HMI Controller. Programs for each lift pump VFD will be similar but require tag names to match associated VFD & P&ID drawings tag names. The following will be required as part of the HMI Controller programming:
- (a) Provision for an HMI touchscreen to include the following individual windows, Main (showing all discrete and analog I/O statuses), I/O Status (showing states of discrete and analog I/O statuses), Pump Alarm Settings (setpoints and time delays), Pump Lockout Settings (setpoints and time delays) along with Alarms Table.
  - (b) Provide mapping of all I/O signals along with setpoints and time delays. I/O setpoints and time delays shall be capable of being changed (password protected) on the HMI screen.
  - (c) Provision to include all HMI Controller programming and communication, set up DNP3 mapping including internal HMI Controller variables and establish communication with SCADA.
  - (d) Provide a pump alarm and pump lockout signals programmed into the HMI Controller to be sent to separate discrete output contacts. Alarm and lockout signals will include:
    - (i) Motor Bearing (Upper) Temperature - Analog;
    - (ii) Motor Bearing (Upper) Vibration - Analog;
    - (iii) Motor Winding Temperature - Discrete;
    - (iv) Pump Bearing (Upper) Temperature - Analog;
    - (v) Pump Bearing (Upper) Vibration - Analog; and
    - (vi) Time Delays;
  - (e) HMI Controller shall be setup to provide I/O monitoring to the M580 PLC for SCADA Operations Centre to view. No control functions will be provided from the M580 PLC to the HMI Controller. The City preference is to have the HMISCU6B5 Controllers connect to the PLC via CAT6 cabling in order to reduce the number of I/O cards needed for the pump signals.
  - (f) All code branches shall be documented to describe the function of each branch/section of PLC code.

## **D12. CONTRACT ADMINISTRATION SERVICES – NON-RESIDENT**

- D12.1 Personnel with demonstrated experience in the design and contract administration of the mechanical, electrical, structural, and civil components of the Works are to be assigned to this project.
- D12.2 Consultation with and provide advice to the Water and Waste Department during the course of construction.
- D12.3 Coordinate and conduct a pre-construction kickoff meeting with all other relevant parties in attendance and provide minutes of meeting to all in attendance and those to be copied.
- D12.4 Conduct monthly progress meetings over Microsoft Teams. Prepare agenda and distribute meeting minutes no later than two (2) business days after monthly meeting has concluded. It is expected that there will be eight (8) monthly progress meetings total with each meeting being one (1) hour in length.
- D12.5 Review and approve of Contractor submittals and ensure submittals are in conformance to the contract Drawings, Documents and Specifications, without relieving the Contractor of their contractual and legal obligations including:
- (a) Construction Tender Forms;

- (b) Workplace Safety and Health Act (Manitoba) Program;
  - (c) Environmental Plan;
  - (d) Safe Work Plan;
  - (e) Detailed Work Construction Schedule;
  - (f) Site Accessibility Plan.
- D12.6 Review and approve of shop drawings and manufacturers' drawings supplied by the Contactor or supplier to ensure to the Water and Waste Department that the shop drawings are in conformance to the contract Drawings and Specifications, without relieving the Contractor of their contractual and legal obligations in respect thereof.
- D12.7 Review and approve of temporary bypass pumping plan supplied by the Contactor or supplier to ensure to the Water and Waste Department that the shop drawings are in conformance to the contract Drawings and Specifications, without relieving the Contractor of their contractual and legal obligations in respect thereof.
- D12.8 Preparation of a Station Arc Flash study to be completed using SKM software. SKM library files, report file and single line drawings to be submitted to the City. The following shall be included as part of the arc flash study:
- (a) The Consultant shall obtain new short circuit levels from Manitoba Hydro in order to produce the arc flash report.
  - (b) Arc flash energies to be kept as low as reasonable attainable.
  - (c) Model the proposed changes to identify approximate arc flash energy levels and ensure that the design provides for Category 2, or lower, arc flash energies within the Station.
  - (d) Provide an arc flash report including title page with revision history, table of contents, equipment nameplate information (used in the model), power system model description (i.e. assumptions and technical detail describing how scenarios were created), equipment incident energy, coordination of protective devices with time current curves (TCCs) showing each downstream breaker up to the incoming hydro protective devices along with equipment short-circuit duty results. TCCs shall include single line and logarithmic graph with each device labelled to match single line equipment tags. Provide Word document of arc flash report as part of this submission.
  - (e) Submit draft arc flash study for City review.
- D12.9 Review and report to the Water and Waste Department upon laboratory, shop and other tests conducted upon materials and /or equipment placed or installed by the Contractor to ensure to the Water and Waste Department conformance to the contract Drawings and Specifications, without relieving the Contractor of their contractual and legal obligations in respect thereof.
- D12.10 Acceptance of alternate materials and methods, subject to prior acceptance by the Water and Waste Department, without relieving the Contractor of their contractual and legal obligations in respect thereof.
- D12.11 The Consultant will be required to attend the Factory Acceptance Testing (FAT) in-person for the new PLC Control Panel testing. The consultant shall allow for four (4) hours total for one (1) representative to attend new PLC Control Panel FAT testing session. It is assumed that FAT testing will be conducted in Winnipeg. For any in-person FAT testing outside of Winnipeg, the Consultant will be eligible to include any travel and/or accommodations to attend the FAT testing sessions.
- D12.12 Submit monthly contract progress estimates to be processed in a timely fashion in accordance with the General Conditions of the City of Winnipeg Standard Construction Specifications.
- D12.13 Provide a detailed monthly "Cost to Complete" report. This report is to include the actual costs to date, plus projected costs to complete the project including allowances for any unforeseen

cost with explanation and justification. The report shall identify any expected budget overruns or surpluses.

- D12.14 Furnish copies to the Water and Waste Department of all significant correspondence relating directly or indirectly to the project by parties external to the Consultant's Contract Administrator (Contract Administrator).
- D12.15 Submit to the Water and Waste Department, prior to construction, a condition assessment report documenting written and photographic records of, and assessments of the physical condition of adjacent buildings, facilities, surface conditions and other infrastructure sufficient to equip the Contract Administrator 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 thereto arising from the project.
- D12.16 Consultant billings are to indicate the fee breakdown for the submitted invoice as well as the total fees to date.
- D12.17 Billings are to be adjusted to indicate the 7% of the actual construction value holdback until as-constructed drawings have been submitted. Invoices submitted without this breakdown will be returned.
- D12.18 Approved allowable disbursements and laboratory testing costs are to be shown as separate sub-totals from the fee charges.
- D12.19 Assist the Contractor in obtaining a Development Permit along with applicable Building Permits (including electrical, mechanical, structural, new building construction, etc.). Each Consultant discipline Lead Engineer will need to complete and seal an individual City of Winnipeg Design Summary Letter.
- D12.20 The project location is located within 107 metres of the normal summer Assiniboine River level. The Consultant will be required to submit an application for a Waterway Permit application including a detailed Geotechnical Engineering Report justifying the risks, complexities and uncertainty associated with the project and the riverbank. The Report shall be sealed by a Professional Geotechnical Engineer.

### **D13. CONTRACT ADMINISTRATION SERVICES – RESIDENT**

- D13.1 Personnel with demonstrated experience in the design and contract administration of the mechanical, process, automation, electrical, structural, and civil components the Works are to be assigned to this project.
- D13.2 Provide Project Management for Contract Administration Services using the City Project Management Manual templates where available. Project management services shall include:
- (a) Preparing meeting agenda and distributing meeting minutes;
  - (b) Responding to Requests for Information;
  - (c) Preparing Proposed Change Notices;
  - (d) Providing Field Instructions;
  - (e) Providing Inspection Reports;
  - (f) Reviewing Contractor invoices and recommending amounts to be paid;
  - (g) Review of Contractor requested scope changes and recommended approvals.
- D13.3 Ensure that Quality Assurance/Quality Control (QA/QC) is undertaken to Building Code requirements and Water and Waste Departmental standards.
- D13.4 Arrange for regular job meetings at the worksite or near the worksite throughout the duration of the contract work. The meetings are to be attended by the Contract Administrator or their designate as well as the on-site Inspector, the Contractor and the Water and Waste

- Department's contact person. At minimum, all Consultant Key Personnel will be required to attend a site visit to the station at least once a month to monitor the Contractor work and ensure construction work follows the contract documents. The Consultant will be required to show pictures of Construction progress during virtual meetings
- (a) Perform weekly construction site inspections from applicable disciplines to verify construction works conforms with contract documents.
  - (b) Any staff requiring to access the lower levels of the Lift Station will be required to have Confined Space Entry Training. The Consulting Contract Administrator will be checking all Consultant staff planning to enter the lower areas on site. Any staff that can not produce proof of training on site will not be allowed to enter the lower levels of the Lift Station.
- D13.5 Prepare a Deficiency Log for any deficiencies found and/or items that are not in compliance with the Construction Documents.
- (a) The Contractor shall be notified immediately for any deficiencies found along with recommendations to correct the deficiencies.
  - (b) Deficiency Logs shall be updated and discussed during biweekly construction meetings.
- D13.6 Arrange for twelve (12) biweekly construction meetings over Microsoft Teams between the Consultant (including all key personnel), City staff and Contractor staff.
- (a) Minutes of all virtual along with site meetings shall be recorded and distributed to all in attendance and the copy list. Meeting minutes shall be distributed no later than two (2) business days after the meeting has finished.
- D13.7 Prepare Operational Shutdown Summary (OSS) plans for Contractor planned shutdowns. The Consultant shall prepare OSS sections 1 (Purpose), 2 (Stakeholders), 3 (Risks and Contingency Planning), 5 (Monitoring) and 6 (Key Data). The Contractor will be required to fill in section 4 (Shutdown Plan) along with attachments for performing the work. Appendix K includes a sample OSS Plan the Consultant would need to prepare.
- D13.8 Review and approve Contractor finalized Operational Shutdown Summary (OSS) plans. The OSS Plans will need to be approved by the City prior to any shutdown occurring. Provide a minimum of one (1) week notice for City to approve OSS plans. The Consultant will be required to be on site for the duration of each shutdown. The project will include the following shutdown OSS plans:
- (a) Temporary Power Switchover – 1 hour shutdown;
  - (b) Tying into to Force Main – 2 hour shutdown;
  - (c) Trial Bypass – 2 hour shutdown; and
  - (d) Permanent Bypass – 2 hour shutdown.
- D13.9 Provide inspection of the Wet Well once fully bypassed and has been cleaned.
- (a) One (1) Consultant representative will be required to enter the Wet Well chamber and follow Confined Space Entry regulations for inspecting the Wet Well.
  - (b) Provide a Technical Memorandum for condition assessment including photographs along with recommendations to repair Wet Well for any issues found.
  - (c) Recommendations shall include high level engineering and construction costs.
  - (d) Any design services in regards to Wet Well concrete rehabilitation will be applied towards the Additional Work Allowance (D16.4).
- D13.10 Without relieving the Contractor of their contractual and legal obligations in respect thereof, conduct detailed inspections of construction work to ensure that the Work carried out by the Contractor is in conformance with the Drawings, Specifications along with applicable codes and safety regulations.
- D13.11 Reports are to be promptly made the Water and Waste Department's contact person regarding unusual or changed site conditions which may or will result in extra work to the project.

- D13.12 All extra work to the project must be reviewed and approved by the Water and Waste Department's contact person prior to approval being given to the Contractor to undertake the Work.
- D13.13 The Contract Administrator will be responsible to project final construction costs throughout the duration of the project to ensure the project remains within the budget allowance.
- D13.14 Keep a continuous and accurate record of working days and days lost due to inclement weather or other unforeseen circumstances during the course of construction.
- D13.15 In conjunction with the Water and Waste Department, provision of advance notice to adjacent residents and businesses who will have public services and/or access disruptions during construction.
- D13.16 Enforcement of contractor conformance with the City of Winnipeg Manual of Temporary Traffic Control in Work Areas on City streets in compliance with expected standards of safety for motorists and pedestrians, without relieving the Contractor of their contractual and legal obligations in respect thereof.
- D13.17 Acting in the interest of the Water and Waste Department, provide responsible, sensitive and prompt reaction to the reasonable requests and complaints of citizens regarding the conduct of the project.
- D13.18 Arranging for and carrying out testing of materials to ensure conformance with the Drawings and Specifications, without relieving the Contractor of their contractual and legal obligations in respect thereof.
- D13.19 Inspection and Technical Services (ITS) Compliance
- (a) Attend a site visit to prove generator operation and code compliance with an Inspection and Technical Services (formerly Office of the Fire Commission) inspector along with Manitoba Hydro and other City staff. The Consultant shall ensure the Project Manager, Lead Electrical Engineer, Lead Automation Engineer and Lead Mechanical Engineer attend the site visit. The Contractor will need to prove to the inspector and Manitoba Hydro that that generator is fit for use.
  - (b) Coordinate with the Contractor to have any corrections to be made from the inspector's deficiency report.
  - (c) Ensure the Contractor completes four (4) hour load bank testing performed. The Consultant will only be required to be at site for one (1) hour while load bank testing is taking place.
  - (d) Attend follow up site visits as required to ensure inspector and Manitoba Hydro sign off on the generator to be fit for use. The Consultant shall ensure the Project Manager along with any discipline Lead Engineers as required to attend the follow up site visits.
- D13.20 Final Inspections and Construction Acceptance
- (a) Prepare a deficiency list for any deficiencies found and ensure items are corrected by the Contractor.
  - (b) As coordinated with the Water and Waste Department's contact person and the Contractor, provide inspection of the completed Works to establish the project milestones of Substantial Performance and Total Performance of the completed project.
  - (c) Coordinate with the Installation Contractor and Equipment Supplier for all required site testing and commissioning services.
- D13.21 Co-ordination and staging of other works by third parties on the site including, but not limited to, Hydro, Gas, Communications and other City forces. The Consultant key personnel will be required to attend site visits whenever applicable discipline inspections will be carried out by the Authority Having Jurisdiction. The Consultant shall after the conclusion of each inspection,

notify the Contract Administrator in writing noting any deficiencies found by third party inspectors along with results of the inspection.

#### **D14. COMMISSIONING**

- D14.1 Coordinate with the Contractor, the Water and Waste Department and other relevant parties any commissioning activities required before any components of the Station can be put into active service.
- D14.2 Review and approve of commissioning plan supplied by the Contactor to ensure to the Water and Waste Department that the commissioning procedures are in conformance to the contract details, without relieving the Contractor of their contractual and legal obligations in respect thereof.
- D14.3 The Consultant will be required to attend commissioning site visits to ensure proper testing is performed. The Consultant shall plan for commissioning activities to be a total 120 hours on site. Commissioning activities shall be performed by include automation, electrical, instrumentation, mechanical and process trained staff.
- D14.4 Prepare and submit a total of four (4) commissioning field reports including date & time, all staff in attendance (Consultant, Contractor, City staff), general scope, work completed, items requiring completion and/or changes and other items. Reports shall cover commissioning activities for each work week commissioning is being done. Submit field reports no later than three (3) business days after each commissioning week has been completed.
- (a) Staff will need to access the lower levels of the Lift Station and will be required to have Confined Space Entry Training. The Consulting Contract Administrator will be checking all Consultant staff planning to enter the lower areas on site. Any staff that can not produce proof of training on site will not be allowed to enter the lower levels of the Lift Station.
- D14.5 All control and instrument signals will be required to be tested back to the PLC including: verifying signal to the physical PLC card location, signal status on the HMI screen along with
- D14.6 Ensure the Contractor fills out the required commissioning forms for each commissioning site visit to be incorporated into the O&M manual. City staff will be required to be on site during commissioning activities to witness commissioning activities. The City standard checklist forms to be used on this project are shown in Appendix I. The following equipment will be required to include separate completed commissioning forms:
- (a) Generator or 3-Phase UPS System.
- (b) All instruments. For common instruments such as temperature transmitters, it will be acceptable to utilize one (1) commissioning form.
- (c) All PLC I/O Cards.
- (d) All HVAC Controllers.
- (e) All Dampers (including Actuators).
- (f) All HVAC Fans.
- (g) All Motor Control Centres (including Motor Starters).
- (h) All Lift Pump VFDs.
- (i) All Lift Pumps (including Motors).
- (j) All Emergency Lighting Systems.
- (k) All Disconnect Switches.
- (l) All 120/240V Panelboards.
- (m) All Single-Phase Transformers.
- (n) Customer Service Termination End.
- (o) Automatic Transfer Switch.



- (p) Load Bank (if a Generator is installed).
  - (q) Main Motor Control Centre Power Meter.
  - (r) All HVAC Heaters.
  - (s) Outdoor Lighting.
  - (t) Air Conditioning Unit.
  - (u) PLC System (including Communications, Local & PLC Mode, Pump Duties).
- D14.7 The Consultant will be required to commission each PLC I/O point and the Control Logic of the new PLC once installed at the station. Points shall be commissioned from the physical signal location (i.e. using VFD selector switch to determine Manual / Auto Mode at the PLC). Each I/O signal state shall be verified on physical PLC card location, on the HMI screen and that SCADA can see the changes in signal states. The Alarm test state for each I/O signal shall be tested
- D14.8 The Consultant will be required to commission each HVAC Controller I/O point once installed at the station. Points shall be commissioned from the physical signal location (i.e. using Main Floor light switch to determine Station Occupancy at the HVAC Controller). Each I/O signal state shall be verified on at the HVAC Controller and the operation of the modulated dampers.
- (a) The gas detector will need to be simulated along with temperature status will be required to ensure operation of the modulated dampers as well.
- D14.9 A Wet Well level simulation for each Wet Well Level Controller will be required to ensure operation of the lift pumps (starting, stopping, duty selection, etc.). Both PLC Mode and Local Mode of operations will be required to be commissioned.
- D14.10 Ensure equipment is successfully commissioned with checklists sent to the Consulting Contract Administrator prior to any City, utility along with Inspection and Technical Services (ITS) inspectors visiting site to verify equipment operation and allow final occupancy.
- D14.11 Review all Contractor type written commissioning forms to be incorporated into the final O&M manual.
- D15. RECORD DOCUMENTS AND PROJECT CLOSE-OUT**
- D15.1 Coordinate with the Installation Contractor and Equipment Supplier to provide a minimum of two (2) on-site training sessions to provide instruction to City staff on the safe operation of all new equipment including recommended maintenance tasks and schedules. One (1) training session shall be provided for Operations staff and one (1) training session shall be provided for Maintenance staff.
- D15.2 Assist the Contractor in closing out all building applicable permits (building design summary, electrical, mechanical, structural, building occupancy, etc.) taken out for Construction work. Each Consultant discipline Lead Engineer will need to complete and seal an individual Professional Certification Occupancy Letter.
- D15.3 Operations & Maintenance (O&M) Manual
- (a) Review Contractor Operations & Maintenance (O&M) manual submissions for completeness. Advise the Contractor of any missing information.
  - (b) Each tab shall include a section header page along with a section index page to include unique documents within each section along with number of pages for each document. Pages should be numbered as per each section (i.e. 5-1, 5-2, ..., 5-20).
  - (c) The O&M shall include separate tabs for the following:
    - (i) Cover Page & Table of Contents;
    - (ii) Contractor and Consultant Contact Information;
    - (iii) Warranty Details;
    - (iv) Professional Certification Occupancy Letters;

- (v) Products and Shop Drawings;
  - (vi) Spare Parts & Tools;
  - (vii) Certified Factory Test Results;
  - (viii) Commissioning Reports & Forms;
  - (ix) Operator & Maintenance Training Presentations;
  - (x) Lessons Learned.
- (d) The O&M manual will be required to have separate electronic files for each section (tab) and be properly labelled (i.e. Section 1 – Contractor & Consultant Contact Information).
- (e) Once final O&M has been submitted and approved, ensure the Contractor provides five (5) hardcopy binders along with five (5) USB keys to the City. Coordinate with the Installation Contractor and Equipment Supplier to provide five (5) full sets of all Operation & Maintenance manuals to the City for all newly installed equipment and devices.

#### D15.4 Warranty Services

- (a) Attend a warranty inspection site visit with the Contractor, Consulting Contract Administrator and other City staff no later than one (1) month prior to Warranty expiring. Prepare and submit a deficiency report for the Contractor to remediate any warranty items.
- (b) Coordinate with the Contractor to repair and/or replace any warranty items.
- (c) Once all warranty deficiencies have been corrected, attend a final inspection site visit and issue Final Acceptance certificate to the Contractor.

#### D15.5 Asset Equipment List

- (a) Prepare a final Asset Equipment List in excel format to include all major equipment (pumps, fans, MCCs, CSTE, transformers, panelboards, control panels, heaters, dampers, etc.) along with all instruments to be incorporated for future maintenance work tracking. Refer to Appendix F for a sample Community Row Lift Station Asset Equipment List template to be used.
- (b) Preliminary Asset Equipment List submission shall be submitted no later than two (2) months after Total Performance has been reached.
- (c) Asset Equipment List will include separate excel sheets within excel file for:
  - (i) Asset Classification Breakdown;
  - (ii) Building;
  - (iii) Control Panels;
  - (iv) Electrical Equipment;
  - (v) HVAC;
  - (vi) Instruments;
  - (vii) Motors;
  - (viii) Process Piping & Valves;
  - (ix) Pumps.
- (d) All equipment within the Asset Equipment List will need to include the following:
  - (i) Equipment tag names and description;
  - (ii) Manufacturer details (manufacturer, make, model, serial number and date of manufacturer);
  - (iii) Sizes (weight, height, width, depth, etc.);
  - (iv) Electrical specifications (voltage, amperage, horse power, RPM speed);
  - (v) Certifications (CSA/cUL approval, NEMA rating, etc.).
- (e) Attend a site visit to collection all equipment to be included within the Asset Equipment List. The Consultant will be required to take pictures of all installed equipment at Tylehurst Lift Station to show equipment layout (including lamacoid) and nameplate.

- (f) Each asset equipment included in the Asset Equipment List will need to be included a separate pdf attachment files to show what the installed equipment layout along with nameplate details. All images shall include a description title (i.e. Tylehurst Lift Station - Lift Pump Motor MTR-L01) along with image captions (i.e. Front View, Nameplate, etc.). Attachment files shall be labelled to match equipment tag names exactly (i.e. MTR-L01). Refer to Appendix G for sample asset attachment file.
- (g) Submit a preliminary Asset Equipment List submission for City review. The submission shall include Asset Equipment List filled out for each piece of equipment along with individual pdf files for all equipment. The City will provide review comments within two (2) weeks for the Consultant to incorporate into the final Asset Equipment List.
- (h) The Consultant will be required to provide a USB key and courier to the Consulting Contract Administrator located at 1199 Pacific Avenue for the final Asset Equipment List and separate equipment pdf files.

#### D15.6 Record Documents

- (a) Ensure the Contractor provides redline as-built markups for all changes during Construction. Review details and incorporate into Record Documents.
- (b) Print arc flash labels for all electrical equipment based upon the final Arc Flash study, after Total Performance has been reached. Arc Flash labels are to be consistent with City Standards and are to be submitted to the City for review before printing.
- (c) All discipline key Consultant team members will be required to attend a final site inspection in order to accurately document any construction changes to be identified on the Record Documents. The Consultant will also be required to attach arc flash labels to all electrical equipment at the final site inspection.
  - (i) Staff will be required to access the lower levels of the Lift Station and will be required to have Confined Space Entry Training. The Consulting Contract Administrator will be checking all Consultant staff planning to enter the lower areas on site. Any staff that can not produce proof of training on site will not be allowed to enter the lower levels of the Lift Station.
- (d) All sealed Construction Documents (including drawings, reports, setting letters, etc.) produced for the project are required to be updated to become sealed Record Documents. The Record Documents shall include all changes to reflect the final construction work.
- (e) Preliminary Record Document submission shall be submitted no later than two (2) months after Total Performance has been reached.
- (f) The Consultant will be required to submit a Record Drawing review submission for the City Water and Waste Department to provide review comments.
- (g) Submit a preliminary Record Document submission for City review. The submission shall include all Record Drawings, Record Setting Letters and Reports along with all existing cancelled/superseded drawings. The City will provide review comments within three (3) for the Consultant to incorporate into the final Record Documents.
- (h) The following existing drawings will be required to be cancelled or superseded to reference the new applicable drawing:
  - (i) 1-0193L-E0001-0001
  - (ii) 1-0193L-M0001-001
  - (iii) 307
  - (iv) 308
  - (v) 310
  - (vi) 311
  - (vii) 1203
  - (viii) 1214
  - (ix) 4289
  - (x) 4318

- (xi) R-127
- (xii) R.216
- (i) The final Record Documents are to be sealed by a Professional Engineer with tracked document revision history.
- (j) Record Drawings shall include sealed pdfs along with AutoCAD files. Include all construction details and materials of the completed works, including the following:
  - (i) All construction details,
  - (ii) Complete materials list for each individual component installed,
  - (iii) Date of installation of Works (Total Performance),
  - (iv) Installation Contractor.
- (k) Record Setting Letters and Reports shall include sealed pdfs along with word files (for future revisions):
  - (i) Variable Frequency Settings Letters,
  - (ii) Control Narrative Report,
  - (iii) PLC Programming Report,
  - (iv) HMI Controller Report,
  - (v) Arc Flash Report complete with SKM software file.
  - (vi) Automatic Transfer Switch Setting Letter.
  - (vii) HVAC Controller Setting Letters.
- (l) The Consultant shall submit a final sealed Record Setting Letters and Reports within one (1) month of City Review.
- (m) The Consultant shall prepare a final (non-sealed) Record Drawing submission to the Consulting Contract Administrator. The submission shall include all Construction Drawings, Record Drawings along with all existing cancelled/superseded drawings. All drawings shall include pdf along with a CAD files. The Consulting Contract Administrator will prepare the package to be submitted to the City Water and Waste Department's Supervisor of Drafting & Graphic Services for preliminary review to be stored in the City internal drawing system.
- (n) All digital drawing files must have the Water and Waste Department drawing number assigned to that drawing number. Ensure the AutoCAD files have been cleaned up to remove all unused content that is not shown in the Paper layout tab and that each viewport has shown in the Model space includes viewport boundary window. Bind all XREF CADs within each drawing CAD file. Ensure all preliminary submission comments have been addressed. The reviewed final Record Drawing submission will be returned with comments (if any) for completion.
- (o) Once all revisions have been made, submit two (2) complete sets of full size sealed (A1) drawing hardcopy plots for the Works and a USB to include all sealed pdf files along with digital AutoCAD files. All drawing revisions shall be included as separate electronic (pdf & CAD) files and be labelled as the reserved City drawing number. The Consultant will be required to courier the hardcopy plots and USB key to 1199 Pacific Avenue to the Water and Waste Department's Supervisor of Drafting & Graphic Services.
- (p) The Consultant will be required to arrange for full size laminated hard copy plots with backer board to be printed at the Consultant's cost. The Drawings will be stored on site for Operations and Maintenance staff use. The following drawings are required to be plotted full size laminated with backer board:
  - (i) Single Line Diagram;
  - (ii) All HVAC P&ID Diagrams;
  - (iii) All Lift Pump P&ID Diagrams.

## **D16. ADDITIONAL WORK ALLOWANCE**

D16.1 The General Requirements for Additional Work Allowances are as follows:

- (a) The hourly rates of all Key Personnel and non-Key Personnel proposed for any Additional Work Allowances when defined and approved shall match the original Form P: Person Hours and/or original rate sheet provide. There will be no fee escalation allowed for yearly adjustments, promotions, etc. to be used for Additional Work Allowances.
  - (b) The Consultant shall apply a maximum of ten (10) percent markup on all Work performed by a Sub Consultant.
  - (c) Expenditures under the Additional Work Allowance must be authorized in writing by the Consulting Contract Administrator.
  - (d) The Contract price will be adjusted by written order to provide for a difference between the amount of the Additional Work Allowances and the actual cost of the Work.
  - (e) The City reserves the right to delete any or all of the Additional Work Allowances from the Contract if the Work intended to be covered by the Additional Work Allowances is not required, or if the Works intended are found to be more extensive than the provisional Additional Work Allowances.
- D16.2 The Consultant will be required to coordinate with the City of Winnipeg Underground Structures branch to locate all underground structures (pipes, cables, sewers, watermains, etc.). The engineering costs shall be applied towards the Additional Work Allowances.
- (a) All requests for information from the City of Winnipeg Underground Structures will be billed directly to the Consultant by Underground Structures. The Consultant shall pay the invoice to Under Structures and submit a copy of the paid invoice to the Water and Waste Department as an allowable disbursement.
- D16.3 The Consultant will be required to provide material testing for hazardous substances (lead paint, asbestos, etc.). The engineering costs shall be applied towards the Additional Work Allowances.
- D16.4 The Wet Well can only be inspected during when bypass pumping is in place and the Wet Well has been fully cleaned. Provide design services costing for any Wet Well repairs to extend the life of the Wet Well for a minimum of fifty (50) years. The Wet Well engineering costs shall be applied towards the Additional Work Allowance.
- (a) The Consultant shall prepare a concise Scope of Work and breakout cost Proposal for any new Wet Well concrete rehabilitation design services to be provided.
  - (b) The Consultant would be required to prepare a Proposed Change Notice for the Contractor to provide pricing to perform the repair work.
- D16.5 Should a Geotechnical report be required for the Tylehurst Lift Station in order to assist in Structural Engineering along with acquiring Permits required for Construction activities, the engineering costs shall be applied towards the Additional Work Allowances.
- (a) The Consultant shall prepare a concise Scope of Work and breakout cost Proposal for any Geotechnical Services to be provided.
  - (b) For any Geotechnical design services provided, a sealed Geotechnical Report will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
- D16.6 The Additional Work Allowances are to be used for engineering and design services that arise due to unforeseen conditions during the Project. When such Work arises, the Consultant will be required to prepare a concise Change is Scope of Services along with work breakdown costs, following requirements as defined in B10.4 and D16.1, in collaboration with the Consulting Contract Administrator. The Proposal shall be submitted to the Consulting Contract Administrator for final approval. No Work shall start prior to written approval provided.

## **D17. ACCESSIBLE CUSTOMER SERVICE REQUIREMENTS**

- D17.1 The Accessibility for Manitobans Act (AMA) imposes obligations on The City of Winnipeg to provide accessible customer service to all persons in accordance with the Customer Service

Standard Regulation (“CSSR”) to ensure inclusive access and participation for all people who live, work or visit Winnipeg regardless of their abilities.

- D17.1.1 The Consultant agrees to comply with the accessible customer service obligations under the CSSR and further agrees that when providing the Goods or Services or otherwise acting on the City of Winnipeg’s behalf, shall comply with all obligations under the AMA applicable to public sector bodies.
- D17.1.2 The accessible customer service obligations include, but are not limited to:
- (a) providing barrier-free access to goods and services;
  - (b) providing reasonable accommodations;
  - (c) reasonably accommodating assistive devices, support persons, and support animals;
  - (d) providing accessibility features e.g. ramps, wide aisles, accessible washrooms, power doors and elevators;
  - (e) inform the public when accessibility features are not available;
  - (f) providing a mechanism or process for receiving and responding to public feedback on the accessibility of all goods and services; and
  - (g) providing adequate training of staff and documentation of same.

## **D18. UNFAIR LABOUR PRACTICES**

- D18.1 Further to C3.2, the Consultant declares that in bidding for the Work and in entering into this Contract, the Consultant and any proposed Subconsultant(s) conduct their respective business in accordance with established international codes embodied in United Nations Universal Declaration of Human Rights (UDHR) <https://www.un.org/en/about-us/universal-declaration-of-human-rights> International Labour Organization (ILO) [https://www.ilo.org/global/lang--en/index.htm](https://www.ilo.org/global/lang-en/index.htm) conventions as ratified by Canada.
- D18.2 The City of Winnipeg is committed and requires its Consultants and their Subconsultants, to be committed to upholding and promoting international human and labour rights, including fundamental principles and rights at work covered by ILO eight (8) fundamental conventions and the United Nations Universal Declaration of Human Rights which includes child and forced labour.
- D18.3 Upon request from the Consulting Contract Administrator, the Consultant shall provide disclosure of the sources (by company and country) of the raw materials used in the Work and a description of the manufacturing environment or processes (labour unions, minimum wages, safety, etc.).
- D18.4 Failure to provide the evidence required under D18.3, may be determined to be an event of default in accordance with C14.
- D18.5 In the event that the City, in its sole discretion, determines the Consultant to have violated the requirements of this section, it will be considered a fundamental breach of the Contract and the Consultant shall pay to the City a sum specified by the Consulting Contract Administrator in writing (“Unfair Labour Practice Penalty”). Such a violation shall also be considered an Event of Default, and shall entitle the City to pursue all other remedies it is entitled to in connection with same pursuant to the Contract.
- D18.5.1 The Unfair Labour Practice Penalty shall be such a sum as determined appropriate by the City, having due regard to the gravity of the Consultant’s violation of the above requirements, any cost of obtaining replacement goods/ services or rectification of the breach, and the impact upon the City’s reputation in the eyes of the public as a result of same.
- D18.5.2 The Consultant shall pay the Unfair Labour Practice Penalty to the City within thirty (30) Calendar Days of receiving a demand for same in accordance with D18.5. The City may

also hold back the amount of the Unfair Labour Practice Penalty from payment for any amount it owes the Consultant.

- (a) The obligations and rights conveyed by this clause survive the expiry or termination of this Contract, and may be exercised by the City following the performance of the Work, should the City determine, that a violation by the Consultant of the above clauses has occurred following same. In no instance shall the Unfair Labour Practice Penalty exceed the total of twice the Contract value.

## **SUBMISSIONS**

### **D19. AUTHORITY TO CARRY ON BUSINESS**

D19.1 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 Consulting Contract Administrator with evidence thereof upon request.

### **D20. INSURANCE**

D20.1 The Consultant shall procure and maintain, at their own expense and cost, insurance policies with limits no less than those shown below.

D20.2 As a minimum, the Consultant shall, without limiting their obligations or liabilities under any other contract with the City, procure and maintain, at their 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 \$2,000,000.00 per claim and \$2,000,000.00 in the aggregate.

D20.2.1 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.

- D20.3 The policies required in D20.2(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.
- D20.4 The Consultant shall require any Consultants hired to perform geo technical drilling and sample collecting or closed-circuit television to procure and maintain, at their own expense and cost, comparable insurance to that set forth under D20.2(a) and D20.2(b).
- D20.5 The Consultant shall require each of their Subconsultants hired for design, architectural or engineering services as outlined in the Scope of Services to provide comparable insurance to that set forth under D20.2(a) and D20.2(c).
- D20.6 The Consultant shall provide the Consulting Contract Administrator with a certificate(s) of insurance 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 C4.4(a) 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 D20.9.
- D20.7 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.
- D20.8 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.
- D20.9 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**

### **D21. COMMENCEMENT**

- D21.1 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.
- D21.2 The Consultant shall not commence any Services until:
- (a) the Consulting Contract Administrator has confirmed receipt and approval of:
    - (i) evidence of authority to carry on business specified in D19;
    - (ii) evidence of the insurance specified in D20.
  - (b) the Consultant has attended a kickoff meeting with the Consulting Contract Administrator, or the Consulting Contract Administrator has waived the requirement for a meeting;
  - (c) The direct deposit application specified in D25.1
- D21.3 The City intends to award this Contract by March 3, 2025.

### **D22. CRITICAL STAGES**

- D22.1 The Consultant shall achieve critical stages of the Services for this Contract in accordance with the following requirements:
- (a) Preliminary Design Submission by April 28, 2025;
  - (b) 66% Design Submission by July 14, 2025;
  - (c) 99% Design Submission by September 8, 2025;
  - (d) Construction Tender Posted to MERX by November 17, 2025;
  - (e) Construction Tender Closing by December 12, 2025;
  - (f) Draft PLC Programming Submission by May 13, 2026;



- (g) New Lift Pumps in Service on New Controls by February 19, 2027
- (h) Substantial Performance by April 7, 2027;
- (i) Total Performance by June 4, 2027;
- (j) Record Documents Review Submission no later than two (2) months after Total Performance.

## **D23. SUPPLY CHAIN DISRUPTION SCHEDULE DELAYS**

- D23.1 The City acknowledges that the schedule for this Contract may be impacted by Supply Chain Disruption. Commencement and progress of the Services shall be performed by the Consultant with due consideration to delivery requirements and schedule identified in the Contract, in close consultation with the Consulting Contract Administrator.
- D23.2 If the Consultant is delayed in the performance of the Services by reason of the Supply Chain Disruption, the Services schedule may be adjusted by a period of time equal to the time lost due to such delay and costs related to such delay will be determined as identified herein.
- D23.3 A minimum of seven (7) Calendar Days prior to the commencement of Services, the Consultant shall declare whether a Supply Chain Disruption will affect the start date. The Consultant shall provide sufficient evidence that the delay is directly related to a Supply Chain Disruption, including but not limited to evidence related to availability of staff, ordering of Material or Goods, production and/or manufacturing schedules or availability of staff as appropriate.
- D23.4 For any delay related to Supply Chain Disruption and identified after Services have commenced, the Consultant shall within seven (7) Calendar Days of becoming aware of the anticipated delay declare the additional delay and shall provide sufficient evidence as indicated in D23.3. Failure to provide this notice will result in no additional time delays being considered by the City.
- D23.5 The Services schedule, including the durations identified in the Contract, will be adjusted to reflect delays accepted by the Consulting Contract Administrator.
- D23.6 Any time or cost implications as a result of Supply Chain Disruption and in accordance with the above, as confirmed by the Consulting Contract Administrator, shall be documented in accordance with C8.

## **MEASUREMENT AND PAYMENT**

### **D24. INVOICES**

- D24.1 Further to C11, the Consultant shall submit an invoice for each portion of Work performed to:
- The City of Winnipeg  
Corporate Finance - Accounts Payable  
4th Floor, Administration Building, 510 Main Street  
Winnipeg MB R3B 1B9
- Facsimile No.: 204-949-0864  
Send Invoices to [CityWpgAP-INVOICES@winnipeg.ca](mailto:CityWpgAP-INVOICES@winnipeg.ca)  
Send Invoice Inquiries to [CityWpgAP-INQUIRIES@winnipeg.ca](mailto:CityWpgAP-INQUIRIES@winnipeg.ca)  
Ensure the Consulting Contract Administrator is CC'd on all invoice emails
- D24.2 Invoices must clearly indicate, as a minimum:
- (a) the City's purchase order number;
  - (b) the City's project number and title: 'S-1338 – Tylehurst Lift Station Upgrades';
  - (c) date of delivery;
  - (d) delivery address;

- (e) type and quantity of work performed;
- (f) the amount payable with GST and MRST shown as separate amounts; and
- (g) the Consultant's GST registration number.

D24.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

## **D25. PAYMENT**

D25.1 Further to C11.14, the City shall make payments to the Consultant by direct deposit to the Consultant's banking institution, and by no other means. Payments will not be made until the Consultant has made satisfactory direct deposit arrangements with the City. Direct deposit application forms are at [https://winnipeg.ca/finance/files/Direct\\_Deposit\\_Form.pdf](https://winnipeg.ca/finance/files/Direct_Deposit_Form.pdf).

## **DISPUTE RESOLUTION**

### **D26. DISPUTE RESOLUTION**

D26.1 If the Consultant disagrees with any opinion, determination, or decision of the Consulting Contract Administrator, the Consultant shall act in accordance with the Consulting Contract Administrator's opinion, determination, or decision unless and until same is modified by the process followed by the parties pursuant to D26.

D26.2 The entire text of C17.4 is deleted, and amended to read: "Intentionally Deleted"

D26.3 The entire text of C17.5 is deleted, and amended to read:

- (a) If Legal Services has determined that the Disputed Matter may proceed in the Appeal Process, the Consultant must, within ten (10) Business Days of the date of the Legal Services Response Letter, submit their written Appeal Form, in the manner and format set out on the City's Purchasing Website, to the Chief Administrative Officer, and to the Consulting Contract Administrator. The Consultant may not raise any other disputes other than the Disputed Matter in their Appeal Form.

D26.4 Further to C17, prior to the Consulting Contract Administrator's issuance of a Final Determination, the following informal dispute resolution process shall be followed where the Consultant disagrees with any opinion, determination, or decision of the Consulting Contract Administrator ("Dispute"):

- (a) In the event of a Dispute, attempts shall be made by the Consulting Contract Administrator and the Consultant's equivalent representative to resolve Disputes within the normal course of project dealings between the Consulting Contract Administrator and the Consultant's equivalent representative.
- (b) Disputes which in the reasonable opinion of the Consulting Contract Administrator or the Consultant's equivalent representative cannot be resolved within the normal course of project dealings as described above shall be referred to a without prejudice escalating negotiation process consisting of, at a minimum, the position levels as shown below and the equivalent Consultant representative levels:
  - (i) The Consulting Contract Administrator;
  - (ii) Supervisory level between the Consulting Contract Administrator and applicable Water and Waste Department Head;
  - (iii) Water and Waste Department Head.

D26.4.1 Names and positions of Consultant representatives equivalent to the above City position levels shall be determined by the Consultant and communicated to the City at the pre-commencement or kick off meeting.

D26.4.2 As these negotiations are not an adjudicative hearing, neither party may have legal counsel present during the negotiations.

- D26.4.3 Both the City and the Consultant agree to make all reasonable efforts to conduct the above escalating negotiation process within twenty (20) Business Days, unless both parties agree, in writing, to extend that period of time.
- D26.4.4 If the Dispute is not resolved to the City and Consultant's mutual satisfaction after discussions have occurred at the final escalated level as described above, or the time period set out in D26.4.3, as extended if applicable, has elapsed, the Consulting Contract Administrator will issue a Final Determination as defined in C1.1(dd), at which point the parties will be governed by the Dispute Resolution process set out in C17.

### THIRD PARTY AGREEMENTS

#### D27. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

- D27.1 In the event that funding for the Services of the Contract is provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada, the following terms and conditions shall apply, as required by the applicable funding agreements.
- D27.2 Further to D27.1, in the event that the obligations in D27 apply, actual costs legitimately incurred by the Consultant as a direct result of these obligations ("Funding Costs") shall be determined by the actual cost to the Consultant and not by the valuation method(s) outlined in C8.4. In all other respects Funding Costs will be processed in accordance with Changes in Services under C8.
- D27.3 For the purposes of D27:
- (a) "**Government of Canada**" includes the authorized officials, auditors, and representatives of the Government of Canada; and
  - (b) "**Government of Manitoba**" includes the authorized officials, auditors, and representatives of the Government of Manitoba.
- D27.4 Modified Insurance Requirements
- D27.4.1 If not already required under the insurance requirements identified in D20, the Consultant will be required to obtain and maintain professional liability insurance in an amount of no less than one million dollars (\$1,000,000) inclusive per claim. Such policy shall be maintained for at least twenty four (24) months after Total Performance.
- D27.4.2 The Consultant shall obtain and maintain third party liability insurance with minimum coverage of two million dollars (\$2,000,000.00) per occurrence on all licensed vehicles operated at the Site. In the event that this requirement conflicts with another licensed vehicle insurance requirement in this Contract, then the requirement that provides the higher level of insurance shall apply.
- D27.4.3 Insurers shall provide satisfactory Certificates of Insurance to the Government of Manitoba prior to commencement of Services as written evidence of the insurance required. The Certificates of Insurance must provide for a minimum of thirty (30) days' prior written notice to the Government of Manitoba in case of insurance cancellation.
- D27.4.4 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.
- D27.5 Indemnification By Consultant
- D27.5.1 In addition to the indemnity obligations outlined in C13 of the General Conditions for Consultant Services, the Consultant agrees to indemnify and save harmless the Government of Canada and the Government of Manitoba and each of their respective Ministers, officers, servants, employees, and agents from and against all claims and demands, losses, costs, damages, actions, suit or other proceedings brought or pursued in any manner in respect of any matter caused by the Consultant or arising from this Contract or the Services, or from the goods or services provided or required to be provided by the Consultant, except those resulting from the negligence of any of the Government of

Canada's or the Government of Manitoba's Ministers, officers, servants, employees, or agents, as the case may be.

- D27.5.2 The Consultant agrees that in no event will Canada or Manitoba, their respective officers, servants, employees or agents be held liable for any damages in contract, tort (including negligence) or otherwise, for:
- (a) any injury to any person, including, but not limited to, death, economic loss or infringement of rights;
  - (b) any damage to or loss or destruction of property of any person; or
  - (c) any obligation of any person, including, but not limited to, any obligation arising from a loan, capital lease or other long term obligation;
- D27.5.3 in relation to this Contract or the Work.

## D27.6 Records Retention and Audits

- D27.6.1 The Consultant shall maintain and preserve accurate and complete records in respect of this Contract and the Services, including all accounting records, financial documents, copies of contracts with other parties and other records relating to this Contract and the Services during the term of the Contract and for at least six (6) years after Total Performance. Those records bearing original signatures or professional seals or stamps must be preserved in paper form; other records may be retained in electronic form.
- D27.6.2 In addition to the record keeping and inspection obligations outlined in C7.16 of the General Conditions for Consultant Services, the Consultant shall keep available for inspection and audit at all reasonable times while this Contract is in effect and until at least six (6) years after Total Performance, all records, documents, and contracts referred to in D27.6.1 for inspection, copying and audit by the City of Winnipeg, the Government of Manitoba and/or the Government of Canada and their respective representatives and auditors, and to produce them on demand; to provide reasonable facilities for such inspections, copying and audits, to provide copies of and extracts from such records, documents, or contracts upon request by the City of Winnipeg, the Government of Manitoba, and/or the Government of Canada and their respective representatives and auditors, and to promptly provide such other information and explanations as may be reasonably requested by the City of Winnipeg, the Government of Manitoba, and/or the Government of Canada from time-to-time.

## D27.7 Other Obligations

- D27.7.1 The Consultant consents to the City providing a copy of the Contract Documents to the Government of Manitoba and/or the Government of Canada upon request from either entity.
- D27.7.2 If the Lobbyists Registration Act (Manitoba) applies to the Consultant, the Consultant represents and warrants that it has filed a return and is registered and in full compliance with the obligations of that Act, and covenants that it will continue to comply for the duration of this Contract.
- D27.7.3 The Consultant shall comply with all applicable legislation and standards, whether federal, provincial, or municipal, including (without limitation) labour, environmental, and human rights laws, in the course of providing the Services.
- D27.7.4 The Consultant shall properly account for the Services provided under this Contract and payment received in this respect, prepared in accordance with generally accepted accounting principles in effect in Canada, including those principles and standards approved or recommended from time-to-time by the Chartered Professional Accountants of Canada or the Public Sector Accounting Board, as applicable, applied on a consistent basis.
- D27.7.5 The Consultant represents and warrants that no current or former public servant or public office holder, to whom the Value and Ethics Code for the Public Sector, the Policy on Conflict of Interest and Post Employment, or the Conflict of Interest Act applies, shall

derive direct benefit from this Contract, including any employment, payments, or gifts, unless the provision or receipt of such benefits is in compliance with such codes and the legislation.

D27.7.6

The Consultant represents and warrants that no member of the House of Commons or of the Senate of Canada or of the Legislative Assembly of Manitoba is a shareholder, director or officer of the Consultant or of a Subconsultant, and that no such member is entitled to any benefits arising from this Contract or from a contract with the Consultant or a Subconsultant concerning the Work.

## **APPENDIX A – HISTORICAL DRAWINGS**

## **APPENDIX B – TYLEHURST LIFT STATION ASSESSMENT**

## **APPENDIX C – TYLEHURST LIFT PUMP INFORMATION**



## **APPENDIX D – WWD AUTOMATION DESIGN GUIDE**

## **APPENDIX E – WWD HMI LAYOUT AND ANIMATION PLAN**

**APPENDIX F – COMMUNITY ROW LIFT STATION ASSET EQUIPMENT LIST**

## **APPENDIX G – ASSET EQUIPMENT ATTACHMENT FILE MTR-L01**

## **APPENDIX H – WSTP E&I STANDARDIZATION CLAUSES**

## **APPENDIX I – COW WASTERWATER COLLECTION COMMISSIONING FORMS**

## **APPENDIX J – COW TAG NAMING STANDARD**

## **APPENDIX K – SAMPLE OPERATIONAL SHUTDOWN SUMMARY (OSS) PLAN**