



THE CITY OF WINNIPEG

REQUEST FOR PROPOSAL

RFP NO. 819-2022

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

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 PROFESSIONAL CONSULTING SERVICES FOR CONWAY LIFT STATION UPGRADES

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, January 5, 2023.

B2.2 The Consulting Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. SITE INVESTIGATION

B3.1 The Consulting Contract Administrator or an authorized representative will conduct a site investigation tour of the facility located at 2200 Portage Avenue, on December 15, 2022, beginning at 1:30 pm:

- (a) Proponents are required to bring their own PPE (safety vest, boots, hard hat, safety glasses and gloves) to the Site Investigation. Proponents without appropriate PPE will not be allowed access inside the Station.
- (b) Due to COVID-19 pandemic, all Proponents are advised to maintain social distancing and face masks are mandatory during the Site Investigation.

B3.1.1 Proponents are requested to register for the site investigation by contacting the Consulting Contract Administrator identified in D2.

B3.2 Although attendance at the Site Investigations is not mandatory, the City strongly suggests that Proponents attend.

B3.3 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.

B3.4 The Proponent is responsible for inspecting the Site, the nature of the Work to be done and all conditions that might affect his/her Proposal or his/her 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.
- B6.4 The Proponent is responsible for ensuring that he/she has 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) Fees (Section B) in accordance with B9.
- B7.2 The Proposal should also consist of the following components:

- (a) Experience of Proponent and Subconsultants (Section C) in accordance with B10;
- (b) Experience of Key Personnel Assigned to the Project (Section D), in accordance with B11;
- (c) Project Understanding and Methodology (Section E) in accordance with B12;
- (d) Management Proposal (Section F) in accordance with B13; and
- (e) Project Schedule (Section G) in accordance with B14.

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.

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 B23.1(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 his/her own name, his/her name shall be inserted;
- (b) if the Proponent is a partnership, the full name of the partnership shall be inserted;
- (c) if the Proponent is a corporation, the full name of the corporation shall be inserted;
- (d) if the Proponent is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

B8.2.1 If a Proposal is submitted jointly by two 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 his/her own name, it shall be signed by the Proponent;
- (b) if the Proponent is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;

- (c) if the Proponent is a corporation, it shall be signed by its duly authorized officer or officers;
- (d) if the Proponent is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B8.4.1 The name and official capacity of all individuals signing Form A: 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 D4.1 Scope of Services.

B9.2 Adjustments to Fees will only be considered based on increases to the Scope of Services.

B9.2.1 The City will not consider an adjustment to the Fees based on changes in the Project budget or the Final Total Construction Cost.

B9.3 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.

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

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

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

B9.6.1 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 D16. Any such costs shall be determined in accordance with D16.

B10. EXPERIENCE OF PROPONENT AND SUBCONSULTANTS (SECTION C)

B10.1 Proposals should include:

- (a) details demonstrating the history and experience of the Proponent and Subconsultants in providing programming; design, management of the project and contract administration services on three projects of similar complexity, scope and value.

B10.2 For each project listed in B10.1(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) Consultants original cost and final cost;
- (f) project's construction original contracted cost and final cost;
- (g) design and schedule (anticipated Project schedule and actual project delivery schedule, showing design separately, when Construction Contract was awarded along with Substantial Performance and Total Performance);

- (h) project owner;
- (i) reference information (two current names with telephone numbers and emails per project);
- (j) Any deviations clearly describing the difference in regards to project cost and schedule delays.

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

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

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

B11.1 Describe your approach to overall team formation and coordination of team members.

B11.1.1 Include an organizational chart for the Project for key personnel on the project including:

- (a) Project Manager;
- (b) Architectural Lead Engineer;
- (c) Automation Lead Engineer;
- (d) Civil Lead Engineer;
- (e) Electrical Lead Engineer;
- (f) Mechanical Lead Engineer;
- (g) PLC Programming Lead Engineer;
- (h) Process Lead Engineer;
- (i) Structural Lead Engineer.

B11.2 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. Descriptions should include:

- (a) planned role of key personnel intended for this project;
- (b) educational background and degrees;
- (c) professional recognitions;
- (d) current job title;
- (e) years of experience in current position;
- (f) years of experience in design and construction; and
- (g) years of experience with current employer.

B11.2.1 Roles of each of the Key Personnel in the Project should be identified in the organizational chart referred to in B11.1.1.

B11.3 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 per project).

B12. PROJECT UNDERSTANDING AND METHODOLOGY (SECTION E)

- B12.1 Describe your firm's project management approach and team organization during the performance of Services, so that the evaluation committee has a clear understanding of the methods the Proponent will use in the delivery of this Project.
- B12.2 Methodology should be presented in accordance with the Scope of Services identified in D4.1.
- B12.3 Describe the collaborative process/method to be used by the Key Personnel of the team in the various phases of the Project.
- B12.4 Proposals should address:
- (a) the Proponents understanding of the Project;
 - (b) the Proponents approach and methodology to complete the work;
 - (c) any innovation to be used to perform the services;
 - (d) any location specific issues;
 - (e) any perceived project challenges and how they will be overcome;
 - (f) any activities and services to be provided by the City;
 - (g) the deliverables of the Project;
 - (h) the City's 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
 - (i) any other issue that conveys your team's understanding of the Project requirements.

B13. MANAGEMENT PROPOSAL (SECTION F)

- 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 Describe the collaborative process/method to be used by the Key Personnel of the team in the various phases of the Project.
- B13.3 Proposals should address:
- (a) job function for each identified individual and group of individuals so identified;
 - (b) time estimates by work activity/phase defined in D4.1 Scope of Services and in total for each individual identified in B11.1.1;
 - (i) Proponents may use Form P: Person Hours or a table of their own design provided it includes all information requested in accordance with B13.3 (b).
 - (ii) A sample of Form P: Person Hours can be found at <https://winnipeg.ca/matmgt/templates/information.stm>
 - (c) an organizational chart for the project as referred to in B11.1.1.
- B13.4 For each person identified in B11.1.1, list the percent of the person's time to be dedicated to the Project in accordance with the Scope of Services identified in D4.1.

B14. PROJECT SCHEDULE (SECTION G)

- B14.1 Proponents should present a carefully considered Critical Path Method schedule using Microsoft Project or similar project management software, complete with resource assignments (key designers), durations (weekly timescale) and milestone dates or events. The schedule should address each requirement of the Scope of Services.

B14.2 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.

B15. DISCLOSURE

B15.1 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.

B15.2 The Persons are:

- (a) N/A

B16. CONFLICT OF INTEREST AND GOOD FAITH

B16.1 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.

B16.2 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 its participation in the RFP process or the Project; or
- (f) has knowledge of confidential information (other than confidential information disclosed by the City in the normal course of the RFP process) of strategic and/or material relevance to the RFP process or to the Project that is not available to other Proponents and that could or would be seen to give that Proponent an unfair competitive advantage.

B16.3 In connection with its Proposal, each entity identified in B16.2 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.

B16.4 Without limiting B16.3, the City may, in its sole discretion, waive any and all perceived, potential or actual Conflicts of Interest. The City's waiver may be based upon such terms and conditions as the City, in its sole discretion, requires to satisfy itself that the Conflict of Interest has been appropriately avoided or mitigated, including requiring the Proponent to put into place such

policies, procedures, measures and other safeguards as may be required by and be acceptable to the City, in its sole discretion, to avoid or mitigate the impact of such Conflict of Interest.

- B16.5** Without limiting B16.3, and in addition to all contractual or other rights or rights at law or in equity or legislation that may be available to the City, the City may, in its sole discretion:
- (a) disqualify a Proponent that fails to disclose a perceived, potential or actual Conflict of Interest of the Proponent or any of its Key Personnel;
 - (b) require the removal or replacement of any Key Personnel proposed for the Services that has a perceived, actual or potential Conflict of Interest that the City, in its sole discretion, determines cannot be avoided or mitigated;
 - (c) disqualify a Proponent or Key Personnel proposed for the Services that fails to comply with any requirements prescribed by the City pursuant to B16.4 to avoid or mitigate a Conflict of Interest; and
 - (d) disqualify a Proponent if the Proponent, or one of its Key Personnel proposed for the Project, has a perceived, potential or actual Conflict of Interest that, in the City's sole discretion, cannot be avoided or mitigated, or otherwise resolved.
- B16.6** The final determination of whether a perceived, potential or actual Conflict of Interest exists shall be made by the City, in its sole discretion.

B17. QUALIFICATION

- B17.1** 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.
- B17.2** The Proponent and any proposed Subconsultant (for the portion of the Services proposed to be subcontracted to them) shall:
- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <https://winnipeg.ca/finance/findata/matmgt/listing/debar.pdf>
- B17.3** 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 B17.4 and D5.1(a)).

B17.4 Further to B17.3(f), the Proponent acknowledges they and all Subconsultants have obtained training required by the Accessibility for Manitobans Act (AMA) available at <http://www.accessibilitymb.ca/training.html> for anyone that may have any interaction with the public on behalf of the City of Winnipeg.

B17.5 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.

B17.6 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.

B18. OPENING OF PROPOSALS AND RELEASE OF INFORMATION

B18.1 Proposals will not be opened publicly.

B18.2 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.

B18.3 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).

B18.3.1 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.

B18.4 Following the award of Contract, a Proponent will be provided with information related to the evaluation of his/her submission upon written request to the Consulting Contract Administrator.

B19. IRREVOCABLE OFFER

B19.1 The Proposal(s) submitted by the Proponent shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid/Proposal.

B19.2 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.

B20. WITHDRAWAL OF OFFERS

B20.1 A Proponent may withdraw his/her Proposal without penalty prior to the Submission Deadline.

B21. INTERVIEWS

B21.1 The Consulting Contract Administrator may, in his/her sole discretion, interview Proponents during the evaluation process.

B22. NEGOTIATIONS

B22.1 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.

B22.2 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.

B22.3 If, in the course of negotiations pursuant to B22.2, 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.

B23. EVALUATION OF PROPOSALS

B23.1 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 B17: (pass/fail)
- (c) Fees; (Section B) 40%
- (d) Experience of Proponent and Subconsultant; (Section C) 15%
- (e) Experience of Key Personnel Assigned to the Project; (Section D) 20%
- (f) Project Understanding and Methodology; (Section E) 15%
- (g) Management Proposal; (Section F) 5%
- (h) Project Schedule. (Section G) 5%

B23.2 Further to B23.1(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.

B23.3 Further to B23.1(b), the Award Authority shall reject any Proposal submitted by a Proponent who does not demonstrate, in its Proposal or in other information required to be submitted, that it is qualified.

B23.4 If, in the sole opinion of the City, a Proposal does not achieve a pass rating for B23.1(a) and B23.1(b), the Proposal will be determined to be non-responsive and will not be further evaluated.

B23.5 Further to B23.1(c), Fees will be evaluated based on Fees submitted in accordance with B9.

B23.6 Further to B23.1(d), 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 B10.

B23.7 Further to B23.1(e), 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 B11.

B23.8 Further to B23.1(f), 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 B12.

B23.9 Further to B23.1(g)B23.1(h), Management Proposal will be evaluated considering the Proponent's ability to comply with the requirements of the Project, in accordance with B13.

- B23.10 Further to B23.1(h), Project Schedule will be evaluated considering the Proponent's ability to comply with the requirements of the Project, in accordance with B14.
- B23.11 Notwithstanding B23.1(d) to B23.1(h), where Proponents fail to provide a response to B7.2(a) to B7.2(e), the score of zero may be assigned to the incomplete part of the response.
- B23.12 Proposals will be evaluated considering the information in the Proposal Submission and any interviews held in accordance with B21.
- B23.13 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.

B24. AWARD OF CONTRACT

- B24.1 The City will give notice of the award of the Contract, or will give notice that no award will be made.
- B24.2 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.
 - B24.2.1 Without limiting the generality of B24.2, the City will have no obligation to award a Contract where:
 - (a) the prices exceed the available City funds for the Services;
 - (b) the prices are materially in excess of the prices received for similar services in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Services, or a significant portion thereof, with its own forces;
 - (d) only one Proposal is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B24.3 Where an award of Contract is made by the City, the award shall be made to the qualified Proponent submitting the most advantageous offer.
- B24.4 The City may, at its discretion, award the Contract in phases.
- B24.5 Further to B24.4 the City reserves the right to negotiate and award future phases to the successful Proponent.
- B24.6 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
 - B24.6.1 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.
- B24.7 The form of Contract with the City of Winnipeg will be based on the Contract as defined in C1.1(v).
- B24.8 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 D16 shall immediately take effect upon confirmation of such funding, regardless of when funding is confirmed.
- B24.9 Following the award of Contract, a Proponent will be provided with information related to the evaluation of its Proposal upon written request to the Consulting Contract Administrator.

B24.10 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, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm.
- C0.2 A reference in the Request for Proposal to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Consultant Services*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

D1.1 In addition to the *General Conditions for Consultant Services*, these Supplemental Conditions are applicable to the Services of the Contract.

D2. CONSULTING CONTRACT ADMINISTRATOR

D2.1 The Consulting Contract Administrator is:

The Project Manager is:

Stacy Cournoyer, P. Eng.

Telephone No. 204 986-2142

Email Address: SCournoyer@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 Conway Lift Station, located at 2200 Portage Avenue, is situated just south of the intersection of Portage Avenue and Conway Street. The lift station conveys sewage collected from the Conway/Moorgate Sewer District and pumps this sewage via force main into an interceptor sewer on Portage Avenue where the sewage continues to flow to be treated at the West End Water Pollution Control Centre. The Station was constructed in the 1963 and consists of two dry pit solids handling pumps. The Station has had minor upgrades over time, but due to its age many of the mechanical, electrical and structural components are obsolete and no longer provide reliable service. Major upgrades of these components are now required to allow the Station to continue to provide dependable operational service for many years to come.

D3.2 Historical record drawings for the Conway Lift Station are included in Appendix "A" of this document.

(a) **The record drawings provided herein are for informational purposes only and the City makes no claim or liability to the accuracy of the information provided.**

D3.3 An assessment report of the existing lift station, prepared by MPE Engineering Ltd., is included in Appendix "B" of this document for information purposes only.

D3.4 An assessment report of the existing hoist devices and lifting capacities, prepared by WSP (formerly MMM Group), is included in Appendix "C" of this document for information purposes only.

D3.5 The detailed design stage for this project will largely involve upgrading the structural, mechanical, electrical and process components, including instrumentation and ventilation, inside the Station along with some structural modifications to the building.

D3.6 The Conway Lift Station upgrading will generally consist of the following work:

- (a) Replacement of two (2) existing wastewater sewage pumps and pump motors in the "dry-pit" section of the station with two (2) new pumping units.
- (b) The design of the lift station pumping system must incorporate standby capacity such that when the largest pump is out of service the station is capable of handling the peak inflow rate.

- (c) The two (2) wastewater sewage pumps shall be of the following:
 - (i) Each new pumping unit shall have a minimum capacity of 63.0 L/s (999 USgpm) at a Total Dynamic Head as determined by the Consultant and shall review the system operating conditions of the Station to verify the appropriate operating point of the pumps.
 - (ii) Provide review of Station capacity to utilize option for larger pumping units.
 - (iii) Each new pump motor will be operated from a 575 volt, 3 Phase, 60 cycle power supply and be capable of being operated by a variable frequency drive (VFD), complete with line and load side filters.
 - (iv) The Consultant will be required to conduct a hydraulic review of the Station suction and discharge piping to determine the required capacity and HP rating of the pumps and motors can be increased in size to reduce pump cycle run time and without overwhelming the downstream interceptor sewer on Portage Avenue.
 - (v) The Consultant shall also review the hydraulics of the downstream interceptor sewer to determine maximum flow capacity.
 - (vi) Pumps must be capable of running in reverse mode both automatically and locally (remote from SCADA or at the station from the HMI operator interface) for de-clogging and de-ragging purposes.
 - (vii) It is estimated the Peak Dry Weather Flow into this Station is 57.3 L/s (908 USgpm). The Department is currently reviewing the flows to this Station and may provide a more updated Peak Dry Weather Flow value later in the year.
 - (viii) The Consultant will be required to develop and administer a separate Tender or *Tenders* after award of this contract to purchase the pumping units (includes pumps, motors, drive shafts, etc. plus any other materials and equipment required that may have long delivery times) as early as possible so that these goods will be manufactured and delivered in a timely fashion to be installed in the station by others during 2023–24.
 - (ix) The City will assist the Consultant with developing the specifications required for pumping unit procurement.
 - (x) The Consultant may also need to include other required goods with long delivery schedules under this separate Tender such as, but not limited to electrical components, gate valves, pipe fittings, etc.
- (d) New variable frequency drives (VFDs) complete with line and load side filters will be required to operate the pumps with the capability of the pumps being run in reverse by the PLC HMI and remotely by SCADA;
- (e) Determine if Installation of soft starters should be used for all new HVAC motors;
- (f) Replacement of existing RTU panel with a new PLC control panel (Schneider M580 PLC);
- (g) Installation of two (2) flow meters (one for each individual pumping unit may be considered if there is appropriate space in the Station process piping to do so) and associated instrumentation;
- (h) Design and Specification Development for all new process piping;
- (i) Development of new hydraulic system curve for Station with a recommended pump operating point;
- (j) Replacement of existing MCC (motor control centre) and associated electrical work. New MCC(s) and VFD shall sit on housekeeping pad(s) and be Schneider Electric as standardized by the City (RFP 756-2013);
- (k) Replacement of electrical distribution system including wall receptacles and lighting. New outdoor lighting shall operate on a photocell and operate on a 0-10V dimming controller that allows for manual adjustment;
- (l) Replacement of HVAC System. New heating loads along with fans shall operate on 575V, 3-Phase, 60 Hertz;

- (m) Installation of a by-pass pumping “tee” connection on the force main, complete with MH assembly;
- (n) Provide design for new building superstructure to accommodate installation of new electrical distribution centre, equipment hoist, HVAC equipment and all other necessary components required above grade. The superstructure should be aesthetically suitable for the location of the pumping station;
- (o) Demolition of existing station building superstructure while keeping all existing process control equipment protected and operational;
- (p) Provision of main floor hoisting/craning device;
- (q) Provision of motor room and pump room hoisting/craning devices – preferably a suspended steel I-Beam design with a movable trolley hoist; and
- (r) Provision of geotechnical and soil testing reports, if required;
- (s) Provide programming for the new Schneider M580 PLC.

D4. SCOPE OF SERVICES

D4.1 The Services required under this Contract shall consist of the following:

- (a) Preliminary Engineering;
- (b) Design and Specification Development;
- (c) Mechanical modifications;
- (d) Electrical and Instrumentation modifications;
- (e) Structural modifications;
- (f) Architectural upgrades;
- (g) Ventilation upgrades;
- (h) PLC Programming upgrades;
- (i) Contract Document Preparation;
- (j) Procurement Process;
- (k) Contract Administration Services; and
- (l) Project Closeout Services.

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 its 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 – Identification Standard, current revision: <https://winnipeg.ca/waterandwaste/dept/manual.stm#wastewater>
- (c) The City of Winnipeg, Water and Waste Department – HMI Layout and Animation Plan, current revision: 02 attached as Appendix D.
- (d) Universal Design Policy
<http://clkapps.winnipeg.ca/DMIS/DocExt/ViewDoc.asp?DocumentTypeId=2&DocId=3604>

D5. DEFINITIONS

- D5.1 When used in this Request for Proposal:
- (a) "**CSO**" means Combined Sewer Overflow;
 - (b) "**DP**" means Displaced Pressure;
 - (c) "**I/O**" means Input / Output;
 - (d) "**MCC**" means Motor Control Centre;
 - (e) "**O&M**" means Operations & Maintenance;
 - (f) "**PLC**" means Programmable Logic Controller;
 - (g) "**RTU**" means Remote Terminal Unit;
 - (h) "**VFD**" means Variable Frequency Drive.

D6. ACCESSIBLE CUSTOMER SERVICE REQUIREMENTS

- D6.1 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.
- D6.1.1 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.
- D6.1.2 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.

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

- D7.1 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.

D8. SAFE WORK PLAN

- D8.1 The Consultant shall provide the Consulting Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.4(a) for the return of the executed Contract.

D8.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/safety/default.stm>

D9. INSURANCE

D9.1 The Consultant shall procure and maintain, at its own expense and cost, insurance policies with limits no less than those shown below.

D9.2 As a minimum, the Consultant shall, without limiting its obligations or liabilities under any other contract with the City, procure and maintain, at its own expense and cost, the following insurance policies:

(a) Comprehensive or Commercial General Liability Insurance including:

- (i) an inclusive limit of not less than \$2,000,000 for each occurrence or accident with a minimum \$2,000,000 Products and Completed Operations aggregate and \$5,000,000 general aggregate;
- (ii) all sums which the Consultant shall become legally obligated to pay for damages because of bodily injury (including death at any time resulting therefrom) sustained by any person or persons or because of damage to or destruction of property caused by an occurrence or accident arising out of or related to the Services or any operations carried on in connection with this Contract;
- (iii) coverage for Products/Completed Operations, Blanket Contractual, Consultant's Protective, Personal Injury, Contingent Employer's Liability, Broad Form Property Damage, Employees as Additional Insureds, and Non-Owned Automobile Liability;
- (iv) a Cross Liability clause and/or Severability of Interest clause providing that the inclusion of more than one Insured shall not in any way affect the rights of any other Insured hereunder in respect to any claim, demand, suit or judgment made against any other Insured.

(b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Consultant directly or indirectly in the performance of the Service. The limit of liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence.

(c) Professional Errors and Omissions Liability Insurance including:

- (i) an amount not less than \$2,000,000.00 per claim and \$2,000,000.00 in the aggregate.

D9.2.1 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.

D9.3 The policies required in D9.2(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.

D9.4 The Consultant shall require any Consultants hired to perform geo technical drilling and sample collecting or closed-circuit television to procure and maintain, at its own expense and cost, comparable insurance to that set forth under D9.2(a) and D9.2(b).

D9.5 The Consultant shall require each of its Subconsultants hired for design, architectural or engineering services as outlined in the Scope of Services to provide comparable insurance to that set forth under D9.2(a) and D9.2(c).

D9.6 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 D9.9.

- D9.7 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.
- D9.8 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.
- D9.9 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

D10. COMMENCEMENT

- D10.1 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.
- D10.2 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 D7;
 - (ii) the Safe Work Plan specified in D8; and
 - (iii) evidence of the insurance specified in D9.
 - (b) the Consultant has attended a 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 D14.1.

D11. CRITICAL STAGES

- D11.1 The Consultant shall achieve critical stages of the Services for this Contract in accordance with the following requirements:
- (a) Tender for supply of goods and materials with long deliveries (pumps and motors, electrical components, large diameter valves; etc.) closing by April 14, 2023.
 - (b) Procurement of Schneider Electric equipment (Motor Control Centres, Variable Frequency Drives, PLC rack and cards) ready for ordering by April 14, 2023.
 - (c) Final design for Station upgrades completed and accepted by the City by July 21, 2023.
 - (d) Tender for Station upgrades closing by August 28, 2023.
 - (e) New Station pumps and pump motors (including all related components such as drive shafts, cabling, conduits, controls, etc.) must be installed and operational by March 1, 2024.
 - (f) Substantial Performance by May 15, 2024.
 - (g) Total Performance by June 30, 2024.

D12. COVID-19 SCHEDULE DELAYS

- D12.1 The City acknowledges that the schedule for this Contract may be impacted by the COVID-19 pandemic. Commencement and progress of the Services shall be performed by the Consultant with due consideration to the health and safety of workers and the public, directives from health authorities and various levels of government and in close consultation with the Consulting Contract Administrator.
- D12.2 If the Consultant is delayed in the performance of the Services by reason of the COVID-19 pandemic, 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.

- D12.3 A minimum of seven (7) Calendar Days prior to the commencement of Services, the Consultant shall declare whether COVID-19 will affect the start date. The Consultant shall provide sufficient evidence that the delay is directly related to COVID-19, including but not limited to evidence related to availability of staff, availability of material or work by others.
- D12.4 For any delay related to COVID-19 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 D12.3. Failure to provide this notice will result in no additional time delays being considered by the City.
- D12.5 The Services schedule, including the durations identified in the Contract, will be adjusted to reflect delays accepted by the Consulting Contract Administrator.
- D12.6 Any time or cost implications as a result of COVID-19 and in accordance with the above, as confirmed by the Consulting Contract Administrator, shall be documented in accordance with C8.

MEASUREMENT AND PAYMENT

D13. INVOICES

- D13.1 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
Send Invoice Inquiries to CityWpgAP-INQUIRIES@winnipeg.ca
Ensure the Contract Administrator is CC'd on all Invoice emails

- D13.2 Invoices must clearly indicate, as a minimum:
- the City's purchase order number;
 - the City's project number and title: 'S-1267 – Conway Lift Station Upgrades';
 - the Contract Administrator's name;
 - date of delivery;
 - delivery address;
 - type and quantity of work performed;
 - the amount payable with GST and MRST shown as separate amounts; and
 - the Consultant's GST registration number.

- D13.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D14. PAYMENT

- D14.1 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.

DISPUTE RESOLUTION

D15. DISPUTE RESOLUTION

- D15.1 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 D15.
- D15.2 The entire text of C17.4 is deleted, and amended to read: "Intentionally Deleted"
- D15.3 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 his written Appeal Form, in the manner and format set out on the City's Materials Management 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 his Appeal Form.
- D15.4 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 Department Head;
 - (iii) Department Head.
- D15.4.1 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.
- D15.4.2 As these negotiations are not an adjudicative hearing, neither party may have legal counsel present during the negotiations.
- D15.4.3 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.
- D15.4.4 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 D15.4.3, as extended if applicable, has elapsed, the Consulting Contract Administrator will issue a Final Determination as defined in C1.1(v), at which point the parties will be governed by the Dispute Resolution process set out in C17.

THIRD PARTY AGREEMENTS

D16. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

- D16.1 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.
- D16.2 Further to D16.1, in the event that the obligations in D16 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.
- D16.3 For the purposes of D16:
- (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.
- D16.4 Modified Insurance Requirements
- D16.4.1 If not already required under the insurance requirements identified in D9, 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.
- D16.4.2 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.
- D16.4.3 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.
- D16.4.4 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.
- D16.5 Indemnification By Consultant
- D16.5.1 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.
- D16.5.2 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;

D16.5.3 in relation to this Contract or the Work.

D16.6 Records Retention and Audits

D16.6.1 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.

D16.6.2 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 D16.6.1 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.

D16.7 Other Obligations

D16.7.1 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.

D16.7.2 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.

D16.7.3 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.

D16.7.4 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.

D16.7.5 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.

D16.7.6 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.

PART E - SCOPE OF SERVICES

E1. DESIGN SERVICES

E1.1 General

- E1.1.1 These Terms of Reference are supplemental to the Standard Terms and Conditions of Consultant Services and the "Definition of Standard Consulting Engineering Services" required by the City of Winnipeg.
- E1.1.2 The consulting services described herein are to be provided for the Water and Waste Department (the Department).
- E1.1.3 The Department will provide assistance towards the following services:
- (a) Site access to the Station.
 - (b) Provision of any available information on Conway Station operation records (i.e. pump cycle times, maintenance records, sewer flow gauging).
- E1.1.4 The following engineering services are required for the Conway Lift Station:
- (a) Miscellaneous structural engineering and architectural upgrades.
 - (b) HVAC engineering design.
 - (c) Electrical and instrumentation engineering design, including Arc Flash Hazard study. The Arc Flash study shall consist of a separate sealed report including arc flash results, time current curves (TCCs) and short-circuit duty details. The final arc flash report shall be sealed by an Engineer.
 - (d) Programming of the new Schneider M580 PLC.
 - (e) Design of the process piping (suction and discharge), including pumps, valves, fittings, flow meters and pump motor layout.
 - (f) Design of pump seal systems with separate systems for each pump.
 - (g) Development of temporary by-pass pumping operations specifications.
 - (h) Design of Civil and Municipal services outside the station.
 - (i) Design of force main by-pass pumping connections, to be located in a new manhole assembly(s) on the force main to allow for future access to the connections.
 - (j) Provision of any geotechnical and soil testing reports for use in design and obtaining required construction permits.
 - (k) Provision for hydrological review of groundwater conditions.
 - (l) Preparation of all Tender documents, including the development of separate Tender/Tenders for the procurement of goods and materials with long delivery schedules such as, but not limited to: pumps, pump motors, large diameter gate valves, pipe fittings, flow meters and electrical components. Station design for all pumps, motors and process piping to be completed and reviewed the department prior to tendering goods with long deliveries.
 - (m) Preparation of standardized Schneider Electric equipment, including Motor Control Centres, Variable Frequency Drives along with PLC racks and cards.
 - (n) Provision of resident and non-resident Contract Administration services.
 - (o) Project close-out service.
- E1.1.5 Meetings
- (a) Attend a mandatory meeting with the Design & Construction and Wastewater Services Branches of the Department to review project expectations and limits. The consultant shall ensure that all discipline leads attend the orientation meeting.
 - (b) Attend biweekly design progress meetings with the Design & Construction and Wastewater Services Branches of the Department to review design progress. The

consultant shall ensure that the project manager and all discipline leads attend the biweekly design progress meetings. Meetings will be used to update progress to date, anticipated submittals, any ongoing project issues along with ask questions to City staff.

E1.1.6 Design Services

(a) General

- (i) Allow for a minimum two (2) week review of each submission for review by City staff. Any incomplete submissions will be returned and will require resubmission until stage submission is complete.
- (ii) The Consultant shall ensure all equipment, instrument and PLC signal tags meet the City of Winnipeg Identification Standard.
- (iii) Preparation of a Preliminary Design Report complete with description of each discipline work to be performed. The report shall include high level drawings (such as electrical single line diagrams, plan drawings, elevation details, mechanical schedules, P&ID diagrams, etc.) along with an 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.
- (iv) Prepare a 66% design review submission complete with Drawings List in excel format, Drawings, Specifications, Instrument list, I/O DNP3 mapping list, Control Narrative report, PLC Programming report and Class II estimate.
- (v) Prepare a 99% design review submission complete with Drawings, Specifications, Instrument List, I/O DNP3 mapping list, Control Narrative report, PLC Programming report, Shop Drawing Log Submittal and Class I, pre-tender estimate. The pre-tender estimate must be provided to the Department's contact person for review at least fifteen (15) calendar days prior to tendering. **The project shall not be tendered without this review.**
- (vi) Prepare an arc flash report review submission no later than one (1) month after approval of electrical distribution (MCC, VFD, transformer, panelboard, etc.) shop drawings.
- (vii) All required technical specifications complete with Form B: Unit Prices, to be included with all Tender documents and construction drawing packages.
- (viii) Construction drawings are to have a Department drawing number assigned before the work is tendered. Drawing numbers shall be requested from the Department's contact person.
- (ix) Digital files of the construction drawings shall be provided to the Department's contact person when the work is tendered.
- (x) Provision of appropriate response to bidders and advice to the Department during the periods of tender call and, subject to acceptance by the Department, issuing addenda to the Tender documents.
- (xi) Arrange and attend a tender site investigation during the tendering process.
- (xii) Review Bid Submissions for completeness and prepare Bid Submission tabulations.
- (xiii) If required, arrange for a pre-award meeting(s) with the Department and the lowest qualified Bidder for which the purpose is:
 - To establish that the Contractor has received all the addenda.
 - To ascertain that the Contractor understands the scope of work in the Tender.
 - To determine that the Contractor is capable of meeting the obligations detailed in the Tender.
 - To secure advisement by the Contractor of intended methods, materials, stages, timelines or sequences of the Contract that are of interest to the Department.

- To afford the opportunity for each participant to fulfil the obligation of disclosing any known obstacle(s) to the conduct of the Contract, or of any expectation of significant revision thereof, if known at that time.
 - (xiv) Preparation of reports containing recommendations regarding award of contract and identifying reasons thereof, including identifying and explaining any variations in cost from the original engineer's estimates to the submitted Contractor costs.
 - (xv) Provision of any geotechnical reports and documents required to assist the Department with acquiring any Permits required prior to any construction activities.
 - (xvi) Lead biweekly construction meetings over Microsoft Teams and distribute meeting minutes after each meeting has concluded.
 - (xvii) Each discipline shall perform at minimum monthly construction site inspections to verify construction works conforms with contract documents.
 - (xviii) Review and approval of shop drawings submitted by the Contractor and/or Supplier(s).
 - (xix) Provide the Contractor with assistance in obtaining any required permits necessary for the commencement of construction.
 - (xx) Coordinate with the Contractor, the Department and other relevant parties any commissioning activities required before any components of the Station can be put into active service.
 - (xxi) Witness Contractor commissioning and ensure commissioning forms are filled out.
 - (xxii) Review of Contractor Operations & Maintenance manual for completeness.
 - (xxiii) Provide project close out services and issue sealed Record documents.
- (b) Structural Engineering
- (i) Provide an overall structural review of the existing Station substructure to determine condition, identify and scope any repair work required.
 - (ii) Replace wet well access manhole/vault including new ladder rungs and perform repairs in the wet well as required.
 - (iii) Provide Detailed Design for a new building 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 and a double main entrance door.
 - (iv) Advise if any interior substructure surface repairs are required (i.e.: sand blasting, patching, painting) to floors, walls and ceilings.
 - (v) 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.
 - (vi) Include all steel reinforcing requirements.
 - (vii) Recommend replacement of lower level stairs and hand rail with a staircase or modified staircase such as a "Lapeyre" staircase. If a new staircase can not meet current codes, then a ladder with a middle landing will be required.
 - (viii) Advise on any repairs/re-sizing or relocating existing access hatches and ladders/stairways/walkways (including elevated catwalk) inside the Station, also include replacing any existing access hatch covers with alternative non-corrosive and non-decaying material.
 - (ix) Provision of removable barriers that can be installed around interior floor hatches when hatches are opened.
 - (x) Repairs/replacement as required to wet well ladders, platforms and railings.

- (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) All building code requirements to be satisfied.
 - (xiii) 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.
 - (xiv) Provision for housekeeping pad(s) for MCC's and VFD's.
 - (xv) Provision for new concrete support slabs for new pumps and piping.
 - (xvi) Include design work to properly slope dry well floor so any water drains to the sump pit.
 - (xvii) Ensure that all building upgrades are in compliance with the Manitoba Building Code, latest edition.
- (c) Architectural Design and Details
- (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 non-combustible brick and masonry construction, metal profile gable roof complete with eavestroughs and down spouts along with main 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.
 - (ii) The existing building foundation is to be utilized on the footprint of the new superstructure.
- (d) Mechanical Engineering – Process Pumping and Piping
- (i) Provide design recommendation for replacement of two (2) existing wastewater sewage pumps and pump motors in the “dry-pit” section of the Station with two (2) new pumping units (pumps, motors, driveshafts, guards, etc.)
 - ◆ The existing pump motors are sized as indicated below, the Consultant shall review the desired flow capacities and provide recommended pump motor sizing to achieve the desired flows in the system:
 - ◆ 15 HP
 - ◆ 575 Volt, 3 phase, 60 cycle
 - ◆ Include vibration and temperature analog instruments and tie into PLC Control Panel. Each pump vibration signal shall provide a high vibration alarm to SCADA and a high vibration alarm that locks the pump out in both the manual and automatic modes of pump operation. Note that the vibration lockouts will be jumpered out in the motor controls until the City is comfortable with utilizing the lockouts. Temperature should be for alarming purposes only. Vibration signal shall be brought into motor starter as an analog signal input to a relay. The relay shall have output contact and output analog signal for controls and monitoring. Vibration and temperature monitoring is only required on two (2) bearings, the upper motor bearing (non-drive end side) and the lower pump bearing (drive-end side).
 - (ii) 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.

- The Consultant shall conduct a hydraulic review of the wastewater pumping station system and determine what the maximum allowable flow volume would be without overwhelming the downstream interceptor sewer on Portage Avenue at Conway Street.
 - Consultant shall review peak wet weather flows and size maximum Station capacity accordingly.
 - The new pumps shall be sized as determined by the Consultant but shall have at least a minimum capacity in accordance with the following:
 - 63.0 L/s (999 USgpm) at a Total Dynamic Head determined by the consultant.
 - It is anticipated that one pump running shall provide firm Station capacity to handle Peak Dry Weather Flow (PDWF)
 - It is anticipated that two pumps running shall provide Peak Wet Weather Flows (PWWF).
 - 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 Backup (Local) 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: upper bearings (motor side) set, lower bearings (pump side) set, mechanical seal set, wear rings, gaskets, O-rings, AEGIS ground ring and associated hardware. Include one (1) spare impeller (trimmed to size).
- (iii) Replacement of all existing suction and discharge process piping inside the Station, including all valves and fittings.
- (iv) Shall include design for force main by-pass pumping connections, complete with MH assembly(s).
- (v) Development of temporary by-pass pumping specifications.
- (vi) Provide 24 VDC flow meters on each pump force main piping and tie flow meters into the PLC Control Panel. Each flow meter shall be designed such that they are easy accessible (without the use of a ladder) for maintenance work such as calibration. This would include a catwalk system if the flow meters are installed part way up the dry well area.
- (vii) Provision to remove existing isolation valves and operators in the wet well of the Station and replace with new.
- (viii) Relocation of water meter and backflow prevention device to the main floor elevation. Provide a new water pressure instrument and tie into PLC Control Panel.
- (ix) Replace the sump pump and provide new discharge piping to the wet well. Provide isolation valves and check valve(s) on new discharge piping.
- (x) Shall include development of new hydraulic system curve for Station and shall provide recommendation for proper pump impeller size (based on pumping unit specifications) and pipe diameter size to provide maximum pumping efficiency. Pumps shall be designed to operate full speed at 1200 RPM along with operate on lower adjustable speeds.
- (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.

- (xii) All building codes to be satisfied.
- (e) Mechanical Engineering– HVAC System
 - (i) Review existing HVAC system and make recommendations for new system that should incorporate six (6) continuous Air Changes per Hour (ACH) of seasonally heated ventilation. The Main Floor, 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.
 - (ii) Review Station heat loading for possible Air Conditioning requirements.
 - (iii) The HVAC system should incorporate 75% recirculated air when unoccupied and 100% fresh air when occupied utilizing modulated 0-10V dampers. HVAC control shall be accomplished by standalone HVAC controllers with monitoring status being sent to PLC panel. Electric heat is favoured over gas by the Department.
 - (iv) Propose and design the means to determine Station occupancy, such as consideration to integrate ventilation system with facility light switches.
 - (v) Determine the new HVAC system will adequately fit in the layout of the existing Station building structure.
 - (vi) Provide supplied air to the lower levels of the Station and install ducting and relief dampers as required.
 - (vii) Install modulated dampers with electric actuators on the outdoor air, return and exhaust ducts. Damper status signals shall be designed to be sent to the PLC control panel.
 - (viii) Provide a P&ID diagram of the proposed ventilation system and associated controls for the existing building. Airflow requirements for each room in the Station must be included.
 - (ix) Provide a cooling fan complete with ON/OFF intake and exhaust dampers to remove excess heat generated from motor starters and VFDs. Dampers shall automatically open before cooling fan can run. Tie into fan statuses along with separate dampers fail to open alarms to PLC Control Panel.
 - (x) All building code requirements to be satisfied.
 - (xi) 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.
- (f) Electrical and Instrumentation Engineering
 - (i) Electrical service to station is undersized. Review existing service entrance to receive power supply from Manitoba Hydro and recommend required upgrades including renewing service conduit/overheads to the Station, identifying new pole location and remote metering enclosure. The new service shall be designed such that all facility loads are capable of operating without overloading the service. At least one (1) site visit and one (1) discussion meeting with Manitoba Hydro staff are required to determine the proper service sizing.
 - (ii) Prepare a spring demand load list with both lift pumps running along with new HVAC and miscellaneous electrical loads. The demand load list shall be compared with the existing hydro service and upgraded.
 - (iii) Review and provide analysis on historical pump start frequency data (supplied by the 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 a load assessment for the Station to determine the suitability of the existing common power supply.

- (v) Review the condition of the Customer Service Termination Equipment (CSTE) and advise regarding replacement.
- (vi) Provide design for the 3 ph/600 volt/60 Hz, 4-wire electrical distribution:
 - Propose and design the style of electrical distribution – Motor Control Centre (MCC), panelboard, etc.
 - Include provision for the following:
 - 1) main breaker complete with adjustable Long, Short and Instantaneous (LSI) settings. Main breaker shall be in a service entrance compartment,
 - 2) digital power metering and connected into PLC,
 - 3) pump motor starters complete with VFD's (Note: a hard start of the pump motors must be able in the event a VFD unit failure). Pump motor starters shall include line and load side filters. The following signals are required to be sent to the PLC 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.
 - 4) design power factor correction,
 - 5) provide starter for the 3-phase ventilation fan,
 - 6) Provide starter for the 3-phase cooling fan,
 - 7) provide separate breakers for the 3 phase heating loads,
 - 8) provide a breaker for the 120/240V transformer,
 - 9) Provide for the installation of a Transient Voltage Surge Suppressor (TVSS) with signal tied into the new PLC Control Panel,
 - 10) Provide for the installation of a power fail relay and tie into the new PLC Control Panel with automatic reset,
 - 11) provide spare space for future expansion.
- (vii) Replace existing 120/240V transformer and panelboard.
- (viii) The Consultant shall obtain new short circuit levels from Manitoba Hydro in order to produce the arc flash report.
- (ix) Provide for replacement of the entire station 120/240V wiring, including all lighting, receptacles and conduits. The Main Floor, Motor Room, Pump Room (Dry Well) and Comminutor Chamber all require new lighting and receptacles. All lighting shall be installed in easily accessible locations so lights can be replaced when needed.
- (x) Replace the existing RTU panel with new PLC control panel and in line with Department Standards. Redundant communication to Operation's SCADA system DNP3 communication protocol.
- (xi) Provide 24VDC power for future flowmeter(s) installation.
- (xii) Identify the electrical classification of all areas of the wastewater pumping station, considering the proposed ventilation design and currently accepted standards for wastewater facilities.
- (xiii) Provide a design basis for the following electrical work, including:
 - General and Environmental requirements,
 - Power Factor Correction,
 - Grounding,
 - 600V distribution,

- Motor Starters/VFD's. VFD's shall incorporate speed potentiometer for manual speed adjusted in auto (local) and manual mode,
 - Transformers,
 - Panelboards,
 - Uninterruptible Power Supply for PLC Control Panel, minimum six (6) hour duration,
 - Lighting (interior and exterior) with exterior lighting to be controlled by a 0-10V dimming controller for manual adjustment of light output,
 - Receptacles,
 - Cables and Wiring,
 - Identification of Specific Implementation Requirements,
 - All Electrical and Instrumentation designs must satisfy the criteria of installing three identical pump and motor units inside the Station.
 - Electrical and Instrumentation work the installation of flow metering device(s) with remote monitor.
 - Electrical and Instrumentation work for new Differential Pressure Transmitters for Station level control. Differential pressure transmitters shall be installed on separate site glasses. Two (2) separate transmitters are to be designed such that signals are averaged internally at the PLC and lift pumps can still automatically run when one transmitter fails. Transmitters shall be 100mm flange mounted transmitters with no averaging at the transmitter side, run A or B and monitor for deviation errors with ability to fail over and manually change.
 - Provide redundant level control process meters for differential pressure transmitter signals complete with programmable output relays and 4-20 mA output signals. Provide three (3) position selector switch so the process meters can run the pumps when in Local mode.
 - Provide redundant level site glasses for differential pressure transmitters to be mounted on complete with isolation valves and flushing means.
 - Station to have the ability to run pumping from PLC or local level controllers with PLC fail over to local.
- (xiv) Preparation of a Station Arc Flash study:
- Arc Flash study to be completed using SKM software. SKM library files, report file and single line drawings to be submitted to the City.
 - Arc flash energies to be kept as low as reasonable attainable.
 - Provide arc flash labels for all electrical equipment based upon the Arc Flash study, revised to as-constructed. Arc Flash labels are to be consistent with City Standards and are to be submitted to the City for review before printing.
 - Obtain new short circuit levels for the new station service upgrade from Manitoba Hydro.
 - 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.
 - Submit arc flash study for City review prior to the final sealed report being issued.

- Final arc flash report submission shall include an Engineer sealed pdf report. Provide Word document of arc flash report as part of this submission.
- (xv) All electrical code requirements to be satisfied.
- (xvi) Provide provision to install digital metering inside the Station, alternately this could be installed inside a new CSTE enclosure; however, the new enclosure would require heating in this application.
- (xvii) Identify the requirements for including a new battery-based emergency lighting system, complete with central battery bank, for the Station's interior. Emergency lighting shall turn on when there is a power failure at the station and/or individual lighting circuits lose power.
- (xviii) 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.
- (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.
- (xxi) Provision for a portable generator connection on the exterior of the Station building.
- (xxii) In addition to the final design, the deliverables will include:
 - Single Line Diagram with preliminary arc flash labels including working distance, incident energy and arc flash boundary,
 - Plan layout drawings of electrical distribution within the existing building. Include major automation control panels ensure that HVAC equipment interfaces are accommodated.
- (g) Automation 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 for installation of a Flowmeters, ideally one (1) for each pump, to totalize all Station discharge and make recommendations regarding the type and configuration of the flowmeters.
 - (iii) Make recommendations regarding all the I/O to be utilized.
 - (iv) Design a new redundant level controller system for pump run operations such as a Differential Pressure Transmitters that come with an isolation valve, calibration port and sight glass with drain:
 - 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.
 - Two (2) level controllers are required for the redundant system. Utilize a contact switch on each level controller and tied into the PLC for high wet well level alarm.
 - Transmitters are required to be on separate site glasses.
 - (v) Remove existing Remote Terminal Unit (RTU) panel and provide recommendations for required upgrades to sufficiently run the Station functions. A new Schneider Electric M580 PLC Control Panel shall be designed by the Consultant complete with NOR cards for wireless and wired communications to SCADA operators.
 - New PLC Control Panel shall include two (2) 120 VAC to 24 VDC power supplies with fail monitoring on each.
 - Include a 24 VDC Uninterruptible Power Supply complete with detachable battery pack sized for a minimum of 12AH. UPS shall

include monitoring points: UPS fail alarm, UPS on battery and UPS charging.

- (vi) Provide panel and automation programming design and drawings for inclusion in tender.
- (vii) HVAC shall have its own controller system separate from PLC control. All dampers and equipment status signals shall be monitored by the PLC. 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 the PLC.
- (viii) Provision to include all PLC programming and communication, set up DNP3 mapping including internal PLC variables and establish communication with SCADA.
- (ix) 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 Department during the design review process. The final control narrative shall be provided in a report format and sealed by an Engineer.
- (x) 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.
- (xi) Provide pumping strategy control narrative that considers reducing clogging and ragging of the pumps.
- (xii) Provide the SCADA Operations Centre the ability to remotely select pump run and cycling options. Control narrative shall include operation by HMI touchscreen and remote by SCADA to run the pumps in the reverse direction at low speeds.
- (xiii) Provide recommendations for the type and location of a new room temperature transmitters. The transmitters will be tied into the PLC Control Panel. Provide temperature transmitters for the following areas: Main Floor, Motor Room, Pump Room (Dry Well) along with Comminutor Chamber. Provide recommended low and high temperature setpoints.
- (xiv) 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.
- (xv) 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.
- (xvi) Provide in the design for 600 Volt and 120 Volt power fail monitoring inputs.
- (xvii) Prepare P&ID drawings, following City of Winnipeg standards showing the process and instrumentation for all process, HVAC and miscellaneous services.
- (xviii) Identify and propose other instrumentation as required. Coordinate with the Department regarding PLC and associated control instrumentation.
- (xix) Provide a new wet well high 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. Provide wet well high level status from the PLC Control Panel process meters where the differential pressure switches tie into.
- (xx) Provide new level float switches in the follow areas to monitor for station flooding: pump room (dry well) and Comminutor Chamber. Provide level switch connection for status of each to the PLC.
- (xxi) Provide new level float switch in the Gate Chamber to monitor for CSO weir overflow. Provide level switch connection for status to the PLC.
- (xxii) The station contains an existing CSO equipment panel and existing CSO instruments that will be reused and is currently fed using a 120 VAC power

- feed. The existing CSO signals will be required to be sent to the new PLC Control Panel. The 24 VDC power supply within the CSO Panel shall be removed and a new feed provided by PLC Control Panel 24 VDC UPS system. This will ensure that all CSO instruments are backed up in the event of a power failure. A new 120 VAC feed will also need to be provided to the CSO Panel.
- (xxiii) The Consultant shall prepare and submit Instrument List for City review referencing the applicable specification sections along with drawings that each instrument can be found on.
 - (xxiv) The Consultant shall prepare and submit an input/output (I/O) DNP3 Mapping List for City review including any PLC point locations and any internal PLC generated alarms.
- (h) Civil and Municipal Engineering
- (i) Provide design for new manhole assembly on Station property to permanently house the temporary by-pass connections on the existing force main.
 - (ii) Place of removable and lockable steel bollards in front of the front access door to the Station.
 - (iii) Provision to replace Station water supply line, if required.
 - (iv) Repairs to existing paved surfaces around the Station property, if required.
 - (v) Provision to expand paved surfaces to allow vehicles to turn around, if required.
- (i) PLC Programming Engineering
- (i) The Consultant will be required to Design and Implement complete programming of the new Schneider Electric M580 PLC that will be used. The Consultant will be required to be utilize Schneider Electric Unity Pro for programming of the PLC.
 - (ii) The program shall use function block programming. All branches shall be clearly labelled to indicate what the branch does.
 - (iii) Tag names shall utilize tags provided in the Control Narrative and Construction Documents.
- (j) Cost Estimates
- (i) Provide a Class II cost estimate for the proposed work at the 66% Design Submission.
 - (ii) Provide a Class I cost estimate for the proposed work at the 99% Design Submission.
 - (iii) Provide final Class I cost estimate for the proposed work at the 100% Design (Tender Ready) Submission.

E1.2 Construction Documents

- (a) All drawings are to be drawn in accordance with The City of Winnipeg Manual for Production of Construction Drawings and Departmental requirements.
- (b) 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.
- (c) 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.
- (d) The Department's contact person will provide drawing numbers for the construction drawings prepared by the Consultant.
- (e) All drawings that include plans, elevations and section details are required to be metric scaled with all unique scalebars shown on the drawings.
- (f) 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:
 - (i) Cover sheet showing station location.

- (ii) Drawing index including drawing numbers and titles. Drawings shall be separated out for each discipline.
 - (iii) Shop Drawing Submittal List including all Contractor submittals required along with Specification section and Drawing number reference where submittal can be found.
- (g) The following Structural Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
 - (i) Structural demolition plans and details.
 - (ii) Structural plans and elevations.
 - (iii) MCC and VFD housekeeping pad along with pump and piping support details.
- (h) The following Mechanical Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
 - (i) Mechanical demolition plans
 - (ii) Mechanical plans, elevations including mechanical ventilation design details.
 - (iii) Seal water piping details.
 - (iv) Mechanical schedules (dampers, louvers, heaters, fans, fire extinguishers, etc.) including power requirements for equipment.
- (i) The following 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:
 - (i) Electrical demolition plan and demolition single line
 - (ii) Single line diagram complete with breaker settings table for all breakers with field adjustable settings. Single line diagram shall also be labelled for MCC bucket locations.
 - (iii) Site plan including property lines shown. Manitoba Hydro scope of work along with Contractor scope of work shall be clearly identified.
 - (iv) Hazardous location plan including section view showing all floor levels.
 - (v) Grounding installation details
 - (vi) Electrical plan layout including sections view(s) showing all floor levels to show all electrical instruments, lighting, receptacles, motors and HVAC loads. All lighting and receptacles shall show circuit numbers.
 - (vii) Motor Control Centre(s) elevation details including showing where all pilot devices (lights, push buttons, emergency stops, analog meters, etc.) are located along with all bucket and pilot device equipment lamacoids.
 - (viii) Panel and luminaire schedules clearly showing outdoor lighting and emergency lighting control.
 - (ix) 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 and include bypass starter branch for each pump should Variable Frequency Drives fail.
 - (x) 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.
 - (xi) Setting Letters for Variable Frequency Drives and any other equipment on soft starters. Provide separate sealed setting letters for equipment fed by variable drives and soft starters.
- (j) The following 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:
 - (i) Automation plan drawing showing all automation instruments. Include a section view to show all station floor levels indicating elevations at each level.
 - (ii) 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.

- (iii) PLC power distribution schematic with 120 VAC and 24 VDC distribution clearly separated along with redundant power supplies.
 - (iv) PLC networking block diagram clearly showing how wireless and wired connections are made to the PLC
 - (v) 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.
 - (vi) 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, PLC mode pump control is done through the PLC discrete output card.
 - (vii) HVAC control panel arrangement and bill of materials.
 - (viii) Intrinsically safe junction box arrangement and bill of materials.
 - (ix) Separate loop diagrams for each instrument. For instruments that utilize common controls such as dampers, 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 Temperature Controllers, notes shall be provided to describe operation and reference to applicable loop diagrams.
 - (x) Loop diagram for CSO Panel connections.
 - (xi) 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.
 - (xii) Instrument List including reference to specification section and drawing(s). Clearly identify existing instruments along with new instruments.
 - (xiii) Input/output DNP3 List including internal PLC generated signals including terminal numbers and DNP3 addresses. All internal software signals are required to be indicated as well.
- (k) The following Process Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
- (i) Mechanical HVAC Flow P&ID showing all room areas. 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.
 - (ii) Lift Pumping P&ID(s) including pump duty control setpoints and key elevations (high wet well level, 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.
- (l) The following PLC Programming Construction Documents will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:
- (i) PLC Programming in report format. The PLC Programming report shall include a table of content, 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.

E2. CONTRACT ADMINISTRATION SERVICES

E2.1 Non-Resident Services

- (a) 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.
- (b) Consultation with and advice to the Department during the course of construction.

- (c) Coordinate and conduct a pre-construction meeting with all other relevant parties in attendance and provide minutes of meeting to all in attendance and those to be copied.
- (d) Review and acceptance of shop drawings and manufacturers' drawings supplied by the Contactor or supplier to ensure to the Department that the shop drawings are in conformance to the contract Drawings and Specifications, without relieving the Contractor of his contractual and legal obligations in respect thereof.
- (e) Review and report to the Department upon laboratory, shop and other tests conducted upon materials and /or equipment placed or installed by the Contractor to ensure to the Department conformance to the contract Drawings and Specifications, without relieving the Contractor of his contractual and legal obligations in respect thereof.
- (f) Acceptance of alternate materials and methods, subject to prior acceptance by the Department, without relieving the Contractor of his contractual and legal obligations in respect thereof.
- (g) 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.
- (h) 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.
- (i) Furnish copies to the Department of all significant correspondence relating directly or indirectly to the project by parties external to the Consultant's Contract Administrator (Contract Administrator).
- (j) Submit to the Department, prior to construction, a 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.
- (k) Consultant billings are to indicate the fee breakdown for the submitted invoice as well as the total fees to date.
- (l) Billings are to be adjusted to indicate the 2% of the actual construction value holdback until as-constructed drawings have been submitted. Invoices submitted without this breakdown will be returned.
- (m) Approved allowable disbursements and laboratory testing costs are to be shown as separate sub-totals from the fee charges.
- (n) Assist the Contractor in obtaining applicable building permits (including electrical, mechanical, structural, new building construction, etc.).
- (o) The Consultant will be required to attend the Factory Acceptance Testing (FAT) to be performed at the supplier shop who will be constructing the new PLC Control Panel. If the supplier shop is located in Winnipeg then the Consultant will attend in person if restrictions allow. Otherwise the Consultant will be required to attend virtually over Microsoft Teams.

E2.2 Resident Services

- (a) 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.
- (b) Ensure that Quality Assurance/Quality Control (Qa/Qc) is undertaken to Building Code requirements and Departmental standards.
- (c) 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 his/her designate as well as the on-site Inspector, the Contractor and the 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 during virtual

- (d) Arrange for biweekly construction meetings over Microsoft Teams between the Consultant (including all key personnel), City staff and Contractor staff.
- (e) 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.
- (f) Without relieving the Contractor of his contractual and legal obligations in respect thereof, conduct detailed inspection of construction sufficient to ensure that the Work carried out by the Contractor is in conformance with the Drawings and Specifications.
- (g) 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.
- (h) Reports are to be promptly made the Department's contact person regarding unusual or changed site conditions which may or will result in extra work to the project.
- (i) All extra work to the project must be reviewed and approved by the Department's contact person prior to approval being given to the Contractor to undertake the Work.
- (j) Extra work to the project shall not exceed 20% of the awarded contract amount to a maximum of \$250,000.00. The Contract Administrator will be responsible to project final construction costs throughout the duration of the project to ensure the project remains with the budget allowance.
- (k) 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.
- (l) In conjunction with the Department, provision of advance notice to adjacent residents and businesses who will have public services and/or access disruptions during construction.
- (m) 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 his contractual and legal obligations in respect thereof.
- (n) Acting in the interest of the Department, provide responsible, sensitive and prompt reaction to the reasonable requests and complaints of citizens regarding the conduct of the project.
- (o) Arranging for and carrying out testing of materials to ensure conformance with the Drawings and Specifications, without relieving the Contractor of his contractual and legal obligations in respect thereof.
- (p) The Consultant will be required to test each I/O point and the Control Logic of the new PLC once installed at the station back to SCADA.
- (q) The Consultant will be required to attend commissioning site visits to ensure proper testing is performed. Prepare and submit 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.
- (r) 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.

E2.3 Final Inspections and Project Acceptance

- (a) As coordinated with the Department's contact person and the Contractor, provide inspection of the completed Works to establish the project milestones of Substantial Performance, Total Performance, and Final Acceptance of the completed project.

- (b) Complete and submit record documents of the completed mechanical, electrical, automation, process, structural, and civil works to the Department contact for review within two (2) months from the date of project construction work reaching Total Performance.
- (c) Coordinate with the Installation Contractor and Equipment Supplier for all required site testing and commissioning services.
- (d) Coordinate with the Installation Contractor and Equipment Supplier to provide a minimum of four (4) on-site training sessions to provide instruction to City staff on the safe operation of all new equipment including recommended maintenance tasks and schedules.
- (e) Review and acceptance of O&M manual submissions.
- (f) 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.
- (g) Assist the Contractor in closing out the applicable building permits (electrical, mechanical, structural, building occupancy, etc.).
- (h) Provide sealed Arc Flash Study report including SKM model, incident energy, protective device coordination with time current curves (TCCs) and short-circuit duty information.
- (i) Perform a warranty inspection site visit approximately eleven (11) months after the date of Substantial Completion has been achieved with the Contractor and City staff. Prepare and submit a deficiency report and arrange for the Contractor to have the deficient items addressed.

E2.4 Record Documents

- (a) All sealed Construction documents produced for the project are required to be updated to become sealed Record Drawings. The Record Drawings shall include all changes from the final construction work.
- (b) The preliminary record document submission is to consist of a drawing transmittal letter to the Department's Supervisor of Drafting & Graphic Services, copied to the Department's contact person, and along with one (1) complete set of full-size (A1) drawings prints for the Works.
- (c) The final record documents are to be sealed by a Professional Engineer with tracked document revision history.
- (d) Record drawings are to 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 (Substantial Performance),
 - (iv) Installation Contractor.
- (e) The reviewed record documents will be returned with comments (if any) for completion. Once all revisions have been made, submit one (1) complete set of full size (A1) drawing mylars for the Works, complete with the preliminary prints with comments, and the digital AutoCAD file for each record drawing to the Department's Supervisor of Drafting & Graphic Services. The digital drawing file 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.
- (f) Record documents shall include:
 - (i) Variable Frequency Settings Letters,
 - (ii) Control Narrative Report,
 - (iii) PLC Programming Report,
 - (iv) Arc Flash Report

APPENDIX A – CONWAY WASTEWATER PUMPING STATION HISTORICAL RECORD DRAWINGS

DRAWINGS

- 1-0131-A-A0201-001
- 1-0131-A-A0202-001
- 1-0131-A-A0202-002
- 1-0131-A-A0203-001
- 1-0131-A-A0204-001
- 1-0131L-G0001-001
- 404
- 404A
- 404B
- 445
- S-267

APPENDIX B – WASTEWATER LIFT STATION CONDITION ASSESSMENT PHASE II - DOCUMENT VII: CONWAY LIFT STATION ASSESSMENT

APPENDIX C – CONWAY LIFT STATION HOIST DEVICES AND LIFTING CAPACITIES REPORT

APPENDIX D – DEFINITION OF PROFESSIONAL CONSULTANT SERVICES (CONSULTING ENGINEERING SERVICES)