THE CITY OF WINNIPEG

REQUEST FOR PROPOSAL

RFP NO. 864-2025

PROFESSIONAL CONSULTING SERVICES FOR THE SOUTHWEST SEWER CATCHMENT AREA UPGRADES - DETAILED DESIGN AND CONTRACT ADMINISTRATION SERVICES

TABLE OF CONTENTS

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 PROFESSIONAL CONSULTING SERVICES FOR THE SOUTHWEST SEWER CATCHMENT AREA UPGRADES - DETAILED DESIGN AND CONTRACT ADMINISTRATION SERVICES

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, February 19, 2026.

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

B3. BIDDER CONFERENCE

B3.1 The Consulting Contract Administrator or an authorized representative will conduct a bidder conference on:

(a) Tuesday January 27, 2026, beginning at 9:30 am.

B3.2 The bidder conference will allow the Contract Administrator or an authorized representative to discuss the Work detailed in this RFP. The bidder conference will also allow Proponent's to present questions to the Contract Administrator or other City of Winnipeg staff in regards to the RFP.

B3.3 Proponents are requested to register for the site investigation by contacting the Consulting Contract Administrator identified in D2.

B3.4 Proponents must attend the bidder conference via teleconference.

(a) Teleconference contact number or online contact link is to be provided to Proponents upon registration as per B3.3.

B3.5 Although attendance at the Bidder Conference is not mandatory, the City strongly suggests that Proponents attend.

B3.6 The Proponent shall not be entitled to rely on any information or interpretation received at the bidder conference unless that information or interpretation is the Proponent's direct observation, or is provided by the Consulting Contract Administrator in writing.

B3.7 An Addendum will be issued following the bidder conference documenting the major items discussed along with any questions asked.

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 they have received all addenda and is advised to check the MERX website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B6.5 The Proponent shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid/Proposal. Failure to acknowledge receipt of an addendum may render a Proposal non-responsive.

B6.6 Notwithstanding B4, enquiries related to an Addendum may be directed to the Consulting Contract Administrator indicated in D2.

B7. PROPOSAL SUBMISSION

B7.1 The Proposal shall consist of the following components:

(a) Form A: Bid/Proposal (Section A) in accordance with B8;

(b) Fees (Section B) in accordance with B9.

B7.2 The Proposal should also consist of the following components:

(a) Form P: Person Hours in accordance with B9.3 and B9.5.

(b) Experience of Proponent and Subconsultants (Section D) in accordance with B10;

(c) Experience of Key Personnel Assigned to the Project (Section E), in accordance with B11;

(d) Project Understanding and Methodology (Section F) in accordance with B12; and

(e) Project Schedule (Section G) in accordance with B13.

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 B22.1(a).

B7.8 Any cost or expense incurred by the Proponent that is associated with the preparation of the Proposal shall be borne solely by the Proponent.

B8. PROPOSAL (SECTION A)

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

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

(a) if the Proponent is a sole proprietor carrying on business in their own name, their name shall be inserted;

(b) if the Proponent is a partnership, the full name of the partnership shall be inserted;

(c) if the Proponent is a corporation, the full name of the corporation shall be inserted;

(d) if the Proponent is carrying on business under a name other than their own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

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

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

B8.4 Paragraph 13 of Form A: Bid/Proposal shall be signed in accordance with the following requirements:

(a) if the Proponent is a sole proprietor carrying on business in their own name, it shall be signed by the Proponent;

(b) if the Proponent is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;

(c) if the Proponent is a corporation, it shall be signed by their duly authorized officer or officers;

(d) if the Proponent is carrying on business under a name other than their own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

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

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

B9. FEES (SECTION B)

B9.1 The Proposal shall include a Fixed Fee for all disciplines and/or phases identified in D4 Scope of Services.

(a) Project Management (D7);

(b) Consultant Progress Reports (D8);

(c) Engagement Consultations and Heritage Resource Work (D9);

(d) Wastewater Hydraulic Modelling Services (D10);

(e) Contract 1 – River Crossing Twin Force Mains
  (i) Detailed Engineering Design (D11, D12);
  (ii) Construction Documents (D17, D18);
  (iii) RFQ and Procurement Process (D21, D22);
  (iv) Contract Administration Services – Non-Resident (D24);
  (v) Contract Administration Services – Resident (D26);
  (vi) Contract Administration Services – Resident Tunnel Drive Site Hours (D27);
  (vii) Record Documents and Project Closeout (D32);

(f) Contract 2 – Downstream Gravity Sewer Interceptor
  (i) Detailed Engineering Design (D11, D13);
  (ii) Construction Documents (D17, D18);
  (iii) RFQ and Procurement Process (D21, D22);
  (iv) Contract Administration Services – Non-Resident (D24);
  (v) Contract Administration Services – Resident (D26);
  (vi) Contract Administration Services – Resident Tunnel Drive Site Hours (D28);
  (vii) Record Documents and Project Closeout (D32);

(g) Contract 3 – Linacre Lift Station
  (i) Detailed Engineering Design (D11, D14);
  (ii) Construction Documents (D17, D19);
  (iii) RFQ and Procurement Process (D21, D22);
  (iv) PLC & HMI Controller Programming (D23);
  (v) Contract Administration Services – Non-Resident (D24);
  (vi) Factory Acceptance Testing (D25);
  (vii) Contract Administration Services – Resident (D26);
  (viii) Contract Administration Services – Resident Site Hours (D29);
  (ix) Commissioning (D30.6);

(x) Record Documents and Project Closeout (D32, D33);

(h) Contract 4 – Upstream Sewer Work
  (i) Detailed Engineering Design (D11, D15);
  (ii) Construction Documents (D17, D18);
  (iii) Procurement Process (D22);
  (iv) Contract Administration Services – Non-Resident (D24);
  (v) Contract Administration Services – Resident (D26);
  (vi) Contract Administration Services – Resident Tunnel Drive Site Hours (D29.3);
  (vii) Record Documents and Project Closeout (D32);

(i) Contract 5 – Kilkenny Lift Station Demolition
  (i) Detailed Engineering Design (D11, D16);
  (ii) Construction Documents (D17, D20);
  (iii) Procurement Process (D22);
  (iv) Contract Administration Services – Non-Resident (D24);
  (v) Contract Administration Services – Resident (D26);
  (vi) Record Documents and Project Closeout (D32);

(j) Heritage Work Allowance (D34);

(k) Geotechnical Work Allowance (D35);

(l) Additional Work Allowance (D36).

B9.2 The Proposal shall include a Time-Based Fee schedule for the following sections identified in D4 – Scope of Services.

(a) Resident Services Site Hours in accordance with (D27, D28, D29 and D30);
  (i) Time-Based Fees shall be based time estimates and hourly billing rates for each person assigned for the on-site construction inspection and acceptance services.
  (ii) For Proposal purposes these fees shall be based on the following hours of site hours:
    - Contract 1 – River Crossing Twin Force Mains (4100 hours)
    - Contract 2 – Downstream Gravity Sewer Interceptor (5400 hours)
    - Contract 3 – Linacre Lift Station (3400 hours)
    - Contract 4 – Upstream Sewer Work (1700 hours)
  (iii) The proposed fee should include an allowance for disbursements, including vehicle, electronic communication, etc.
  (iv) The number of hours listed in B9.2(a)(ii) is to be considered approximate only. The City will use this number for comparing bids.
  (v) The number of hours for which payment will be made to the Proponent for resident services is to be determined by the actual number of hours worked by the Proponent.

B9.3 The Proposal should include Form P: Person Hours showing the hourly breakdown and assigned Key Personnel for each Fixed Fee item of work identified in B9.1 and B9.2.

(a) The Proponent's Form P: Person Hours sub task totals shall match the Fixed Fee items for work identified in B9.1 and B9.2.

B9.4 The hourly rate schedule for Key Personnel in Form P: Person Hours will be utilized where required for the work identified in D34 Heritage Work, D35 Geotechnical Work and D36 Additional Work.

B9.5 The Proponent shall include in their Proposal:

(a) Heritage Work Allowance of $300,000.00 on Form B: Fees and Form P: Person Hours;

(b) Geotechnical Work Allowance of $500,000.00 on Form B: Fees and Form P: Person Hours; and

(c) Additional Work Allowance of $500,000.00 on Form B: Fees and Form P: Person Hours.

B9.5.1 The Heritage Work Allowance, Geotechnical Work Allowance and Additional Work Allowance shall only be used with the written permission of the Consulting Contract Administrator.

B9.6 Adjustments to Fees will only be considered based on increases to the Scope of Services.

B9.6.1 The City will not consider an adjustment to the Fees based on changes in the Project budget or the Final Total Construction Cost.

B9.7 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.

B9.8 The Fee Proposal shall include a Heritage Work Allowance for Allowable Disbursements as defined in C1.1(b), but shall exclude the costs of any heritage work, site digging and investigation during construction.

B9.9 The Fee Proposal shall include a Geotechnical Work Allowance for Allowable Disbursements as defined in C1.1(b), but shall exclude the costs of any geotechnical work, soils and material investigation, drilling, site digging and investigation during construction.

B9.10 The Fee Proposal shall also include an Additional Work Allowance for Allowable Disbursements as defined in C1.1(b), but shall exclude the costs of any Underground Structures work, materials testing, soils and hazardous materials investigation during construction.

B9.11 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.

B9.12 Payments to Non-Resident Consultants are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B9.12.1 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 D51. Any such costs shall be determined in accordance with D51.

B10. EXPERIENCE OF PROPONENT AND SUBCONSULTANTS (SECTION C)

B10.1 Proposals should include:

(a) Details demonstrating the history and experience of the Proponent in providing programming; design, management of the project and contract administration services on three (3) projects of similar complexity, scope and value.

(b) A maximum of three (3) similar projects. Should the Proponent prepare more than three (3) project references, only the first three (3) project references will be considered for evaluation.

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

(a) Location of the project (street, city and province);

(b) Project owner;

(c) Pictures of the project (including beginning and end of project);

(d) Description of the project;

(e) Role of the consultant;

(f) Any other Consultant’s on the project and their role otherwise identify no other Consultants used;

(g) Proponent's original cost and final cost;
  (i) Any deviations between original and final costs shall clearly describe the differences.

(h) Project's original construction cost and final cost;
  (i) Any deviations between original and final costs shall clearly describe the differences.

(i) Design and Construction schedule (anticipated Project schedule and actual project delivery schedule, showing design separately) including the following:
  (i) Detailed Design Award
  (ii) 100% Design Completion;
  (iii) Total Performance;
  (iv) Project Closeout (Record / As-Built Drawings Submitted)
  (v) Any deviations between original and final schedules shall clearly describe the differences.

(j) Project owner reference information (two current names, position titles, telephone numbers and email addresses per project);

(k) General Contractor company name.

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 to include all Key Personnel listed in B11.2.

B11.2 Identify the following Key Personnel assigned to the Project:

(a) Project Manager;

(b) Contract Administrator for each construction contract:
  (i) Non-Resident;
  (ii) Resident.

(c) Automation Lead;

(d) Civil / Municipal Lead;

(e) Electrical Lead;

(f) Geotechnical Lead;

(g) Mechanical Lead;

(h) PLC Programming Lead;

(i) Process Lead;

(j) Structural Lead; and

(k) Tunnelling Lead.

B11.3 Multiple Key Personnel positions may be filled by one individual, however for evaluation purposes, be sure to identify the experience and qualification for each role separately.

B11.4 Submit the experience and qualifications of the Key Personnel assigned to the Project for projects of similar complexity, scope and value, including the principals-in-charge, the Consultants Representative, managers of the key disciplines and lead designers. Roles of each of the Key Personnel in the Project should be identified in the organizational chart referred to in B11.1.1.

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

(b) Short writeup of the person and why they would be good fit for project key person role;

(c) Educational background and degrees;

(d) Professional designations along with registration with Engineers Geoscientists Manitoba (for any personnel identified as Lead Engineer positions);

(e) Identify each proposed discipline Lead Engineer that is registered with Engineers Geoscientists Manitoba.

(f) Current job title;

(g) Years of experience in current position;

(h) Years of experience in design and construction administration services; and

(i) Years of experience with current employer.

B11.5 For each person identified, list at least two (2) comparable projects in which they have played a primary role similar to that proposed for this Project. If a project selected for a key person is included in B10, provide only the project name and the role of the key person. For other projects provide the following:

(a) Location of project (street, city and province);

(b) Project Owner;

(c) Description of project;

(d) Role of the person;

(e) Reference information (two current names with position titles, telephone numbers and email addresses per project).

B12. PROJECT UNDERSTANDING AND METHODOLOGY (SECTION E)

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

B12.2 Methodology should be presented in accordance with the Scope of Services identified in D4.

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 Proponent's understanding of the project;

(b) The Proponent's approach and methodology to complete the work;

(i) Proponent's should carefully provide details for how the scope of services items will be accomplished rather the rewording the RFP scope items.

(c) The Proponent's understanding of Standardized City Equipment to be used on this project;

(d) The Proponent's understanding of the City Design Guidelines and how they will be used on this project;

(e) The codes, standards and regulations at minimum that would apply (including governing organization, code / standard number, latest edition and title);

(f) Any innovations to be used to perform the services;

(g) Any location specific issues;

(h) Any perceived project risks and challenges along with how they will be overcome;

(i) Risk and Quality Management Systems to be used on the project;

(j) Any schedule monitoring and control systems to be used on the project to ensure the Proponent remains on schedule. Proponents should address actions to be taken when the engineering design schedule starts to slip;

(k) Any cost monitoring and control systems to be used on the project to ensure the Proponent remains on budget;

(l) How cost over runs will be communicated to the City and be handled by the Proponent;

(m) Any activities and services to be provided by the City;

(n) The Project methodology with respect to the information provided within this RFP and the City's Project Management Manual at http://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#2 and templates at http://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#4 that would be used on the project; and;

(o) Any other issue that conveys your team's understanding of the Project requirements.

B12.5 The Proposal should include Form P: Person Hours for all disciplines and or phases identified in D4 Scope of Services. Fee estimates should be subtotaled for each phase work activity defined in D4.1 and in total for each individual identified in B11.2. Form P: Person Hours should show the charge out rates for each project personnel, the total hourly breakdown for each task and assigned Key Personnel for each Fixed Fee and Hourly item of work identified in B9.1.

B12.5.1 The total Fees on Form P: Person Hours should match Fees submitted in response to B9.

B12.6 Proponents may use Form P: Person Hours included or a table of their own design provided it includes all information requested in accordance with B12.5.

B12.7 The Proposal shall include Form P: Person Hours showing the charge out rates for each project personnel, the total hourly breakdown for each task and assigned Key Personnel for each Fixed Fee item of work identified in B9.1.

(a) The total Fees on Form P: Person Hours should match Fees submitted in response to B9.

B12.8 The Proponent shall submit a list of charge out rates for each generic project position (i.e. Project Manager, Lead Discipline Engineer, Discipline Drafter). For any unforeseen work, the Proponent will be allowed pending City approval to include additional work as part of Additional Work Allowances.

(a) The Proponent shall clearly show rate adjustments for five (5) consecutive years for each generic position to be used. If the Proponent does not indicate any rate adjustments with their Bid, the specified rates from Form P: Person Hours shall be used for up to five (5) consecutive years.

B13. PROJECT SCHEDULE (SECTION F)

B13.1 The Proponent should include a key project schedule table indicating the following milestone dates:

(a) Award of Contract;

(b) Technical Memorandums;

(c) 60% Design Submissions for all Contracts;

(d) 95% Design Submission for all Contracts;

(e) 100% Design Submission for all Contracts;

(f) RFQ Tender Period on MERX for all Contracts;

(g) Construction/ Demolition Tender Period on MERX for all Contracts;

(h) Construction Tender Closing for all Contracts;

(i) Award of Construction Contract for all Contracts;

(j) All Shop Drawings Reviewed and Approved for all Contracts;

(k) New Lift Pumps in Service Contract 4 only;

(l) Commissioning Completed Contract 4 only;

(m) Substantial Performance for all Contracts;

(n) Total Performance for all Contracts;

(o) Project Closeout (include Record Documents Received) for all Contracts; and

(p) Any Other Critical Stages for all Contracts.

B13.2 Proponents should present a carefully considered Critical Path Method (GANTT Chart) schedule using Microsoft Project or similar project management software, complete with resource assignments (key designers), durations (monthly timescale) and milestone dates or events. The schedule should address each requirement of the Scope of Services.

(a) Each task listed should include a description, start date, finish date along with duration of in number of days.

(b) The Proponent should include for two (2) week project blackout dates for City staff during Christmas holidays of each fiscal year and should be shown on the project schedule.

(c) The Proponent should include heritage site work and preparation of heritage reports for Contracts

(i) Heritage site digging can only be performed during frost free and snow free conditions (typically May 1 – September 30).

(d) The Proponent should allow for December 1 to March 15 (cold temperatures) blackout dates for construction of underground pipe work (Contracts 1, 2 & 4 only).

(e) Construction/Demolition Contracts to separated out and include:

(i) RFQ Posted Period (Contracts 1, 2 and 3 only);

(ii) RFQ Successful / Unsuccessful Letters Sent Out (Contracts 1, 2 and 3 only);

(iii) Tender Posted Period;

(iv) Award of Contract;

(v) Site Work Begins;

(vi) Commissioning (Contract 3 only);

(vii) Substantial Performance;

(viii) Total Performance;

(ix) Project Closeout;

B13.3 The Proponent's schedule should include critical dates for review and approval processes by the City and other organizations anticipated during the design and tendering phases of the Project. Reasonable times should be allowed for completion of these processes.

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

(b) It is anticipated that each construction contract award will require five (5) weeks to award the work after the tender period has closed.

(i) An additional eight (8) weeks for the Tender award period for Construction Contracts 1, 2 and 3 as the award value will exceed $10,000,000.00. The additional time is for Standing Policy Committee approval of the award report.

B13.4 Due to funding requirements, only one (1) construction/demolition contract can be put out each year, starting in 2027. RFQs should be tendered for four (4) weeks. Construction Contracts 1, 2 and 3 should be tendered for five (5) weeks. Construction Contract 4 and Demolition Contract 5 should be tendered for four (4) weeks. The Proponent's schedule should allow for each Construction / Demolition Contract as follows and listed in Appendix A:

(a) Construction Contract 1 (River Crossing Twin Force Mains) RFQ to close by November 30, 2026 and Tender to close by February 17, 2027;

(b) Construction Contract 2 (Downstream Gravity Sewer Interceptor) RFQ to close by October 13, 2027 and Tender to close by December 13, 2027;

(c) Construction Contract 3 (Linacre Lift Station) RFQ to close by October 5, 2028 and Tender to close by December 12, 2029;

(d) Construction Contract 4 (Upstream Gravity Sewers) Tender to close by December 12, 2029;

(e) Demolition Contract 5 (Kilkenny Lift Station Demolition) Tender to close by February 9, 2032;

B14. DISCLOSURE

B14.1 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.

B14.2 The Persons are:

(a) KGS Group.

B14.3 Additional Material:

(a) The following Background Documents were produced by KGS Group in the period from 2020 to 2025 as part of the Conceptual and Preliminary Design Phases of this project:

(i) SW Sewer Catchment Regional Upgrades Design – Conceptual Design Report

(ii) SW Sewer Catchment Regional Upgrades Design – Preliminary Design Report

(iii) SW Sewer Catchment Regional Upgrades Design – Preliminary Design Report and Detriment Analysis Results Spreadsheets

(iv) Technical Memorandum: SW Sewer Catchment Regional Upgrades Design – Load Shedding

(v) Technical Memorandum: Hydraulic Model Update Requirements SW Sewer Regional Upgrades

(vi) Technical Memorandum: SW Sewer Catchment Regional Upgrades – Model Update TM Rev B

(vii) Technical Memorandum: SW Sewer Catchment Regional Upgrades – Future Flows Update and Impacts to PD Solution – Final Rev 1

(viii) Technical Memorandum: SW Sewer Catchment Regional Upgrades – Flood Scenario & Load Shedding Rev A

(ix) Province of Manitoba Memorandum - Winnipeg Southwest Sewer Catchment Upgrade Heritage Screening

(x) Southwest Sewer Catchment Regional Upgrade Design, Linacre Pump Station, RL-0107-NO Heritage Resource Impact Assessment

(xi) Southwest Sewer Catchment Regional Upgrade Design, Maple Grove Park, RL-0108-NO Heritage Resource Impact Assessment

(b) KGS Group also produced updates to the City of Winnipeg InfoWorks Hydraulic Model representation listed D10.4, which will be made available to all Consultants to be used during the Detailed Design Phase of this project.

(i) No further updates to the model representation outside of refinements to the solution representation in the model are identified in the project Scope of Work.

(c) KGS Group completed Heritage work listed in sections D34.3 and D34.4.

(d) KGS Group completed Geotechnical work performed as part of Preliminary Design Report

B15. CONFLICT OF INTEREST AND GOOD FAITH

B15.1 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.

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

(a) other commitments;

(b) relationships;

(c) financial interests; or

(d) involvement in ongoing litigation;

that could or would be seen to:

(i) exercise an improper influence over the objective, unbiased and impartial exercise of the independent judgment of the City with respect to the evaluation of Proposals or award of the Contract; or

(ii) compromise, impair or be incompatible with the effective performance of a Proponent's obligations under the Contract;

(e) has contractual or other obligations to the City that could or would be seen to have been compromised or impaired as a result of their participation in the RFP process or the Project; or

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

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

(a) avoid any perceived, potential or actual Conflict of Interest in relation to the procurement process and the Project;

(b) upon discovering any perceived, potential or actual Conflict of Interest at any time during the RFP process, promptly disclose a detailed description of the Conflict of Interest to the City in a written statement to the 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.

B15.4 Without limiting B15.2, the City may, in their sole discretion, waive any and all perceived, potential or actual Conflicts of Interest. The City's waiver may be based upon such terms and conditions as the City, in their sole discretion, requires to satisfy itself that the Conflict of Interest has been appropriately avoided or mitigated, including requiring the Proponent to put into place such policies, procedures, measures and other safeguards as may be required by and be acceptable to the City, in their sole discretion, to avoid or mitigate the impact of such Conflict of Interest.

B15.5 Without limiting B15.2, and in addition to all contractual or other rights or rights at law or in equity or legislation that may be available to the City, the City may, in their sole discretion:

(a) disqualify a Proponent that fails to disclose a perceived, potential or actual Conflict of Interest of the Proponent or any of their Key Personnel;

(b) require the removal or replacement of any Key Personnel proposed for the Services that has a perceived, actual or potential Conflict of Interest that the City, in their sole discretion, determines cannot be avoided or mitigated;

(c) disqualify a Proponent or Key Personnel proposed for the Services that fails to comply with any requirements prescribed by the City pursuant to B15.3(a) to avoid or mitigate a Conflict of Interest; and

(d) disqualify a Proponent if the Proponent, or one of their Key Personnel proposed for the Project, has a perceived, potential or actual Conflict of Interest that, in the City's sole discretion, cannot be avoided or mitigated, or otherwise resolved.

B15.6 The final determination of whether a perceived, potential or actual Conflict of Interest exists shall be made by the City, in their sole discretion.

B16. QUALIFICATION

B16.1 The Proponent shall:

(a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Proponent does not carry on business in Manitoba, in the jurisdiction where the Proponent does carry on business; and

(b) be financially capable of carrying out the terms of the Contract;

(c) have all the necessary experience, capital, organization, and equipment to perform the Services in strict accordance with the terms and provisions of the Contract;

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

B16.2 The Proponent and any proposed Subconsultant (for the portion of the Services proposed to be subcontracted to them) shall:

(a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Purchasing Division website at https://winnipeg.ca/finance/findata/matmgt/listing/debar.pdf

B16.3 The Proponent and/or any proposed Subconsultant (for the portion of the Services proposed to be subcontracted to them) shall:

(a) have successfully carried out services for the programming; design, management of construction and contract administration for architectural and/or engineering projects of similar complexity, scope and value; and to those required for this Project; and

(b) be fully capable of performing the Services required to be in strict accordance with the terms and provisions of the Contract;

(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 B16.4 and D37D5.2).

B16.4 Further to B16.3(f), the Proponent acknowledges that they and all Subconsultants have obtained training required by the Accessibility for Manitobans Act (AMA) available at https://accessibilitymb.ca/resources-events-and-training/online-training.html for anyone that may have any interaction with the public on behalf of the City of Winnipeg.

B16.5 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.

B16.6 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.

B17. OPENING OF PROPOSALS AND RELEASE OF INFORMATION

B17.1 Proposals will not be opened publicly.

B17.2 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.

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

B17.3.1 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. IRREVOCABLE OFFER

B18.1 The Proposal(s) submitted by the Proponent shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid/Proposal.

B18.2 The acceptance by the City of any Proposal shall not release the Proposals of the other responsive Proponents and these Proponents shall be bound by their offers on such Services for the time period specified in Paragraph 11 of Form A: Bid/Proposal.

B19. WITHDRAWAL OF OFFERS

B19.1 A Proponent may withdraw their Proposal without penalty prior to the Submission Deadline.

B20. INTERVIEWS

B20.1 The Consulting Contract Administrator may, in their sole discretion, interview Proponents during the evaluation process. The Proponent would be required to attend a Pre-Award meeting to confirm they understand the contract details and confirm they have the resources to meet schedule. The Consulting Contract Administrator would run the Pre-Award meeting and prepare meeting minutes.

B21. NEGOTIATIONS

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

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

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

B22. EVALUATION OF PROPOSALS

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

(a)	compliance by the Proponent with the requirements of the Request for Proposal or acceptable deviation therefrom:	(pass/fail)
(b)	qualifications of the Proponent and the Subconsultants, if any, pursuant to B16:	(pass/fail)
(c)	Fees; (Section B)	20%
(d)	Experience of Proponent and Subconsultant; (Section C)	20%
(e)	Experience of Key Personnel Assigned to the Project; (Section D)	30%
(f)	Project Understanding and Methodology (Section E)	25%
(g)	Project Schedule. (Section F)	5%

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

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

B22.4 If, in the sole opinion of the City, a Proposal does not achieve a pass rating for B22.1(a) and B22.1(b), the Proposal will be determined to be non-responsive and will not be further evaluated.

B22.5 Further to B22.1(c), Fees will be evaluated based on Fees submitted in accordance with B9.

B22.5.1 For evaluation purposes only, where Fees include a cash allowance, the cash allowance shall be removed from the total Fees for the calculation of price points

B22.6 Further to B22.1(c), the Award Authority may reject a Proposal as being non-responsive if it exceeds the funds available as shown in D4.3.

B22.7 Further to B22.1(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.

B22.8 Further to B22.1(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.

B22.9 Further to B22.1(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.

B22.10 Further to B22.1(g), Project Schedule will be evaluated considering the Proponent’s ability to comply with the requirements of the Project, in accordance with B13.

B22.11 Notwithstanding B22.1(d) to B22.1(g), 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.

B22.12 Proposals will be evaluated considering the information in the Proposal Submission and any interviews held in accordance with B20.

B22.13 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.

B23. AWARD OF CONTRACT

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

B23.2 The City will have no obligation to award a Contract to a Proponent, even though one or all of the Proponents are determined to be qualified, and the Proposals are determined to be responsive.

B23.2.1 Without limiting the generality of B23.2, the City will have no obligation to award a Contract where:

(a) the prices exceed the available City funds for the Services;

(b) the prices are materially in excess of the prices received for similar services in the past;

(c) the prices are materially in excess of the City's cost to perform the Services, or a significant portion thereof, with their own forces;

(d) only one Proposal is received; or

(e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B23.3 Where an award of Contract is made by the City, the award shall be made to the qualified Proponent submitting the most advantageous offer.

B23.4 The City may, at their discretion, award the Contract in phases.

B23.5 Further to B23.4 where future phases are identified in D4 Scope of Services, the City reserves the right to negotiate and award future phases to the successful Proponent.

B23.6 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

B23.6.1 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.

B23.7 The form of Contract with the City of Winnipeg will be based on the Contract as defined in C1.1(v).

B23.8 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 D51 shall immediately take effect upon confirmation of such funding, regardless of when funding is confirmed.

B23.9 Following the award of Contract, a Proponent will be provided with information related to the evaluation of their Proposal upon written request to the Consulting Contract Administrator.

B23.10 If, after the award of Contract, the Project is cancelled, the City reserves the right to terminate the Contract. The Proponent will be paid for all Services rendered up to time of termination.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

C0.1 The *General Conditions for Consultant Services* (Revision 2022-09-02) are applicable to the Services of the Contract.

C0.1.1 The *General Conditions for Consultant Services* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Purchasing Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm.

C0.2 A reference in the Request for Proposal to a section, clause or subclause with the prefix "**C**" designates a section, clause or subclause in the *General Conditions for Consultant Services*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. CONSULTING CONTRACT ADMINISTRATOR

D2.1 The Consulting Contract Administrator is:

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

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 Southwest Sewer Catchment services several residential neighborhoods, including but not limited to the Fort Richmond, St. Norbert, Whyte Ridge, Linden Woods, Linden Ridge, and Waverley West Neighborhoods. The catchment also includes the entire Fort Garry University Of Manitoba Campus. The extents of the Southwest Sewer Catchment are shown in Figure 1 below.

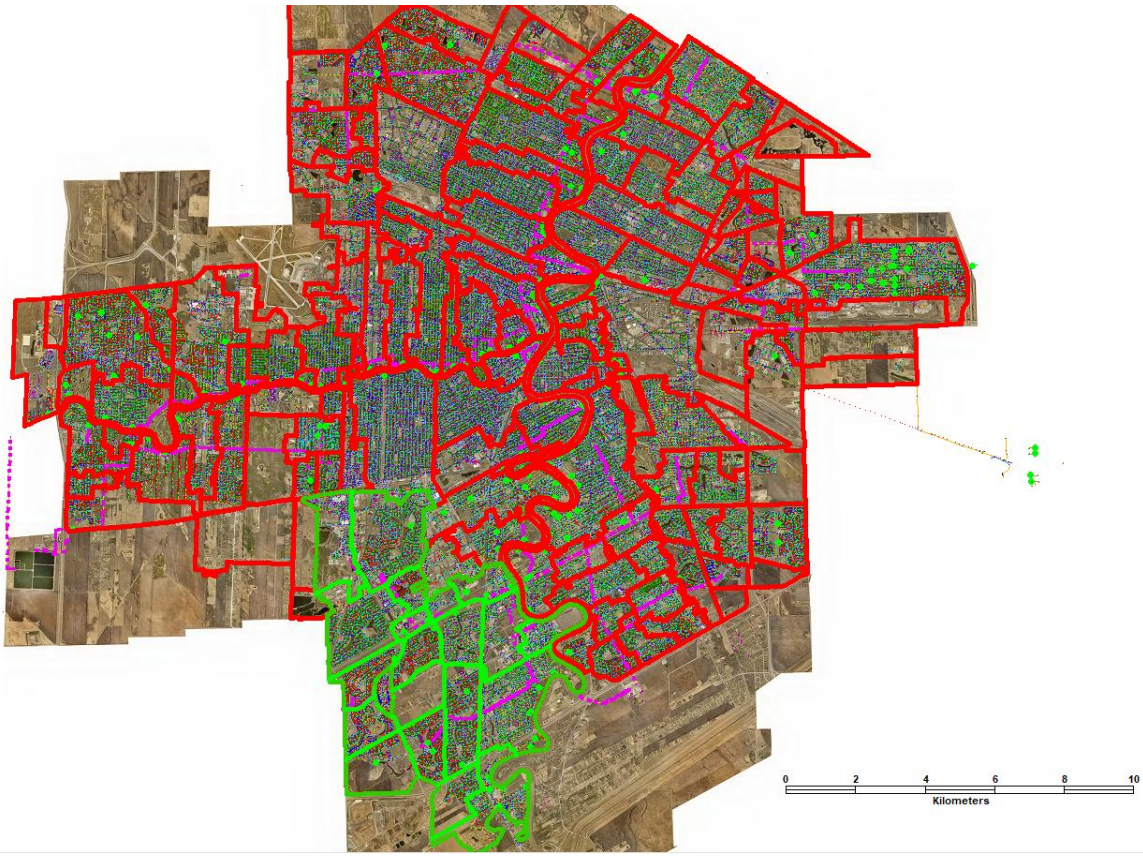

Figure 1: Southwest Sewer Catchment Extents (Shown In Green)

D3.2 The Southwest Sewer Catchment services an approximate area of 3,300 ha and an approximate population of 64,000, as of 2019.

D3.3 The entire Southwest Sewer Catchment consists of separate sewer districts. All sewage from the Southwest Sewer Catchment flows to the South End Sewage Treatment Plant (SEWPCC). This flow crosses the Red River between the Fort Garry bridges; the D'Arcy pumping station is located at this point and raises the sewage to a sufficient height to allow it to flow by gravity under the Red River, as part of a river crossing.

D3.4 The D'Arcy pumping station was originally constructed in 1977. Upgrades to the D'Arcy pumping station were completed in 1998, increasing the maximum pumping capacity by over 50%.

D3.5 The Southwest Sewer Project is needed to maintain the existing level of service and provide sewer redundancy in the SW Quadrant within the City of Winnipeg.

D3.6 From 2008 to present extensive changes to the Southwest regional sewer network were constructed to accommodate the development of the Waverley West residential neighborhood. The extent of these regional sewer upgrades consisted of:

(a) Construction of a 600 mm interceptor sewer at the upstream connection point, up to a 750mm interceptor sewer to tie into the existing interceptor network near Bishop Grandin and Kenaston Boulevard. These regional sewers service the northern neighborhoods of Waverley West, including Bridgwater Lakes, Bridgwater Forest, Bridgwater Centre and Bridgwater Trails.

(b) Construction of a 600mm interceptor sewer at the upstream connection point, up to a 1200mm interceptor sewer to tie into the existing interceptor network at the intersection of Killarney and Pembina. These regional sewers service the southern portion of the Waverley West, including Prairie Pointe and South Pointe. It is also anticipated that the Waverley West B lands under development will tie into this interceptor.

D4. SCOPE OF SERVICES

D4.1 The Services required under this Contract shall consist of provided Detailed Engineering Design and Contract Administration Services in accordance with the following:

(a) Project Management (D7);

(b) Consultant Progress Reports (D8);

(c) Engagement Consultations and Heritage Resource Work (D9);

(d) Wastewater Hydraulic Modelling Services (D10);

(e) Contract 1 – River Crossing Twin Force Mains
  (i) Detailed Engineering Design (D11, D12);
  (ii) Construction Documents (D17, D18);
  (iii) RFQ and Procurement Process (D21, D22);
  (iv) Contract Administration Services – Non-Resident (D24);
  (v) Contract Administration Services – Resident (D26);
  (vi) Contract Administration Services – Resident Tunnel Drive Site Hours (D27);
  (vii) Record Documents and Project Closeout (D32);

(f) Contract 2 – Downstream Gravity Sewer Interceptor
  (i) Detailed Engineering Design (D11, D13);
  (ii) Construction Documents (D17, D18);
  (iii) RFQ and Procurement Process (D21, D22);
  (iv) Contract Administration Services – Non-Resident (D24);
  (v) Contract Administration Services – Resident (D26);
  (vi) Contract Administration Services – Resident Tunnel Drive Site Hours (D28);

(vii) Record Documents and Project Closeout (D32);

(g) Contract 3 – Linacre Lift Station
  (i) Detailed Engineering Design (D11, D14);
  (ii) Construction Documents (D17, D19);
  (iii) RFQ and Procurement Process (D21, D22);
  (iv) PLC & HMI Controller Programming (D23);
  (v) Contract Administration Services – Non-Resident (D24);
  (vi) Factory Acceptance Testing (D25);
  (vii) Contract Administration Services – Resident (D26);
  (viii) Contract Administration Services – Resident Site Hours (D29);
  (ix) Commissioning (D30.6);
  (x) Record Documents and Project Closeout (D32, D33);

(h) Contract 4 – Upstream Sewer Work
  (i) Detailed Engineering Design (D11, D15);
  (ii) Construction Documents (D17, D18);
  (iii) Procurement Process (D22);
  (iv) Contract Administration Services – Non-Resident (D24);
  (v) Contract Administration Services – Resident (D26);
  (vi) Contract Administration Services – Resident Tunnel Drive Site Hours (D29.3);
  (vii) Record Documents and Project Closeout (D32);

(i) Contract 5 – Kilkenny Lift Station Demolition
  (i) Detailed Engineering Design (D11, D16);
  (ii) Construction Documents (D17, D20);
  (iii) Procurement Process (D22);
  (iv) Contract Administration Services – Non-Resident (D24);
  (v) Contract Administration Services – Resident (D26);
  (vi) Record Documents and Project Closeout (D32);

(j) Heritage Work Allowance (D34);

(k) Geotechnical Work Allowance (D35); and

(l) Additional Work Allowance (D36).

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

D4.1.2 Where the Services required include Contract Administration, Consultants shall pay particular attention to the revisions to Section 9.19 and 9.20.1 of the City's Project Management Manual in Addendum #8.

D4.2 The following shall apply to the Services:

(a) The City of Winnipeg, Water and Waste Department - Electrical Design Guide, current revision 07: https://winnipeg.ca/waterandwaste/dept/manual.stm#wastewater

(b) The City of Winnipeg, Water and Waste Department – Identification Standard, current revision 04 and Identification Standard Appendices, current revision 11: https://winnipeg.ca/waterandwaste/dept/manual.stm#wastewater

(c) The City of Winnipeg, Water and Waste Department – Modelling Guidelines, current revision: 01;

https://legacy.winnipeg.ca/waterandwaste/pdfs/HydraulicModelingGuidelines.pdf

(d) The City of Winnipeg, Water and Waste Department - Automation Design Guide, current revision: 04 attached as Appendix D

(e) The City of Winnipeg, Water and Waste Department – HMI Layout and Animation Plan, current revision: 04 attached as Appendix E

(f) The City of Winnipeg, Water and Waste Department – Tag Naming Standard, current revision: 01 attached as Appendix F

(g) The City of Winnipeg, Bid Opportunity – Reference Clauses for Use of WSTP Standardization Contracts, current revision: 08 attached as Appendix G

(h) The City of Winnipeg, Wastewater Collection Commissioning Forms, current revision: 00 attached as Appendix H

(i) The City of Winnipeg, Wastewater Collection Lift Station Asset Equipment List, current revision: 00 attached as Appendix I

(j) The City of Winnipeg, Sample Asset Equipment Attachment File MTR-L01, current revision: 00 attached as Appendix J

(k) The City of Winnipeg, Cancelling & Superseding Existing Drawings, current revision: 00 attached as Appendix L

(l) City of Winnipeg Green Building Policy: New City-Owned Buildings and Major Additions

http://clkapps.winnipeg.ca/DMIS/DocExt/ViewDoc.asp?DocumentTypeId=2&DocId=5989

(m) Universal Design Policy

http://clkapps.winnipeg.ca/DMIS/DocExt/ViewDoc.asp?DocumentTypeId=2&DocId=3604

(n) Public Engagement Guidelines

https://winnipeg.ca/PublicEngagement/pdfs/PublicEngagementRequirements.pdf

D4.3 Investment Planning Templates

D4.3.1 Templates used by the City Of Winnipeg's Asset Management Group as part of the Investment Planning process shall be utilized as much as possible during this project.

D4.3.2 At minimum, the following Investment Planning Templates shall be utilized by the Consultant:

(a) The latest version of the Basis Of Estimate (BoE) and Class of Estimate (CoE) templates shall be used by Consultant as part of all capital cost estimate development tasks.

D4.4 The funds (including Additional Work Allowance) available for this Contract are $8,400,000.00

D5. DEFINITIONS

D5.1 When used in this Request for Proposal:

(a) "**A/C**" means Air Conditioning;

(b) "**ACH**" means Air Changes per Hour;

(c) "**ATS**" means Automatic Transfer Switch;

(d) **"Commissioning"** means a process by which equipment is physically verified and tested at the installed site location to verify if equipment functions according to design and functional requirements;

(e) "**CSO**" means Combined Sewer Overflow;

(f) "**CSTE**" means Customer Service Termination End;

(g) "**DFO**" means Department of Fisheries and Oceans;

(h) "**FAT**" means Factory Acceptance Testing;

(i) "**GBR**" means Geotechnical Baseline Report;

(j) "**GDR**" means Geotechnical Design Report;

(k) "**H_2S**" means Hydrogen Sulfide;

(l) "**HDD**" means Horizontal Directional Drilling;

(m) "**HMI**" means Human Machine Interface;

(n) "**HVAC**" means Heating, Ventilating, and Air Conditioning;

(o) "**I/O**" means Input / Output;

(p) "**ITS**" means Inspection and Technical Services;

(q) "**mASL**" means metres Above Sea Level;

(r) "**MCC**" means Motor Control Centre;

(s) "**MH**" means Manhole;

(t) "**MTI**" means Manitoba Transportation and Infrastructure;

(u) "**NMS**" means National Master Specifications;

(v) "**O&M**" means Operations & Maintenance;

(w) "**NMS**" means National Master Specifications;

(x) "**P&ID**" means Piping & Instrumentation Diagram;

(y) "**PDWF**" means Peak Dry Weather Flow;

(z) "**PLC**" means Programmable Logic Controller;

(aa) **"Professional Engineer"** means an individual that registered to practice engineering in the Province of Manitoba;

(bb) "**PWWF**" means Peak Wet Weather Flow;

(cc) **"Record Documents"** means final documents that have been prepared and sealed by a registered Professional Engineer in the Province of Manitoba after site verifying in detail the completed work of the project. The sealing Professional Engineer is taking full responsibility for the completed works while ensuring that applicable current codes and standards are being met;

(dd) "**RFP**" means Request for Proposal;

(ee) "**RFQ**" means Request for Qualification;

(ff) "**SCADA**" means Supervisory Control And Data Acquisition;

(gg) **"SEWPCC"** means South End Sewage Treatment Plant;

(hh) "**SRS**" means Sanitary Relief Sewer;

(ii) **"Solution"** refers to the overall solution and its components proposed to meet specific Project design requirements, goals and objectives specified in the RFP;

(jj) "**SSO**" means Sanitary Sewer Overflow;

(kk) **Supply Chain Disruption"** means an inability by the Consultant/Contractor to obtain goods or services from third parties necessary to perform the Work of the Contract within the schedule specified therein, despite the Consultant/Contractor making all reasonable commercial efforts to procure same. Consultant/Contractors are advised that increased costs do not, in and of themselves, amount to a Supply Chain Disruption;

(ll) "**TDH**" means Total Dynamic Head;

(mm) "**TVSS**" means Transient Voltage Surge Suppressor;

(nn) "**UPS**" means Uninterruptible Power Supply;

(oo) "**VFD**" means Variable Frequency Drive; and

(pp) **"WWF"** means Wet Weather Flow.

D5.2 The Water and Waste Department will provide assistance towards the following services:

(a) Site access to the Kilkenny and D'Arcy Lift Stations.

(b) Provision of any available information on Kilkenny and D'Arcy Lift Station operational records (i.e. pump cycle times, maintenance records, sewer flow gauging).

(c) Reviewing engineering design submittals.

(d) Providing rainfall reports as needed.

D5.3 The City of Winnipeg has adopted Manitoba Building Code (2024 edition), which adopts National Building Code (2020 edition). All designs shall comply with the latest building code editions.

D5.4 All electrical work shall comply with latest version of Manitoba Electrical Code along with Canadian Electrical Code (2024 edition), even if they have not been adopted by the City of Winnipeg.

D5.5 Latest available editions of NFPA 820 (2024 edition) along with CSA B149.1 (2025 edition) shall be followed for the project, even if they have not been adopted by the City of Winnipeg.

D6. RELEVANT DOCUMENTS AND DRAWINGS

D6.1 Relevant documents and drawings are available by request to the City's Project Manager after completion of the Non-Disclosure Agreement in Appendix B.

D6.2 The following documents and drawings will be released at the sole discretion of the City:

(a) SW Sewer Catchment Regional Upgrades Design – Conceptual Design Report. KGS Group. November 26, 2021.

(b) SW Sewer Catchment Regional Upgrades Design – Preliminary Design Report. KGS Group. January 30, 2025.

(c) SW Sewer Catchment Regional Upgrades Design – Preliminary Design Report Appendix C: Detriment Analysis Results Spreadsheets. KGS Group. January 30, 2025.

(d) Technical Memorandum: SW Sewer Catchment Regional Upgrades Design – Load Shedding. KGS Group. September 5, 2023.

(e) Technical Memorandum: Hydraulic Model Update Requirements SW Sewer Regional Upgrades. KGS Group. February 4, 2025.

(f) Technical Memorandum: SW Sewer Catchment Regional Upgrades – Model Update TM Rev B. KGS Group. January 28, 2025.

(g) Technical Memorandum: SW Sewer Catchment Regional Upgrades – Future Flows Update and Impacts to PD Solution – Final Rev 1. KGS Group. February 20, 2025

(h) Technical Memorandum: SW Sewer Catchment Regional Upgrades – Flood Scenario & Load Shedding Rev A. KGS Group. February 28, 2025

(i) Province of Manitoba Memorandum - Winnipeg Southwest Sewer Catchment Upgrade Heritage Screening. October 1, 2024

(j) Southwest Sewer Catchment Regional Upgrade Design, Linacre Pump Station, RL-0107-NO Heritage Resource Impact Assessment. KGS Group. October 6, 2025.

(k) Southwest Sewer Catchment Regional Upgrade Design, Linacre Pump Station, RL-0108-NO Heritage Resource Impact Assessment. KGS Group. November 25, 2025.

(l) Alternative Wastewater Servicing For The Waverley West Subdivision. Wardrop Engineering. 2005.

(m) Alternative WWS Interceptor Plan To Service Waverley West Subdivision - Hydraulic and Financial Analysis, Wardrop Engineering. 2008.

(n) SEWPCC Service Boundary Inflow/Infiltration and Cross-Connection Study, Wardrop Engineering. 2009.

D7. PROJECT MANAGEMENT

D7.1 Plan, organize, secure, and manage resources to complete the phases outlined in D8 to D33.5.

D7.2 Create and submit a project management plan no later than twenty (20) Calendar Days after Project Award. The project management plan shall include but not be limited to:

(a) Project Scope Statement
  (i) Describing the services, cost and time elements of the project, out of scope work, project constraints and restrictions, major assumptions, and the City's acceptance criteria for a successfully delivered project.

(b) Project Work Plan
  (i) Outline the key deliverables including review submissions, the key activities for the deliverables, the review submission dates and the completion date for the deliverables.

(c) Project Schedule
  (i) Include the information required in B13.
  (ii) The approved schedule will be used as the Project baseline throughout the Project.
  (iii) The Project schedule is to be updated and included with the Consultant Progress Reports indicated in D8.1.

(d) Risk Management Plan
  (i) Prepare a risk management plan identifying risk event causes, risk event outcomes, degree of certainty, effects on Project objectives, severity of risk, response/action(s) to be undertaken, contingency plan, and associated costs to manage risks.
  (ii) Using the City's spreadsheet template located on the City's Asset Management Program website located at: https://legacy.winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#5. A draft risk management plan has been prepared by the City and will be provided to the Consultant.
  (iii) The risk management plan is to be updated and included with the Consultant Project Reports indicated in D8.1.

(e) Change Management
  (i) Identify the schedule, quality, and budget impacts of any proposed changes.
  (ii) Maintain and regularly update PCN, CSS, RFI and decision logs.

(f) Quality Assurance and Control
  (i) Establish appropriate levels of review and approvals for all Project Deliverables. Identify individuals responsible for the quality review and any independent technical reviews.

(g) Human Resources
  (i) Describe the team organizational and management approach.
  (ii) Include an organizational chart.

(h) Communication
  (i) Illustrate the various stakeholders, what information needs to be communicated, the timing and delivery method of the communication, who is responsible for the communication, and the feedback mechanism.

(i) Project Closeout Plan
  (i) Establish how to close phases of the Project and Project overall.

D7.3 Attend a mandatory kickoff meeting with the Design & Construction and Wastewater Services Branches of the Water and Waste Department to review project expectations and limits. The Consulting Contract Administrator will prepare and distribute meeting minutes for the kickoff meeting.

D7.4 Detailed Design Meetings

(a) Coordinate biweekly detailed design meetings over Microsoft Teams. The Consultant will be required to prepare meeting agenda and provide meeting minutes after the meeting has completed. Meetings will be used to update progress to date, anticipated submittals, any ongoing project issues along with ask questions to City staff.

(b) The Consultant shall plan for forty (40) meetings total, one (1) hour in length per meeting conducted over Microsoft Teams. The Consultant shall ensure that the project manager and all discipline leads attend each meeting. The Consultant will be required to prepare and distribute meeting minutes for all meetings.

(c) The meeting minutes template is available on the City of Winnipeg Documents for City Asset Management Program website https://legacy.winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm.

(d) If critical design dates outlined in the project schedule are not achieved during the design stages, The Consultant will be required to run additional meetings. No additional fees will be contemplated for additional meetings.

D7.5 In addition to the regular Project meetings detailed in D7.3, schedule and chair the following meetings:

(a) Allow for two (2) hours to review City comments provided for 60%, 95% and 100% submittals listed in D11.5 for each contract;

(b) One risk review workshop meeting, prior to the posting of the first Construction Tender. The Consultant shall allow for up to three (3) hours in duration for the risk review workshop. (All key personnel required to attend);

(c) Two (2) workshops with WWD operations staff to identify operational constraints and potential construction issues/concerns;

(i) Each workshop will have a duration of up to two (2) hours.

D7.6 Provide adequate notice (at least one (1) week) prior to any site visit or work that will require assistance from City personnel.

D7.7 Carry out other project management activities as required.

D7.8 Project Management Deliverables

(a) Project Management Plan.

(b) Biweekly detailed design meeting minutes.

(c) Additional project meetings minutes.

D8. CONSULTANT PROGRESS REPORTS

D8.1 The Consultant shall prepare and submit monthly reports for the entire duration of the project (up to Contract 5 Total Performance) using the Consultant Progress Report template from the Project Management Manual. All sections within this report shall be completed. One report shall be submitted for every month. For months with no project activity, a single report that combines two or more months can be submitted upon prior written approval by the Consulting Contract Administrator.

(a) The Consultant Progress Reports template is available on the City of Winnipeg Documents for City Asset Management Program website https://legacy.winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#6.

(b) Include a detailed monthly “cost to complete” report. The report is to include the actual costs to date (for consultant and contractors) plus projected costs to complete the contract including allowances for any unforeseen costs. The report will identify any expected budget overruns or surpluses.

(c) Include updated project schedule with each monthly Consultant Progress Reports. The updated project schedule to include the percent of work complete for each task.

(d) Include updated risk management plan with the Consultant Project Reports.

D8.2 The Consultant shall allow for a two (2) hour Microsoft Teams meeting each month to go through each month Consultant Progress Report. The Consultant Project Manager will be required to attend all monthly meetings (including during construction phases). Construction Contract Administrators will only be required to attend during construction phases.

D8.3 Consultant Progress Reports shall be submitted to the Consulting Contract Administrator by the fifteenth (15th) day of the following month. When the 15th day of the month falls on a weekend or holiday, the report shall be submitted on the first working day after the weekend/holiday.

D8.4 Monthly consultant invoices will not be paid until the corresponding Consultant Progress Report has been accepted.

D8.5 Consultant Progress Reports Deliverables

(a) Monthly Consultant Progress Reports

D9. ENGAGEMENT CONSULTATIONS

D9.1 Prepare Public Engagement in accordance with D47.

D9.2 Prepare engagement and consultation presentations. The presentation should include First Nations and Manitoba Metis. The consultant will be required to prepare and present two (2) separate presentations. The presentations shall include the following:

(a) Introductions of Consultant and City Staff.

(b) Overall project plan;

(c) Reasons for the project;

(d) Sequencing and staging of construction work;

(e) Timelines for when construction work will be occurring;

(f) Heritage site work;

D9.3 The Consultant will be required to coordinate with City Urban Forestry Branch for trees to be removed along the entire project routing. The City would like to minimize tree loss as much as possible. It is expected that the following Contracts will require trees to be removed:

(a) Contract 1 (River Crossing Twin Force Mains)

(b) Contract 2 (Downstream Gravity Sewer Interceptor)

(c) Contract 3 (Linacre Lift Station)

D10. WASTEWATER HYDRAULIC MODELLING SERVICES & DETAILED DESIGN REFINEMENTS

D10.1 All deliverables identified within Section D10 are to be approved by the City Contract Administrator as final prior to initiating the Detailed Design Contract Package Development, referenced in Sections D12 to D16 below.

D10.2 All hydraulic modeling analysis should be completed in accordance with the City of Winnipeg Hydraulic Modeling Guidelines (where applicable):

https://legacy.winnipeg.ca/waterandwaste/pdfs/HydraulicModelingGuidelines.pdf

D10.3 All hydraulic modeling analysis shall be completed using InfoWorks ICM Version 2024.5 Sewer or InfoWorks ICM Version 2024.5 Ultimate software.

D10.4 During the Tender Period the City will upon request provide the SEWPCC cut-down InfoWorks Hydraulic Model that was developed as part of the Preliminary Design report and has been calibrated.

(a) This InfoWorks Hydraulic Model will contain scenarios with the proposed Preliminary Design solution for this project inserted into the SEWPCC cut-down representation.

(b) This InfoWorks Hydraulic Model will contain the growth scenarios utilized to design/validate the Solution over the 35-year design horizon (year 2055).

(c) A copy of the InfoWorks Hydraulic Model will be provided to the Consultant awarded the Work if not previously provided during the Tender Period.

D10.5 The SEWPCC cut-down InfoWorks model representation of all conditions, excluding the sewer system modifications associated with the Project Solution, is considered sufficiently accurate for Detailed Design. No work to update the model representation, outside of the sewer system modifications associated with the Solution, nor work to calibrate the existing model representation, is required under this project's Scope of Work.

(a) Note that the SEWPCC cut-down InfoWorks model provided will contain a representation of the Fort Garry-St. Vital River Crossing prior to the replacement of this river crossing, begun in 2024 to present. Instead, the former representation of this river crossing is provided.

(b) Following the award of this contract to a successful Proponent, the City of Winnipeg will endeavor to update the SEWPCC cut-down InfoWorks model previously provided to include the latest representation of the Fort Garry-St. Vital River Crossing under construction. This updated SEWPCC model representation will then be provided to the awarded Proponent at the initiation of the Project.

D10.6 The InfoWorks Hydraulic model must be updated to reflect the Detailed Design refinements identified during the Preliminary Design Phase, but which were beyond the Preliminary Design Phase Scope of Work. The Consultant will be required to update the InfoWorks Hydraulic Model to consider the following Detailed Design refinements, and specifically confirm that whatever design/performance improvement goals are met, while still meeting the Detriment Analysis requirements, and all other Design Criteria previously defined in Section 3.4 of the SW Sewer Catchment Regional Upgrades Design – Preliminary Design Report.

(a) Many of these Detailed Design Refinements and their logic is documented in Section 14.0 of the *SW Sewer Catchment Regional Upgrades Design – Preliminary Design Report* (KGS Group, January 2025)

(b) Part of these design refinements may in fact not require analysis using the InfoWorks Hydraulic model to complete, but instead use other design software or calculation methods, at the discretion of the Consultant.

(c) Gravity Sewer Network, Upstream of Linacre Lift Station Refinements:

(i) Setup for future flow splitting including increasing 900mm gravity sewer to be 1050mm and lowering 1050mm pipe at Patricia Avenue diversion chamber from 224.7m to 221.8m (reduction of 2.9m).

(ii) Optimization of the weir height required at the Patricia Avenue Weir Chamber, along with where the flow diversion from the Fort Garry Interceptor takes place and new upstream sewer arrangement near the weir diversion structure. Optimization of the weir height should consider major failures of either the D'Arcy Pump Station or the Linacre Pump Station. Consideration should also be made of implications of an adjustable weir at the Patricia Avenue Weir Chamber.

(iii) Optimization of the SRS diversion structure weir elevation and general configuration immediately upstream of the proposed Linacre Lift Station. The purpose of this diversion structure is to redirect flow from the Kilkenny SRS network upstream of an existing relief outfall, back to the Linacre Lift Station to be conveyed for treatment.

(iv) Evaluate and design a new local sewer network to redirect flow from the Kilkenny Lift station north towards the proposed Linacre Lift Station, such that Kilkenny Lift Station can be taken offline and be decommissioned.

(d) Linacre Lift Station Refinements:

(i) Wet Well and Dry Well depth to increase by one (1) metre;

(ii) Removing the SSO 600mm force main tying into sewer outfall lines going to the Red River originally proposed for load shedding purposes;

(iii) The Linacre Lift Pumps will be required to be re-designed such all pumps are 1200 RPM (previously 720 RPM during preliminary design) with Duty-Duty-Standby arrangement. The model shall include setup of a 4th installed lift pump of identical capacity.

(iv) Refinement of pump station start and stop levels to keep the allowable motor starts per hour to ten (10) or fewer, while maximizing the use of storage within the upstream pipe network.

(v) No consideration of a redundant electrical service feed is required. The station shall be provided backup power via a standby generator as per the current Preliminary Design configuration.

(e) River Crossing Twin Force Mains and Downstream Gravity Sewer Interceptor Refinements

(i) Reducing the Force Main length in Maple Grove Park as indicated in Appendix A;

(ii) Ensuring the force mains and downstream gravity sewer interceptor velocities for dry and wet weather flows are within 0/6 – 3.0 m/s per City acceptable velocity range, particularly under the conditions stated in item D10.6(a). This includes for 2020 and 2055 scenarios under all level of service design conditions for separate sewer districts.

(iii) Simulating flows of one (1), two (2), three (3) and four (4) lift pumps in operation at the same time.

(i) Assume fourth lift pump identical in size to three pumps contained in the Solution design currently.

(ii) Simulating a single force main in use along with both force mains in the current design in use at the same time. The normal operation of Linacre Lift Station must be designed with both force mains in use at the same time. A single force main would only be used when a force main is offline for maintenance work.

(f) Downstream Gravity Sewer Interceptor Refinements:

(i) Increasing Gravity Sewer Interceptor length in Maple Grove Park from PTH 100 to end of Frobisher Road as indicated in Appendix A;

(ii) Gravity Sewer Interceptor to be installed below SEWPCC Outfall line going to Red River;

(iii) Gravity Sewer Interceptor to be installed at a lower elevation (approximately 1 – 1.5 m deeper) at the St. Vital Interceptor (going to SEWPCC Plant) such that the Interceptor can be used for wastewater inline storage during WWF events;

(iv) Modifying downstream Gravity Sewer Interceptor size as required to optimize in-line storage capability of Southwest Interceptor network.

(v) Increase minimum wastewater flow velocity to 0.6 m/s by adding low flow channel benching along with adjusting interceptor size;

(vi) Modifying the downstream Gravity Sewer Interceptor alignment such that installation beneath the St. Mary's Road overpass embankment is avoided;

(vii) Simulating flows of one (1), two (2), three (3) and four (4) lift pumps in operation at the same time within the Gravity Sewer Interceptor network.

(i) Assume fourth lift pump identical in size to three pumps contained in the Solution design currently.

(g) Removing the originally proposed 3000mm Offline Storage Tunnel

(i) This was determined to not be required in the interim period following the completion of the Preliminary Design Report and the initiation of the Detailed Design Phase.

D10.7 Detriment Analysis Using The Hydraulic Model

(a) All Detailed Design Refinements shall be evaluated using the standardized Detriment Analysis process using the City of Winnipeg collections hydraulic model.

(i) Each Detailed Design Refinement however is not required to evaluated individually, several Refinements can be applied concurrently and evaluated together using the Detriment Analysis process.

(b) The Detriment Analysis process will require the Consultant to run the City of Winnipeg Hydraulic model with the proposed refinement(s) included.

(i) The performance of this updated solution model in comparison to the Preliminary Design solution model. Both will compared considering specific level of service standards to verify there to be no reduction in level of service within the Hydraulic model as a result of the refinement(s) proposed.

(ii) Detriment Analysis will be completed for the following level of service standards, as applicable:

- Separate Sewer District Surcharge (Basement Flooding)
- Separate Sewer District Spill/Overflows

(iii) The Detriment Analysis process shall consider both the solution model scenario under current conditions and the solution model under the 35 year design horizon (year 2055) previously developed during the Preliminary Design Phase, and the comparative performance of each scenario with the proposed refinement(s) included.

- The design horizon selected will be recommended by the Consultant as part of the detriment analysis process for the recommended solution.
- This future solution model will have proposed increases in population and impervious areas artificially applied up to the design year for the solution.
- The intent is to provide evidence that the solution will also meet requirements without causing detriments over the entire design life for the solution.

D10.8 For further details on the Detriment Analysis process, see the City of Winnipeg Hydraulic Modeling Guidelines.

D10.9 Provide a Detailed Design Refinements Report for the items listed in D10.6, including:

(a) Documenting the each refinement considered, and what solution was proposed to achieve the refinement.

(b) Summary of model results under Level of Service Conditions and under the various Project Design Criteria.

(c) Updated detriment analysis and overall hydraulic performance assessments under current day model representation and over the 35-year design horizon (Year 2055) model representation;

(i) No updates to either of these model representations of the SEWPCC collections network is required, only refinements related to the Southwest Interceptor Project.

(d) Recommendations for Detailed Design Refinements to move forward with.

(e) Appendices of any other design software findings used to support recommendations for Detailed Design Refinements to move forward with.

D10.10 Provide an interim Hydraulic Model Database in conjunction with the Detailed Design Refinements Report referenced in Section D10.9 with:

(a) All Detailed Design Refinement(s) documented as separate Model Scenarios, and with selection lists highlighting the extent of changes made under each Model Scenario;

(b) One (1) final Model Scenario with all recommended Detailed Design Refinement(s);

(c) Detriment analysis simulation run files pre-created to simulate the model results used to produce the updated detriment analysis findings referenced under Section D10.6 and Section D10.9; and

(d) Any other simulation run files pre-created to simulate design conditions confirmed or assessed to satisfy the criteria under Section D10.6.

D10.11 The deliverables referenced in Section D10.9 and Section D10.10 are to be submitted under three revisions at minimum:

(a) The first (1st) revision of these deliverables are to be reviewed and commented on by the City of Winnipeg staff over a period of fifteen (15) business days at minimum.

(i) A meeting shall also be scheduled with City of Winnipeg staff during this fifteen (15) business day review period to allow for content of the deliverables to be questioned and discussed prior to submitting feedback to the Consultant.

(b) The second (2nd) revision of these deliverables are to be reviewed and commented on by the City of Winnipeg staff over a period of ten (10) business days at minimum.

(c) The third (3rd) revision of these deliverables are to be reviewed and commented on by the City of Winnipeg staff over a period of five (5) business days at minimum, before finalizing the deliverables.

D11. DETAILED ENGINEERING DESIGN GENERAL

D11.1 Utilize Standardized City Equipment including:

(a) Schneider Electric equipment (via RFP 756-2013) for Motor Control Centres, Variable Frequency Drives along with Programmable Logic Controllers.

(b) Siemens equipment (via RFP 449-2014) for Flow Transmitters, Ultrasonic Level Transmitters, Differential Pressure Transmitters and Temperature Transmitters.

(c) Rotork Controls equipment (via RFP 331-2014) for Electrical Valve Actuators.

(d) MSA equipment (via RFP 123-2014) for Gas Detection Systems.

D11.2 Designs should adhere to City of Winnipeg Standard Construction Specifications.

D11.3 The Preliminary Design Report shown in Appendix B has not been updated to reflect the Detailed Design requirements including:

(a) Phasing Plans and Construction Value for each Construction / Demolition Contract;

(b) River Crossing Twin Force Mains modifications listed in D12.1.

(c) Downstream Gravity Sewer Interceptor modifications listed in D13.1.

(d) Linacre Lift Station modifications listed in D14.1.

(e) Upstream Gravity Sewers modifications listed in D15.1.

(f) Adding Kilkenny Lift Station Demolition.

(g) The future 3000mm Storage Tunnel will no longer be part of the Detailed Design requirements;

D11.4 Site Visits

(a) Attend a mandatory preliminary Kilkenny Lift Station site visit with the Consulting Contract Administrator and City Collections staff to review existing site conditions, take measurements and collect data. The Consultant shall ensure that all discipline leads/staff attend the preliminary site visit. The Consultant will be required to arrange the site visit with City Wastewater Collections Supervisor.

(b) The Consultant will be allowed to take pictures of the project sites (including existing Water & Waste infrastructure) permitted no City staff are in the pictures.

(c) Any staff requiring to access the lower levels of any Lift Station will be required to have Confined Space Entry Training. The Consulting Contract Administrator will be checking all Consultant staff planning to enter the lower areas on site. Any staff that can not produce proof of training on site will not be allowed to enter the lower levels of the Lift Station.

D11.5 Design stage submissions shall be provided for City staff to review Consultant work. Allow for a minimum two (2) weeks review each Design Package by City staff. Any incomplete submissions will be returned and will require resubmission until the Design Package stage submission is complete. The following Design Package submissions and list of deliverables at each design stage submission includes:

(a) Prepare a 60% Design Package complete with Drawings List in excel format, Drawings, Specifications and Class II cost estimate.

(b) Prepare a 95% Design Package complete with Drawings, Specifications, Shop Drawing Submittal Log and Class I cost estimate.

(c) Prepare a 100% Design (Tender Ready) Package review submission complete with Drawings, Specifications, Shop Drawing Submittal Log and Class I, revised pre-tender cost estimate. The pre-tender estimate must be provided to the Water and Waste Department's contact person for review at least fifteen (15) calendar days prior to tendering. The project shall not be tendered without this review.

(d) In addition to the drawings, specifications, and cost estimates associated with each Design Package submission stage, a Summary Design Memorandum is to also be prepared as part of each Design Package submission.

(i) The purpose of the Summary Design Memorandum deliverable is to document the design values/parameters which resulted in the particular size/model/arrangement selected for each design element, along with a brief description of the design process for that element.

(ii) Details of the final size/model/arrangement of each design element is also be summarized in this report.

(iii) The Summary Design Memorandum shall also summarize which design parameters/elements are recommended to be monitored over time to ensure the design elements associated with this project operate within their design limits, and what design parameters would suggest the need for future capital upgrades. The means and methods to monitor these design parameters/elements should also be commented on, where applicable.

(e) The Summary Design Report does not require recommendations or sizing for future capital upgrades.

D12. CONTRACT 1 (RIVER CROSSING TWIN FORCE MAINS) DETAILED ENGINEERING DESIGN

D12.1 The 600 mm Force Main pipes have been developed to the preliminary design stage and is shown on the drawings in Appendix B. The Preliminary Design Report shown in Appendix B has not been updated to reflect the Detailed Design requirements. The Consultant will be required to provide engineering design for the following changes:

(a) Drawings do not use the correct title blocks, drawing numbering or follow City Design Guidelines;

(b) Reducing the Force Main length in Maple Grove Park as indicated in Appendix A;

(c) Force Mains requiring be encased in steel casing pipes below the Red River;

(d) Force Mains proposed to by installed by Horizontal Direction Drilling to be changed to Microtunnelling due to requiring force mains to be installed within larger steel casing pipes;

(e) Both force mains to include magnetic flow meters for flow monitoring and be installed within separate manholes from Transition Chamber.

D12.2 Provide detailed engineering services including:

(a) Civil and Municipal Engineering;

(b) Geotechnical Engineering;

(c) Structural Engineering.

D12.3 Coordinate with Department of Fisheries and Oceans (DFO) for any crossings below the Red River. The sewer carrier pipe crossings shall be designed to be installed by trenchless installations only and shall be designed with steel pipe casing in accordance with DFO requirements.

(a) Attend a discussion meeting with DFO and City staff to discuss options.

D12.4 Engineering Design Services

(a) Civil and Municipal Engineering

(i) Provide design for force main pipe installations including:

- Two (2) separate force mains with sizes to be designed based on the hydraulic modelling results in D10. Force mains to be sized such that one (1) force main can handle 2055 flow requirements. Normal operation will be both force mains in use at the same time.
- Routing alignment of the new sewer pipes including sections where open cut and trenchless installations are to be performed along with manhole and shaft locations.
- Detailing any underground structure crossings along with buried utility services.
- Identifying where recommended launch and receiving shafts are to be installed along with shoring methods for trenchless installs.
- Installing trenchless sewer carrier pipes to be within steel casing pipe for requirements in D12.3 complete with rollers.
- Provide design for permanent bypass vault manholes for tie-ins to both force mains on the Lift Station side (west of Red River) for the City to perform future bypass pumping for Linacre Lift Station. Tie-ins shall include a manually operated horizontal gate valve (connection to Linacre Lift Station pump discharges) along with a manual operated vertical gate valve (connection for a temporarily bypass force main to be connected to). Temporary bypass force main tie-in shall be designed using a wye connection for future pipeline pigging to be performed.
- Provide design for permanent flow monitoring manholes on both force mains in Maple Grove Park for the City to perform flow monitoring of force mains. Utilize Siemens equipment (via RFP 449-2014) Flow Transmitters. Note that electrical and automation engineering for flow monitoring is to be provided as part of Linacre Lift Station Detailed Engineering Design. Flow monitoring manholes are to be located as shown in Appendix A.
- Provide design for a permanent transition chamber where both force mains would discharge to and where gravity sewer interceptor would start. Transition chamber shall be fully separated from flow monitoring manholes to prevent ingress of H_2S gases.
- Flow monitoring manholes and transition chamber within Maple Grove Park lie in a Flood Plain area. The top of the manholes and grading shall be designed to be above the water level associated with the Flood Manual Upper Bound profile to prevent being submerged during Red River Flooding.

(ii) Provide design for pavement/site restorations for all open cut, manhole and shaft installations.

(b) Geotechnical Engineering

(i) Prepare a Geotechnical Report for Riverbank stability associated with a City Waterway Permit listed in D24.18.

(c) Structural Engineering

(i) Ensure that all building design upgrades are comply with the Manitoba Building Code, latest edition.

(ii) Provide recommendations for shoring of all open cut excavations, manholes along with launching and receiving shafts for trenchless installs.

D13. CONTRACT 2 (DOWNSTREAM GRAVITY SEWER INTERCEPTOR) DETAILED ENGINEERING DESIGN

D13.1 The 1200 mm Gravity Sewer Interceptor has been developed to the preliminary design stage and is shown on the drawings in Appendix B. The Preliminary Design Report shown in Appendix B has not been updated to reflect the Detailed Design requirements. The Consultant will be required to provide engineering design for the following changes

(a) Drawings do not use the correct title blocks, drawing numbering or follow City Design Guidelines;

(b) Gravity Sewer Interceptor size to be confirmed based on the hydraulic modelling results in D10.

(c) Increasing Gravity Sewer Interceptor length in Maple Grove Park from PTH 100 to end of Frobisher Road as indicated in Appendix A;

(d) Gravity Sewer Interceptor to be installed below SEWPCC Outfall line going to Red River;

(e) Gravity Sewer Interceptor to be installed at a lower elevation (approximately 1 – 1.5 m deeper) at the St. Vital Interceptor (going to SEWPCC Plant) such that the 1200mm Interceptor can be used for wastewater storage ability;

(f) Interceptor requiring be encased in a large steel casing pipe when crossing below PTH 100 (Perimeter) Highway;

(g) Interceptor requiring be encased in a steel carrier pipe when crossing below St. Mary's Road Overpass (including ramp lanes);

(h) Interceptor horizontal alignment to be rerouted such that installation beneath the St. Mary's Road overpass embankment is avoided;

(i) Increase minimum wastewater flow velocity to 0.6 m/s by adding low flow channel benching along with adjusting interceptor size;

D13.2 Provide detailed engineering services including:

(a) Civil and Municipal Engineering;

(b) Structural Engineering.

D13.3 Coordinate with Manitoba Transportation and Infrastructure (MTI) for any crossings below PTH 100 (Perimeter) Highway along with St. Mary's Overpass (including ramp lanes). The sewer pipe crossings shall be designed to be installed by trenchless installations only and shall be designed with steel pipe casing in accordance with MTI requirements.

(a) Attend a discussion meeting with MTI and City staff to discuss options, and present the modified interceptor alignment such that installation beneath the St. Mary's Road overpass embankment is avoided.

(b) Submit an MTI crossing permit application for crossing below PTH 100 (Perimeter) Highway. The Consultant will be required to include a disbursement of $600 to cover the application costs.

D13.4 Engineering Design Services

(a) Civil and Municipal Engineering

(i) Provide design for sewer (gravity and force main) pipe installations including:

- Routing alignment of the new sewer pipes including sections where open cut and trenchless installations are to be performed along with manhole and shaft locations.
- Detailing any underground structure crossings along with buried utility services.
- Identifying where recommended launch and receiving shafts are to be installed along with shoring methods for each trenchless install drive.
- Installing trenchless sewer carrier pipes to be within steel casing pipe for requirements in D12.3 complete with rollers.
- Provide design for connection of Gravity Sewer Interceptor to St. Vital Interceptor.

(ii) Provide design for pavement/site restorations for all open cut, manhole and shaft installations.

(b) Structural Engineering

(i) Ensure that all building design upgrades are comply with the Manitoba Building Code, latest edition.

(ii) Provide recommendations for shoring of all open cut excavations, manholes along with launching and receiving shafts for trenchless installs.

D14. CONTRACT 3 (LINACRE LIFT STATION): DETAILED ENGINEERING DESIGN

D14.1 The Linacre Lift Station has been developed to the preliminary design stage and is shown on the drawings in Appendix B. The Preliminary Design Report shown in Appendix B has not been updated to reflect the Detailed Design requirements. The Consultant will be required to provide engineering design for the following changes

(a) Drawings do not use the correct title blocks, drawing numbering or follow City Design Guidelines;

(b) Wet Well and Dry Well depth to increase by one (1) metre;

(c) Main Floor reconfiguration to relocate the Generator Room to the west side of the station and the Generator rotated 90 degrees so that it can be removed from the west wall;

(d) Pump Room and Motor Room sizes:

(i) Increase length to allow a future fourth (4th) pump to be installed as part of a separate project in the future;

(ii) Increase width to allow for installation of a monorail and removing equipment.

(e) Removing the SSO 600mm force main tying into sewer outfall lines going to the Red River originally proposed for load shedding purposes;

(f) Lift Pumps will be required to be re-designed such all pumps and motors are 1200 RPM (previously 720 RPM during preliminary design) with Duty-Duty-Standby arrangement.

(g) Electrical Room width size to be increased so there is at least two (2) m spacing between equipment;

(h) Wet Well size to be increased to in the north direction such that the access hatches are a minimum of two (2) meters away from the building north wall;

(i) Wet Well ventilation to be removed;

(j) Generator size to increase to power two (2) lift pumps;

(k) Generator ventilation (once relocated) to have intake cooling dampers installed on south and north walls along with a large removable damper on the west wall for removing generator;

(l) Remove all actuated valves and have both force mains in use at the same time (lift pumps pump into both force mains at all times);

(m) Reducing the number of lift pump discharge valves to have a common header.

(n) Lift pump motors and driveshafts to be sized for full size impeller, even if a trimmed impeller is to be used on the pumps;

(o) Electrical and Automation work for providing flow monitoring in Maple Grove Park for end of both force mains;

(p) SRS Intake Gate Chamber to include a mechanical adjustable weir (gate with operator at grade level), along with a Positive Gate and Flap Gate on 900 mm SRS outfall line;

(q) SRS Intake Gate Chamber to include SSO instruments (level upstream of weir, level downstream of weir, flap gate inclination angle along with weir overflow level switch) to be monitored at an SSO Panel and PLC.

D14.2 Provide detailed engineering services including:

(a) Architectural and Building Design;

(b) Civil and Municipal Engineering;

(c) Geotechnical Engineering;

(d) Structural Engineering;

(e) Mechanical Engineering – Process Pumping and Piping;

(f) Mechanical Engineering – HVAC System and Generator;

(g) Electrical Engineering; and

(h) Automation and Instrumentation Engineering.

D14.3 For the review submittals listed in D11.5, the Consultant will be required to additional documents for each review submittal (60%, 95% and 100%). Should the submittals not include the additional documents listed below, the submittal will be considered incomplete and be returned to the Consultant. Additional documents shall include:

(a) Instrument List

(b) DNP3 I/O Mapping List

D14.4 The Lift Station is required to be designed with Maintenance and Operations tasks in mind. With the exception of the generator, all equipment (pumps, motors, valves, MCCs, VFDs, generator, etc.) must be capable of being moved to the Main Floor level and moved to front of double doors to be removed from the station without the use of an external hoisting equipment. The generator needs to be designed to be removed through a removable wall damper. The Consultant will required to include the following in the design:

(a) Equipment removal hatch and column;

(b) Monorails for lower levels to move equipment to equipment removal column.

(c) Pump Room and Motor Room sizes to provide sufficient spacing to remove all equipment without other equipment needing to be removed (i.e. removing a pump intake gate valve should not require a pump to be removed).

(d) All HVAC equipment including filters, fans, duct heaters, unit heater, etc. to be no more than 2.5 metres above finished floor for access.

D14.5 Engineering Design Services

(a) Architectural and Building Design

(i) 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:

- Split faced concrete block and masonry construction;
- Metal profile gable roof complete with eavestroughs and down spouts;
- Main exterior entrance steel double man-entry doors to access Main Floor and Generator Rooms.
- Interior doors between Main Floor level rooms.
- The superstructure will be required to house a natural gas generator, main electrical distribution equipment, equipment hoist, HVAC equipment and all other necessary components above grade.
- The superstructure should be aesthetically suitable for the location of the pumping station.
- Soundproofing of Generator Room using acoustic tiles.

(ii) The new building foundation is to be utilized as part of the footprint for the new superstructure.

(iii) Design all superstructure exterior walls to have insulation and vapour barrier along with lower level walls to 3 metres below grade.

(b) Civil and Municipal Engineering

(i) Provide design for setup of permanent bypass pumping including:

- Designing a new Pump Out Chamber where future submersible style pumps with a temporary force main can be installed for the purposes of bypass pumping. Submersible pumps and temporary force main are not to be installed as part of the project. Pump Out Chamber should include a means for isolating the Wet Well (such as installing a Positive Gate with operator at grade level).
- Two (2) new Permanent Bypass Vault Manholes to house force main valve connections (Lift Station and Bypass Pump force main connections). Temporary force main tie-in shall be designed using a wye connection for future pipeline pigging. It is planned that the assembly would remain after

temporary bypass pumping is completed for City to perform bypass pumping in the future.

- Design a new SRS Intake Gate Chamber with three (3) separate areas to access sewer lines, flap gate and positive gate areas. SRS Intake Gate Chamber shall include one (1) large diameter sewer Flap Gate, one (1) large diameter sewer Positive Gate with Operator handle located at the surface (for lowering and raising gate) along with a manually adjustable weir. Each area shall include a stainless steel ladder to access the bottom along with equipment and include removable hatches at the surface.

(ii) Repairs to existing paved surfaces around the Station property.

(iii) Provide design for connection into existing potable water supply line (on west side of Kilkenny Drive) and provide a new potable water supply to the Lift Station. Water line shall be designed to be installed trenchless below Kilkenny Drive.

(iv) Provide design for connection into existing natural gas line (below Kilkenny Drive southbound lane) and provide a new natural gas supply to the Lift Station. Natural gas line shall be designed to be installed trenchless below Kilkenny Drive northbound lane.

(c) Geotechnical Engineering

(i) The Consultant will be required to have two (2) test wells installed and piezometers installed to monitor the ground water levels. Ground water monitoring is required to be monitored continuously from April till November to see the fluctuations in ground water levels.

- The Consultant shall apply costs associated with installation of test wells by a drilling Contractor to be applied towards the Additional Work Allowance.

(ii) Arrange for four (4) geotechnical test bore holes to be drilled to investigate soil conditions. All bore holes shall extend beyond the bottom of the proposed structures to facilitate construction. Boles holes to be provided at the following locations:

- Linacre Lift Station – Quantity 2
- SRS Intake Gate Chamber – Quantity 1
- Pump Out Chamber - Quantity 1

(iii) The Consultant shall prepare a separate Geotechnical Report to support construction of the Linacre Lift Station, Pump Out Chamber, Permanent Bypass Vault Manholes and SRS Intake Gate Chamber.

(d) Structural Engineering

(i) Ensure that all building design upgrades are comply with the Manitoba Building Code, latest edition.

(ii) Provide design for a new cast in place concrete Wet Well structure. Structure to be designed to allow upstream gravity sewer along with four (4) pump intake lines.

(iii) Provide design to install a new stainless steel ladder for entry into the Wet Well.

(iv) Provide design for a new superstructure sufficient in size and layout to adequately accommodate the proposed installation of all required above grade equipment and components, etc. The building shall be insulated and be code compliant with all building codes. The new structure shall be designed with trusses to be a gable roof, complete with metal roofing, eavestroughs and downspouts along with a double main entrance door. Provide seismic calculations for the new buildings required as part of Manitoba Building Code **2024 and National Building Code 2020**.

(v) Provide design of all interior substructure painting for floors, walls and ceilings.

(vi) Design a new drywell substructure of sufficient size to house all new equipment. The new substructure for the wastewater pumping station shall be designed to include:

- Pump Room, Motor Room and Bypass Vault;
- Code compliant stairs and ladder on opposite sides to access the Motor Room and Pump Room;

- Catwalk area in the Pump Room for accessing each lift pump discharge flow meter. The catwalk is also to be used for accessing Pump Room lights.
- The Lift Station will require suspended floor slabs to support equipment and be used for staff to access equipment. Provide structural analysis on the floor slabs and provide structural reinforcement to make the floor slabs safe for use. Include all steel reinforcing requirements along with any new vertical supports required.
- Include Pump Room (Dry Well) sump pump pit with floor to be sloped so any water drains to the sump pit.

(vii) Provide design to include new swing gates around all Lift Station floor hatches.

(viii) Design removable barriers that can be installed around interior floor hatches when hatches are opened.

(ix) 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.

(x) Design 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. Main Floor shall use an electric (120 VAC rated) hoist while Motor Room and Pump Rom hoists shall be manually operated.

(xi) Design new housekeeping pad(s) for MCC's and VFD's along with standby generator.

(xii) Design new concrete support slabs for new pumps and piping.

(xiii) Provide structural design for new SRS Intake Gate Chamber to include the following:

- Installation of one (1) large diameter sewer Flap Gate.
- Installation of one (1) large diameter sewer Positive Gate with Operator handle located at the surface (for lowering and raising gate).
- Installation of a manually adjustable weir.
- Stainless Steel ladders to access each area.
- Removable hatches to remove gates.
- Six (6) bollards to protect gate chamber.

(xiv) Provide structural design for new Pump Out Chamber along with Bypass Pumping Chambers.

(xv) Design new Patricia Avenue Weir Chamber and Maple Grove Park Flow Monitoring enclosures to be on a concrete slab.

(e) Mechanical Engineering – Process Pumping and Piping

(i) Ensure that all mechanical process design complies with the Manitoba Building Code (latest edition).

(ii) The Consultant shall develop a new excel file to include new hydraulic system curves along with preliminary pump curves for the Linacre Lift Station. The curves shall include:

- System curve shall include one (1) force main in operation and two (2) force mains in operation;
- Preliminary pump curves shall include curves for one (1) pump in operation, two (2) pumps in operation, three (3) pumps and theoretical four (4) pumps in operation. Provide recommendations for pump speed (based on pumping unit specifications) to be utilized based on full size impeller and pipe diameter size to provide maximum pumping efficiency.

(iii) Provide design recommendation for installation of three (3) new wastewater lift pumps and pump motors along with space to install a fourth (4^{th}) pump in the "dry-pit" section of the Station. New wastewater lift pumping units (pumps, motors, driveshafts, guards, etc.) shall be designed such that:

- 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.
- Pumps shall be sized such that only two (2) out of the three (3) installed pumps shall be required to be run at the same time to keep up with the modelled 2055 wet weather flows in D10.
- Pumps shall utilize double mechanical cartridge seals that require potable water for sealing. Pump seals that only utilize single seals and/or seals not requiring seal water will not be acceptable.
- The pumps shall utilize 95% to full (100%) sized impellers run at 1200 RPM or lower in order to minimize rag clogging. Unless reviewed and approved by the City, trimmed impellers below 95% full size will not be acceptable for the station.
- Pump motors shall be 575 Volt, 3-phase, 60 Hertz and be premium efficiency.
- Pump motors and drive shaft shall be sized for the full-size pump impeller. Under no condition shall the motor and drive shaft be sized for a trimmed impeller.
- Vibration and temperature monitoring instruments are required on all four (4) bearings per pump including, the motor end (drive shaft and motor end side) along with pump end shaft (drive shaft and pump end side).
- The 2020 and 2025 PDWF and PWWF rates are to be determined by the Consultant.
- Pumps must be able to rotate through the duty cycle so that the lead pump changes with ever cycle.
- Pumps must be capable of selected duty for both PLC Mode and Local (Backup) Mode such that City staff can decide which pump always starts/stops first.
- Pumps must be capable of being run in reverse by VFDs for unclogging/de-ragging purposes.
- Each pump shall include a complete rebuild kit for overhaul of each pump. This includes spare parts such as: impeller, upper bearings (motor side) set, lower bearings (pump side) set, mechanical seal set, wear rings, gaskets, O-rings, AEGIS ground ring and associated hardware.
- The Consultant will be required to pre-qualify a minimum of three (3) pump suppliers and models to be listed on the Construction Tender specifications.

(iv) Provide design to install four (4) new lift pump intake process piping, including all valves and fittings inside the Lift Station. New intake piping shall be designed to include the following:

- Each lift pump intake piping shall include a manually operated gate stem (with external position indicator) valve along with piping and pipe fittings to connect with the pump intake flange. New lift pump intake piping shall be separate for each pump (i.e. pump intake piping is not tied together).
- New stainless steel inlet piping going into the Wet Well complete with wall penetration holes for new piping to be installed. All wall penetrations shall be properly sealed to prevent the ingress of wastewater along with gases from passing into the pump room (dry well).
- 4th pump intake will be for a future installed pump. Valve will be required to include a blind flange to seal off piping.

(v) Provide design to install new lift pump discharge process piping, including all valves and fittings inside the Lift Station. New discharge piping shall be designed to include the following:

- Each lift pump discharge piping shall include a check valve, flow meter, manually operated isolation valve (with external position indicator), along with pipe and pipe fittings to connect with pump discharge flange.
- Flow meters on each pump discharge piping shall be 24 VDC electromagnetic Siemens SITRANS F M MAG 6000 series flow transmitters complete with SITRANS F M MAG 5100W series flow sensors and Remote Wall Mount Kits FDK:085U1053 as standardized by the City. Each flow meter shall include a 4-20 mA output signal and tied into the PLC Control Panel for monitoring. Flow meters shall be designed such that they are easily accessible (without the use of a ladder) for maintenance work such as calibration.
- All lift pump discharge piping shall include all pipe and pipe fittings to tie into a common pipe header (manifold). The header (manifold) would then split off to connect into both force mains. Each force main will require a new manually operated gate valve.
- New wall penetrations of force mains shall be properly sealed to prevent the ingress of water.

(vi) Provide design to install a fourth (4^{th}) future installed pump isolation valve on the pump discharge header (manifold). Valve will be required to include a blind flange to seal off piping.

(vii) All lift pumps, check valves and flow meters shall be designed such that they are between two (2) isolation valves so they can be taken offline for maintenance purposes without taking force main offline.

(viii) Design force main by-pass pumping connections, complete with bypass vault manhole assembly.

(ix) Provide design to bring a new potable water line to the station.

(x) Installation of a new water supply meter and backflow prevention located on the Main Floor level. Provide a new water pressure instrument for monitoring of low pressure and tie into PLC Control Panel.

(xi) Installation of a new Pump Room sump pump and new discharge piping to the Wet Well. Sump pump shall be sized to be 120 VAC, 1 HP. Provide isolation valves and check valve(s) on new discharge piping.

(xii) Provide new seal water systems, separate for each lift pump. Seal water shall automatically operate by a solenoid valve when lift pump is running and utilize a flow meter connected into the PLC Control Panel. Provide a manual bypass line for each seal water system. Provide manually operated valves in order to utilize bypass line and to take solenoid line out of service for maintenance activities.

(xiii) All Lift Station areas/rooms (excluding Wet Well) process pipe work that penetrates exterior walls (force mains, etc.) shall be properly sealed to prevent the ingress of water.

(xiv) Provide design for redundant level sensing piping systems. Each level sensing piping system shall consist of a Siemens SITRANS P DS III differential pressure transmitter, level site glass (gauge), wall penetrations into the Wet Well, floor mounted piping support, isolation (ball) valves along with a clean out port for a water hose. The complete level gauge (other than flange connection into the Wet Well) to be designed to be taken fully offline without the need to drain the Wet Well. Level gauges are to extend into the Motor Room floor for easy access of cleanout ports.

(f) Mechanical Engineering – HVAC System and Generator

(i) Ensure that all mechanical HVAC complies with the Manitoba Building Code (latest edition), NFPA 820 Fire Protection in Wastewater Treatment and Collection Facilities (latest edition).

(ii) Provide design for a permanent standby natural gas generator including:

- Meeting CSA B149.1 (Natural Gas and Propane) code latest edition and tie into HVAC system for high methane gas levels.
- Provide design to bring a new natural gas service line to the generator including a direct regulating actuator.

- Generator exhaust to be designed to include a Hospital Grade Silencer with venting going outside.

(iii) Provide design for new Lift Station HVAC system that should incorporate six (6) continuous Air Changes per Hour (ACH) of seasonally heated ventilation. The entire Main Floor level (including Generator Room), Motor Room, Pump Room (Dry Well) and Bypass Valve Room areas are all required to be ventilated. All HVAC fans shall be rated 575V, 3-phase, 60 Hz. Preference is to utilize fans that are direct driven rather than belt driven. If HVAC fans utilize a belt system, a current sensor will be required with signal sent to the PLC for monitoring for broken fan belts.

(iv) Each HVAC system shall include a removable filter, supply fan, duct heater and exhaust fan. HVAC systems shall be designed with maintenance activities in mind such that the top of each filter, fan and duct heater is no more than 2.5 metres above finished floor level.

(v) Provide design to install new outdoor air conditioning units for cooling Lift Station Main Floor level. The preference is to have one (1) air conditioning unit cool all areas.

(vi) The HVAC systems shall utilize modulated 0-10V dampers to incorporate 50% recirculated air when unoccupied and no high gas alarm. The HVAC systems shall provide 100% fresh air when occupied or when a high gas alarm is detected. HVAC control shall be accomplished by standalone HVAC controllers with monitoring status being sent to PLC panel. Electric heat shall be used over natural gas heat.

(vii) Design the means to determine Station occupancy by utilizing the facility light switches and integrating into the HVAC controllers.

(viii) Design the new Lift Station HVAC system to adequately fit in the layout of the designed substructure. Provide heated supplied air to all levels of the Lift Station (Main Floor, Motor Room, Pump Room, Bypass Valve Room, etc.). Install ducting and relief dampers as required.

(ix) Design Station ventilation using modulated dampers with electric actuators for all HVAC outdoor air, return and exhaust ducts. All damper status signals shall be designed to be sent to the PLC control panel for monitoring.

- Preference is to have one (1) combined HVAC system and one (1) air conditioning unit to ventilate all Lift Station Rooms (including Generator Room)
- Cooling of standby generator will require a second HVAC control system.

(x) All Lift Station (Main Floor and Generator Room) mechanical services penetrating exterior walls/ceilings (HVAC ductwork, dampers, water piping, natural gas piping, etc.) shall be properly sealed to prevent the ingress of water.

(g) Electrical Engineering

(i) Refer to City of Winnipeg Electrical Design Guide for requirements associated with City of Winnipeg Wastewater Lift Stations.

(ii) Ensure that all electrical design complies with the Manitoba Building Code (latest edition) along with Manitoba Electrical Code (latest edition).

(iii) Prepare a spring demand load list with three (3) lift pumps running along with new HVAC and miscellaneous electrical loads. The demand load list will be used to install a new electrical service. The Consultant will be required to coordinate with Manitoba Hydro and prepare a new electrical service application on behalf of the City.

(iv) Review new pump start frequency data to confirm the expected number of pump starts within various dry and wet weather flow conditions to determine if station operation meets expected requirements.

(v) Provide design of a new Customer Service Termination Equipment (CSTE) to include Manitoba Hydro metering transformers, remote enclosure along with service entrance section to include a main breaker.

(vi) Provide design for a new automatic transfer switch (ATS) and tie into new PLC Control Panel for monitoring of on Utility Power, on Generator Power and Alarm.

(vii) Provide design for backup power (standby generator or 3-phase UPS system) at the Station. The Consultant will be required to pre-qualify a minimum of three (3) generator suppliers and models to be listed on the Construction Tender specifications.

(viii) Provide design for the following:

- Generator breaker to include new LSI type breaker with auxiliary status contact tied into new PLC Control Panel for monitoring. A second breaker shall be designed to feed a permanent load bank.
- Include a new outdoor permanent stepped 600 VAC load bank for maintenance testing of the generator. The load bank shall be capable of testing the generator at 25%, 50%, 75% and 100% loading.

(ix) Provide design for a new normal power 3-phase, 600 volt, 60 Hz, 4-wire Motor Control Centre (MCC) located on the Main Floor. The MCC shall be a Schneider Electric Model 6 MCC and include the following:

- Main breaker complete with adjustable Long, Short and Instantaneous (LSI) settings. Main breaker shall be in a service entrance compartment,
- Digital power meter connected to PLC Control Panel for SCADA monitoring with metering transformers located outside of service entrance compartment,
- Provide for the installation of a Transient Voltage Surge Suppressor (TVSS) with signal tied into the new PLC Control Panel.
- Provide a breaker complete with adjustable Long, Short and Instantaneous (LSI) settings to feed automatic transfer switch normal power supply,
- Provide separate breakers for each 3-phase heating loads,
- Design for spare spaces for future expansion.

(x) Provide design for a new emergency power 3-phase, 600 volt, 60 Hz, 4-wire Motor Control Centre (MCC) located on the Main Floor. The MCC shall include the following:

- Provide for the installation of a power fail relay and tie into the new PLC Control Panel with automatic reset.
- Provide separate breakers complete with adjustable Long and Instantaneous (LI) settings for each pump VFD enclosure.
- Provide starters for the 3-phase for all HVAC ventilation fans,
- All HVAC starters shall include a selector switch for manual, off and auto modes along with the following signals sent to the PLC Control Panel for monitoring, Run status, Fault status and
- All starters shall incorporate pilot devices including, 3-position selector switch (hand, off, auto modes) and lights (Run, Fault). The starters shall include a current proving switch to detect when motor is running below rated full load current. The following signals are required to be sent to the PLC Control Panel for monitoring: Run status, Fault (Overload) status and Undercurrent status.
- Provide a breaker for a 120/240V transformer,
- Design for spare spaces for future expansion.

(xi) Provide design for new Schneider Electric Variable Frequency Drives (VFDs) standalone enclosures (separate from MCC) for powering the lift pumps.

- Pump VFDs shall include line and load side filters along with terminals for all field (power & control) cabling to terminate at. The following signals are required to be sent to the PLC Control Panel for monitoring: Ready status, Forward Run status, Reverse Run status, VFD failure, Auto Mode, Manual Mode, bearing vibrations, motor speed and motor current. The following signals will be received from the PLC Control Panel for control: Speed Set, Run Forward Command and Run Reverse Command. Ready status shall be activated when there is control power available, no emergency stops are pushed, no pump vibration lockout and pump is either in Manual or Auto Mode of operation.

- All pump VFD signals between VFD enclosure and PLC Control Panel shall be hardwired.
- VFDs shall incorporate pilot devices including emergency stop, start/stop pushbuttons, 3-position selector switch (manual, off, auto modes), indicator lights (Ready, Pump Forward Run, Pump Reverse Run, VFD/Pump Trouble), speed potentiometer, runtime counter, and enclosure fans. Speed potentiometer will be used for manual speed adjustment in Auto Mode (via Local Mode of operation) or Manual Mode.
- All pump/motor instruments including vibration and temperature shall be brought to an HMI relay to be installed on each VFD enclosure door. At this time it is planned that the HMI controller will be Schneider Electric HMISCU8B5 complete with 5.7" touchscreen along with digital and analog signals. Replace existing Station 120/240V transformer and panelboard.

(xii) Provide design for entire Lift Station 120/240V loads and wiring, including all lighting, receptacles and conduits. All areas/rooms all require new lighting and receptacles. All lighting shall be installed in easily accessible locations so lights can be replaced when needed.

(xiii) Provide design for new battery-based emergency lighting to be provided in all areas. All Station emergency light(s) shall tie into one (1) central battery bank. Emergency lighting shall be designed to turn on when there is a power failure at the station and/or individual lighting circuits lose power.

(xiv) Provide design for Station exterior lighting, 120 VAC rated light with each lighting having the ability to be dimmed using 0-10V.

(xv) Provide design for new Station exterior lighting and emergency lighting to be within a single control panel located on the Main Floor. All exterior lighting to be controlled by a 0-10V dimming controller along with manual controls for adjustment of light output.

(xvi) Identify the electrical classification of all areas of the wastewater pumping station, considering the proposed ventilation design and currently accepted standards for wastewater facilities.

(xvii) All electrical code requirements to be satisfied. All electrical equipment and wiring shall be designed for the hazardous areas to be installed within.

(xviii) Provide recommendations regarding the proposed facility wiring type (Teck cable, Aluminum conduit or PVC conduit.

(xix) Design new station grounding grid as required to meet code requirements and good practice.

(xx) Provide design for a new Maple Grove Park Flow Monitoring enclosure including:

- Floor mounted enclosure complete with hinged door and with padlock lockable handle.
- Preparing a demand load list for installing a new electrical service. The Consultant will be required to coordinate with Manitoba Hydro and prepare a new electrical service application on behalf of the City.
- New enclosure grounding grid.
- 120/240V distribution panelboard.
- 120V interior lights and GFCI receptacle.
- PLC Panel.

(xxi) Provide design for a new Patricia Avenue Weir Chamber Monitoring floor mounted enclosure with padlock lockable handle including:

- Preparing a demand load list for installing a new electrical service. The Consultant will be required to coordinate with Manitoba Hydro and prepare a new electrical service application on behalf of the City.
- New enclosure grounding grid.
- 120/240V distribution panelboard with surge protection.
- 120V interior lights and GFCI receptacle.

- PLC Panel.

(h) Automation and Instrumentation Engineering

(i) Provide design for a new Lift Station PLC Control Panel. Provide recommendations for required upgrades to sufficiently run the Station functions. Redundant communication shall be designed to Operation's SCADA system utilizing DNP3 communication protocol. Provide design for a new PLC Control Panel to include the following:

- Two-door, floor mount NEMA 12 enclosure complete with inner panel and foldable laptop table.
- Schneider Electric M580 PLC as standardized by the City complete with power supply, processor, NOR communication cards, discrete I/O cards and analog I/O cards. A new HMI screen shall be provided on the Control Panel door.
- Precision Digital process meter complete with programmable output relays and 4-20 mA output signals for connection of differential pressure transmitter level reading. The process meter is required for Local Mode operation of the differential pressure transmitter. Should an ultrasonic level transmitter not work for this application, two (2) Precision Digital process meters will be required. Utilize a contact switch on each level controller and tie into the PLC for high wet well level alarm.
- New PLC Control Panel shall include two (2) 120 VAC to 24 VDC power supplies with fail monitoring on each tied into the PLC.
- Wireless (cellular) communication modem. For redundant communication, wired (PSTN) connection to be used. Majority of PSTN modem suppliers have since phased out the PSTN modems. The City has since switched to Bausch Datacom DinBox PSTN RS485 Modem for PSTN modems that are readily available and are being supported for the foreseeable future. The Consultant will be required to coordinate with BellMTS and prepare a new service application on behalf of the City.
- Include a 24 VDC Uninterruptible Power Supply (UPS) complete with a detachable battery pack sized for a minimum of 12AH. UPS shall include monitoring points: UPS fail alarm, UPS on battery and UPS charging.
- Pilot devices including 2-position selector switch for alarm test mode (normal and test mode), 3-position selector switch for Local Mode control (Level Transmitter A, both Transmitters and Level Transmitter B), push buttons (PLC Reset, PLC Mode, Local Mode) along with Schneider Electric PLC HMI screen.
- Terminal blocks for 120 VAC and 24 VDC power distribution along with pump control circuits. Terminal blocks shall also be designed for connecting all I/O field wiring along with connecting pre-manufactured cabling to each PLC I/O card. All wiring shall be contained within wiring ducts.
- Control relays with LED indicating lights as needed.
- 120 VAC power fail monitoring for each circuit brought to the PLC Control Panel.
- 120 VAC Surge arrestor modules.

(ii) Provide design for installation of three (3) flow transmitters (1 for each pump). Siemens SITRANS F M MAG 6000 series flow transmitters complete with 5100W series flow sensor as standardized by the City are to be used to totalize individual pump discharge along with Station total discharge. Power supply shall be 24 VDC.

(iii) Make recommendations regarding all the I/O to be utilized.

(iv) Station to have the ability to run pumping automatically in PLC Mode (via the PLC) along with Local Mode (via local level controllers and completely independent of the PLC). Selection of operation modes shall be through push buttons on the PLC Control Panel. PLC Mode shall automatically fail over to Local Mode. The Station shall only be capable of being put into PLC Mode via the push button (i.e. can not be done through SCADA).

(v) Design new redundant level site glass controller systems for pump run operations utilizing a Siemens SITRANS P DS III Differential Pressure Transmitters as standardized by the City complete with output relays and 4- 20 mA output signal. Level site glass controller system shall include:

- Differential Pressure Transmitters shall be on separate level gauges, with each level gauge including: an isolation valve, a calibration port and level gauge sight glass with drain. Transmitters shall not be averaged at the transmitter side.
- Each level gauge shall include a removable top to allow a water hose to be used for cleaning purposes. Include markings to indicate each pump duty start and stop level setpoints along with high wet well and high high wet well levels.
- Differential Pressure Transmitter shall be 100mm flange mounted transmitters.
- Any sensors in the lower level will require a visual reference for maintenance purposes.
- Identify and include in the design the required programmable pump controls to allow for level transmitter redundancy.
- Level reading (4-20 mA signal) shall be sent to the PLC Control Panel for monitoring.

(vi) Design a new SSO Panel to monitor new SSO instruments. Provide tie-in connections between SSO Panel to new PLC Control Panel for remote monitoring of SSO instruments. Design SSO Panel to be relocated to the Main Floor.

(vii) Provide design for new SRS Chamber SSO Instruments with connections going to a new Lift Station PLC Control Panel. Provide design to include the following:

- Installation of two (2) ultrasonic level transmitters for monitoring of upstream sewer and downstream (SRS Outfall) levels. Siemens Multiranger 100/200 series level transmitters complete with EchoMax transducers as standardized by the City.
- Provide new level float switch in the SRS intake Chamber to monitor for weir overflow.
- Provide new instrument to monitor flap gate inclination angle.

(viii) Design HVAC system to have its own controller system separate from PLC controls. All dampers and equipment status signals shall be hardwired to the PLC for monitoring. Modulated dampers will be required to be 4–20 mA or 0–10 V output to the PLC. Preference for On/Off dampers is to have two (2) digital inputs (fully open and fully closed) if available to be monitored at the PLC.

(ix) 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. HVAC Control Panel shall be located in the Electrical Room.

(x) Each HVAC filter shall include a differential pressure switch with signal monitored at the PLC for plugged filters.

(xi) Provide design for a new MSA X5000 methane gas detector as standardized by the City to be installed within the Generator Room. The gas detector shall include an external horn/strobe along with tie ins to HVAC controller and generator control panel. Upon a high-level methane gas detected, the generator shall be required to be shut down and/or prevented from starting, the external horn/strobe shall operate along with 100% fresh air supplied to the Generator Room. Gas analog readings and detector fail discrete signals to be brought to the PLC Control Panel for monitoring.

(xii) Provide design for a new MSA X5000 Hydrogen Sulfide (H2S) gas detector as standardized by the City to be installed within the Electrical Room and tied into the Lift Station HVAC controller. Upon a high-level of H2S gas detected, the Lift Station shall be provided with 100% fresh air supplied. Gas analog readings and detector fail discrete signals to be brought to the PLC Control Panel for monitoring.

(xiii) Provide design to tie-in ATS and backup power to the PLC Control Panel for monitoring. Signals should include: ATS normal supply, ATS backup power supply, ATS fail, backup power fault, backup power breaker status and backup power running. Provide design for shunt trip of generator load bank breaker.

(xiv) Provide pumping strategy control narrative that considers reducing clogging and ragging of the pumps. Control narrative shall include operation by HMI touchscreen and remote by SCADA to run the pumps in the reverse direction at low speeds.

(xv) Provide design to monitor station room temperature using Siemens SITRANS TF320 series type as standardized by the City and tied into the PLC Control Panel. Provide temperature transmitters for the following areas: Electrical Room, Generator Room, Motor Room and Pump Room (Dry Well). Provide recommended low and high temperature setpoints.

(xvi) Provide details regarding the type and configuration of the ventilation controls. The ventilation controls will be separate from the MCC controls. HVAC system to be monitored at the PLC for low air flow, plugged filters and heated air temperature.

(xvii) Identify and propose other instrumentation as required. Coordinate with the Water and Waste Department regarding PLC and associated control instrumentation.

(xviii) 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 (in the Electrical Room).

(xix) Provide two (2) separate wet well high level statuses from the process meters where the differential pressure switches tie into. Statuses are required to be monitored at the PLC.

(xx) Provide new level float switch in the Lift Station Pump Room (Dry Well) to monitor for station flooding. Provide level switch connections for status of each to the PLC.

(xxi) Provide design for a new Maple Grove Park Flow Monitoring PLC Panel along with a new Patricia Avenue Weir Chamber Monitoring PLC Panel. Provide design for each new PLC Panel to include the following:

- wall mount NEMA 12 enclosure complete with inner panel.
- Schneider Electric M580 PLC as standardized by the City complete with power supply, processor, NOR 2200H communication cards, discrete I/O cards and analog I/O cards. A new HMI screen shall be provided on the Control Panel door.
- New PLC Control Panel shall include one (1) 120 VAC to 24 VDC power supply with fail monitoring tied into the PLC.
- Wireless (cellular) communication modem designed to Operation's SCADA system utilizing DNP3 communication protocol.
- Include a 24 VDC Uninterruptible Power Supply (UPS) complete with a detachable battery pack sized for a minimum of 3.4AH. UPS shall include monitoring points: UPS fail alarm, UPS on battery and UPS charging.
- Pilot devices including 2-position selector switch for alarm test mode (normal and test mode) along with Schneider Electric PLC HMI screen.
- Terminal blocks for 120 VAC and 24 VDC power distribution. Terminal blocks shall also be designed for connecting all I/O field wiring along with connecting pre-manufactured cabling to each PLC I/O card. All wiring shall be contained within wiring ducts.
- Control relays with LED indicating lights as needed.
- 120 VAC power fail monitoring for each circuit brought to the PLC Control Panel.
- 120 VAC Surge arrestor modules.

(xxii) Provide design for a new Maple Grove Park Transition Chamber Instruments with connections going to a new Maple Grove Park PLC Panel. Provide design to include the following:

- Installation of two (2) flow transmitters (1 for each force main). Siemens SITRANS F M MAG 6000 series flow transmitters complete with 5100W series flow sensor as standardized by the City.
- Installation of one (1) ultrasonic level transmitter for monitoring of transition chamber level. Siemens Multiranger 100/200 series level transmitters complete with EchoMax transducers as standardized by the City.
- Provide new level float switch in the transition manhole to monitor for high level.

(xxiii) Provide design for a new Patricia Avenue Weir Chamber Instruments with connections going to a new Patricia Avenue Weir Chamber PLC Panel. Provide design to include the following:

- Installation of one (1) ultrasonic level transmitter for monitoring of transition chamber level. Siemens Multiranger 100/200 series level transmitters complete with EchoMax transducers as standardized by the City.
- Provide two (2) new level float switches in the weir chamber to monitor for high level and weir overflow.

D15. CONTRACT 4 (UPSTREAM GRAVITY SEWERS) DETAILED ENGINEERING DESIGN

D15.1 The Upstream Gravity Sewers have been developed to the preliminary design stage and is shown on the drawings in Appendix B. The Preliminary Design Report shown in Appendix B has not been updated to reflect the Detailed Design requirements. The Consultant will be required to provide engineering design for the following changes

(a) Drawings do not use the correct title blocks, drawing numbering or follow City Design Guidelines;

(b) Setup for future flow splitting including increasing 900mm gravity sewer to be 1050mm and lowering 1050mm pipe at Patricia Avenue diversion chamber from 224.7m to 221.8m (reduction of 2.9m).

(c) Optimization of the weir height required at the Patricia Avenue Weir Chamber, along with where the flow diversion from the Fort Garry Interceptor takes place and new upstream sewer arrangement near the weir diversion structure;

(d) Designing a 250mm gravity sewer system to redirect flows from Kilkenny Lift Station to Linacre Lift Station, including new resident wastewater service connections;

(e) Setting up Patricia Avenue weir chamber to include an adjustable manual weir. The City does not want an automated adjustable weir.

D15.2 Provide detailed engineering services including:

(a) Civil and Municipal Engineering;

(b) Structural Engineering.

D15.3 Engineering Design Services

(a) Civil and Municipal Engineering

(i) Provide design for approximately 315 metres of 1050 mm gravity sewer pipe installations (exact sewer length/size subject to change based on detailed design refinements) including:

- Routing alignment of the new sewer pipes including sections where open cut and trenchless installations are to be performed along with manhole and shaft locations.
- Detailing any underground structure crossings along with buried utility services.
- Identifying where recommended launch and receiving shafts are to be installed along with shoring methods for trenchless installs.
- Provide design for Patricia Avenue Weir Chamber for connection into 900 mm wastewater sewers and to redirect flows towards Linacre Lift Station. A manual weir should be installed.

- Provide design for Kilkenny Drive Weir Chamber for connection into 200 mm, 450 mm and 900 mm wastewater sewers and to redirect flows towards Linacre Lift Station. A manual adjustable weir should be installed.

(ii) Provide design to install approximately 750 metres of a new offline 250 mm wastewater gravity sewer running along east side of Kilkenny Drive to direct Kilkenny Lift Station flows to Linacre Lift Station. Design new resident service connections on both east and west side of Kilkenny Drive to connect into new 250 mm sewer. 250 mm sewer to be installed trenched / trenchless below driveways.

(iii) Provide design to abandon existing Kilkenny Upstream 250 mm gravity wastewater sewer.

(iv) Provide design for pavement/site restorations for all open cut, manhole and shaft installations.

(b) Structural Engineering

(i) Ensure that all building design upgrades are comply with the Manitoba Building Code, latest edition.

(ii) Provide recommendations for shoring of all open cut excavations, manholes along with launching and receiving shafts for trenchless installs.

(iii) Provide design for new Patricia Avenue Weir Chamber to include the following:

- Lower level area to areas to access sewer lines existing and new sewer lines.
- Installation of a manually adjusted weir.
- Stainless Steel ladders to access lower level.
- Four (4) bollards to protect gate chamber.

D16. CONTRACT 5 (KILKENNY LIFT STATION DEMOLITION) DETAILED ENGINEERING DESIGN

D16.1 The Kilkenny Lift Station Demolition has not been included during the preliminary design stage shown in Appendix B. The Consultant will be required to provide engineering design for the following changes

(a) Demolition of Kilkenny Lift Station

D16.2 Provide detailed engineering services including:

(a) Civil and Municipal Engineering;

(b) Electrical Engineering:

(c) Mechanical Engineering;

(d) Structural Engineering.

D16.3 Engineering Design Services

(a) Civil and Municipal Engineering

(i) Detailing any underground structure crossings along with buried utility services.

(ii) Abandoning/removing gravity sewer.

(iii) Abandoning force main (outside dry well).

(iv) Provide design for pavement/site restorations.

(b) Electrical Engineering

(i) Removal of electrical service;

(ii) Removal of all electrical equipment (service equipment, motor starters, motors, panelboards, transformers, lights, receptacles, switches, cabling, etc.);

(iii) Removal of all automation equipment (control panels, cabling, etc.);

(iv) Removal of all instrumentation equipment (field instruments, cabling, etc.).

(c) Mechanical Engineering

(i) Removal of water service;

(ii) Removal of all HVAC equipment (duct work, fans, grilles, dampers, etc.);

(iii) Removal of all process equipment (pumps, valves, meters, water lines, piping, etc.);

(iv) Removing force main (inside dry well).

(d) Structural Engineering

(i) Removal of Wet Well and Dry Well Structures.

D17. CONSTRUCTION AND DEMOLITION DOCUMENTS

D17.1 All drawings are to be drawn in accordance with The City of Winnipeg Manual for Production of Construction Drawings and Water and Waste Departmental requirements. All drawings will be ISO A1 size with automation loop diagrams being 11" x 17". The City will provide the correct CAD title blocks and drawing numbers to be used after the project is awarded.

(a) The Consulting Contract Administrator will provide the correct CAD title blocks to be used. Under no circumstances should the Consultant prepare CAD drawings using title blocks of their choice.

D17.2 Construction and Demolition Drawings are to be prepared by the Consultant and will be included in the Contract Tender Documents. Provide digital PDF's of the Construction Drawings to be posted on the City of Winnipeg web site and MERX for the bidding period.

D17.3 All demolition drawings to be created shall be revision 00. New construction work shall be revision 01 of the same drawing number. All drawing revisions are required to be sealed by a Professional Engineer and included as part of the Construction Tender Packages. For drawings the do not have a demolition component, the construction drawing shall be revision 00.

(a) The Consultant will be required to include the revision history on all construction drawings that include a demolition component to show the demolition revision 00.

D17.4 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.

D17.5 All drawings that include plans, elevations and section details are required to be metric scaled with all unique scalebars shown on the drawings.

D17.6 The Consultant will be required to create all Station layouts such as XREF AutoCAD drawings to be used. It is acceptable for all discipline drawings to attach XREFs. Sealed construction and demolition drawings will be required to bind XREFs into the drawings.

D17.7 The Consulting Contract Administrator will provide the correct City of Winnipeg drawing numbers to use. These drawing numbers shall be used for drawing index, individual drawings along with any drawing references. Under no circumstance shall Consultant internal drawing numbers be used for referencing drawings, including on drawing index.

D17.8 Drawings shall include applicable detail information required for City of Winnipeg Development Permits, applicable Building Permits (including electrical, mechanical, structural, new building construction, etc.) and Waterway Permits.

(a) City of Winnipeg Development and Building Permit applications link:

https://legacy.winnipeg.ca/ppd/permits/Commercial/Resources.stm#tradePermits

(b) City of Winnipeg Waterway Permit application link:

https://legacy.winnipeg.ca/ppd/CityPlanning/Riverbank/WaterwayPermitApplications.stm#1

D17.9 The following General Construction Documents will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Cover sheet showing station location.

(b) Drawing index excel file including drawing numbers and all title lines. Drawings shall be separated out for each discipline. The Consulting Contract Administrator will provide a blank excel file template to be used.

(c) Shop Drawing Submittal List including all Contractor submittals required along with Specification section, Drawing number references where submittal can be found and High Priority submittals (for long lead equipment).

D18. CONTRACTS 1, 2 & 4: ADDITIONAL CONSTRUCTION DOCUMENTS

D18.1 The following General Construction Documents will be required to be produced by the Consultant and reviewed by the City prior to the Contract being posted for tendering:

(a) Shop Drawing Submittal List including all Contractor submittals required along with Specification section, Drawing number references where submittal can be found and High Priority submittals (for long lead equipment).

D18.2 The following sealed Civil Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the Contract being posted for tendering:

(a) Civil Key Plan (showing complete routing path of the Force Mains along with all roads and underground services);

(b) Civil Drawing Index, Location Plan and Legend;

(c) Civil Area Plans and Sections showing all roads, sidewalks, underground services (water, sewer, hydro, communication) along with sewer pipe start and end inverts. Include details of sewer pipes to be abandoned along with receiving and launching shafts for trenchless installations.

(d) Civil Plans and Sections, including separate plans and sections for each shaft along with each manhole including showing all pipes entering and leaving the manholes;

(e) Civil Miscellaneous Details showing structural support details, shaft details, manhole details, tunnelling sections (both cased pipes and uncased).

D18.3 NMS Specification Sections will not be allowed. Specifications will be required to be shown as separate tender write up sections:

D18.4 The Consultant will be required to prepare a standard City of Winnipeg Construction Tender. The following shall be included as part of the tender:

(a) Form A (Bid/Proposal).

(b) Form B (Fees), with line items separated out for each discipline and City standardized equipment.

(c) Tender Part E (Specifications) section writeups to include sections below. Tender Part E sections (other than Applicable Drawings and Specifications) shall be linked to individual Form B cost line items and shall not include NMS specification sections.

(i) Applicable Drawings and Specifications;
- List all Drawing Numbers and Titles.
- List all Specification Section and Titles.

(ii) Mobilization / Demobilization;

(iii) Accessibility Plan;

(iv) Dangerous Work Conditions (Hazardous Confined Space Entry);

(v) Hazardous Materials Work & Disposal;

(vi) Site Development & Restoration;

(vii) Temporary Road Restorations;

(viii) Excavation & Shoring;

(ix) Tree Removal;

(x) Demolition Work;

(xi) Supply and Installation of Manholes (separate for each manhole);
(xii) Construction of New Structures;
(xiii) Cast-in-Place Concrete;
(xiv) Testing and CCTV Inspections; and
(xv) Extra Work Allowance.

(d) All Addendums as required.

D19. CONTRACT 3: ADDITIONAL CONSTRUCTION DOCUMENTS

D19.1 The following General Construction Documents will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Cover sheet showing station location.

(b) Drawing index including drawing numbers and titles. Drawings shall be separated out for each discipline.

(c) Shop Drawing Submittal List including all Contractor submittals required along with Specification section, Drawing number references where submittal can be found and High Priority submittals (for long lead equipment).

D19.2 The following Architectural Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Lift Station Plans and Details.

D19.3 The following sealed Civil Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Permanent bypass pumping plan and section details, including showing pump out and bypass manhole(s), valves and force main connection details. Provide table to indicate flow rates and Total Dynamic Head for duty and standby temporary pumps to be provided. Provide a detail to show temporary level switches / transmitters along with start and stop elevations to be used for bypass pumping.

(b) Civil site services including all buried services, property lines, roads & sidewalks along with Lift Station and Backup Power room locations. All utility (Manitoba Hydro, BellMTS, etc.) scope of work along with Contractor scope of work shall be clearly identified.

(c) Landscape and lot grading plan.

D19.4 The following sealed Structural Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Structural plans and details.

(b) Structural plans and elevations.

(c) Structural floor reinforcement details.

(d) MCC, VFD, PLC Control Panel and standby generator housekeeping pads

(e) Structural pump and piping support details.

D19.5 The following sealed Mechanical Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Mechanical construction plans. New construction plans shall include elevations including mechanical ventilation design details.

(b) Seal water piping construction details.

(c) Mechanical HVAC and plumbing construction plans.

(d) Mechanical HVAC and plumbing construction sections, details and bill of materials.

(e) Mechanical process piping construction plans.

(f) Mechanical process piping construction sections, details and bill of materials.

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

D19.6 The Electrical drawings content shall follow City of Winnipeg Electrical Design Guide sections 19.2 and 19.5. The following sealed Electrical Construction Drawings and Documents will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Single line shall include breaker settings table for all breakers with field adjustable settings along with each branch labelled for MCC bucket location.

(b) Electrical construction plans. New construction plans shall include each room plan layout along with sections view(s) showing all floor levels to show all electrical instruments, lighting, receptacles, motors and HVAC loads. All 120 VAC powered equipment, lighting and receptacles shall show circuit numbers.

(c) Hazardous location plan for all rooms including section view showing all floor levels for the Lift Station.

(d) Grounding riser and installation details.

(e) Motor Control Centre(s) elevation and all VFD enclosure details including showing where all pilot devices (HMI Controllers, lights, push buttons, emergency stops, analog meters, etc.) are located along with all bucket and pilot device equipment lamacoids.

(f) Lift Station panel and luminaire schedules along with schematic diagrams to clearly show all emergency lighting control. Emergency lighting shall tie into a new control panel within the Lift Station.

(g) Separate motor schematics for each motor/pump. All motor schematic branches shall be clearly labelled to indicate what the branch control does. All signals tying into the PLC shall be clearly shown. For pump schematics, provide speed potentiometer for manual adjust of VFD.

(h) Separate motor connection diagrams clearly showing all control field wires for electrical instruments and PLC control panel. For HVAC equipment, it is acceptable to include cable connection details on the motor schematics.

(i) Generator connection diagram showing all field (power and control) cabling. Clearly indicate terminal numbers where all field cabling terminates at.

(j) Automatic transfer switch connection diagram showing all field (power and control) cabling. Clearly indicate terminal numbers where all field cabling terminates at.

(k) Separate Setting Letters for each motor fed by a Variable Frequency Drive and/or Soft Starter.

(l) Setting Letter for Automatic Transfer Switch.

D19.7 The Automation documents content shall follow City of Winnipeg Automation Design Guide sections 22.2, 22.3 and 22.4. The following sealed Automation Construction Drawings and Documents will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Automation plan drawing showing all automation instruments. Include a section view to show all station floor levels indicating elevations at each level.

(b) PLC control panel arrangement and bill of materials. Include an extra sheet to show all control panel terminal blocks arrangement along with PLC rack layouts and PLC pre-manufactured cables.

(c) PLC power distribution schematic with 120 VAC and 24 VDC distribution clearly separated along with redundant power supplies.

(d) PLC networking block diagram clearly showing how wireless and wired connections are made to the PLC.

(e) Separate PLC card schematic drawings for each PLC card is required including showing terminal connection points. All signals shall terminate on terminal blocks with pre-manufactured cabling connecting to the PLC cards.

(f) Pump control schematic clearly showing PLC and Local modes of operation. The automatic pump control operation shall automatically switch to Local Mode when the PLC fails. Local Mode pump control is done directly by relays on the level controller within the PLC Control Panel, PLC mode pump control is done through the PLC discrete output card.

(g) Lift Station HVAC control panel arrangement and bill of materials.

(h) Lift Station HVAC control panel power distribution schematic.

(i) Intrinsically safe junction box arrangement and bill of materials.

(j) Separate Loop diagrams for each instrument. For instruments that utilize common controls/monitoring (such as dampers, bearing monitoring, temperature transmitters, level switches, etc.), it is acceptable to include on the same loop diagram. Include content for any instrument alarming details. All instrument signals shall be clearly indicated on loop diagrams for tie in to the PLC for monitoring. For instruments that appear on multiple loop diagrams such as HVAC Temperature Controllers, notes shall be provided to describe operation and reference to applicable loop diagrams. All Loop diagrams shall include all cabling to be labelled along with cable size information. Duct heater SCR controls, automatic transfer switch, generator control panel, 600 VAC power fail monitoring and 600 VAC TVSS will also require separate loop diagrams.

(k) SSO instrument loop diagrams for tie-in of SSO instruments to SSO Panel and PLC for monitoring.

(l) Instrument List including instrument tag, instrument description, location to be installed, reference to specification section and P&ID drawing number. Clearly identify existing and new instruments along with what instruments are Standardized.

(m) DNP3 Input/output Mapping list including internal PLC generated signals including terminal numbers, I/O module location, I/O point location, DNP3 addresses, instrument tag and description. All signals are required to be mapped, ‘0’ and ‘1’ states for discrete signals along with analog signal ranges (4 mA, 20 mA, 0V, 10V, etc.). All internal software signals are required to be indicated and mapped as well.

(n) Separate Setting Letters for each HVAC Controller.

D19.8 The Process documents content shall follow City of Winnipeg Identification Standard discipline designations and symbols. The following sealed Process Construction Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Lift Station and Generator Room Mechanical HVAC Flow P&ID showing all room areas where equipment is located including all equipment settings and airflow requirements for each room. All HVAC fan signals (between PLC and run operation of the fans as shown on motor schematics) shall be clearly shown on the P&ID.

(b) Lift Pumping P&ID(s) including pump duty control setpoints, all equipment settings and key elevations (High High Wet Well Level, High Wet Well Level, all pump start setpoints, all pump stop setpoints, wet well bottom, etc.). All pump signals (between PLC and run operation of the pumps as shown on pump motor schematics) shall be clearly shown on the P&IDs. All instruments along with PLC signals shall be clearly labelled for their function (i.e. High High Wet Well Level, Motor Bearing High Vibration, etc.).

D19.9 NMS Specification Sections shall be provided for each discipline as required. All equipment labelling and instrument tag names shown on the construction drawings shall be included for applicable specification section writeups. NMS Specification sections at minimum shall include:

(a) General Requirements (Division 01);

(b) Concrete (Division 03);

(c) Fire Suppression (Division 21);

(d) Plumbing (Division 22);

(e) HVAC (Division 23);

(f) Electrical (Division 26);

(g) Communications (Division 27);

(h) Automation (Division 40);

D19.10 The Consultant will be required to prepare a standard City of Winnipeg Construction Tender. The following shall be included as part of the tender:

(a) Form A (Bid/Proposal).

(b) Form B (Fees), with line items separated out for each discipline and City standardized equipment.

(c) Tender Part E (Specifications) section writeups to include sections below. Tender Part E sections (other than Applicable Drawings and Specifications) shall be linked to individual Form B cost line items and shall not include NMS specification sections.

(i) Applicable Drawings and Specifications;
- List all Drawing Numbers and Titles.
- List all Specification Section and Titles.

(ii) Mobilization / Demobilization;

(iii) Accessibility Plan;

(iv) Site Development & Restoration;

(v) Excavation & Shoring;

(vi) Demolition Work;

(vii) Painting Work;

(viii) Supply and Installation of Manholes (separate for each manhole);

(ix) Bypass Vault Manhole and Valve Assembly;

(x) Construction of New Structures;

(xi) Cast-in-Place Concrete;

(xii) Lift Pumping Equipment (Pumps, Motors, Drive Shafts, Guards, Accessories and Spare Parts);

(xiii) Process Work and Valves (Gate Valves, Check Valves, Plug Valves, etc.);

(xiv) Natural Gas Generator;

(xv) City Standardized Equipment (separate sections for each standard supplier);

(xvi) Commissioning;

(xvii) Training;

(xviii) Operation & Maintenance (O&M) Manuals; and

(xix) Extra Work Allowance.

(d) All Addendums as required.

D19.11 The Consultant will be required to prepare an updated InfoWorks model database with a single model scenario documenting the overall detailed design project configuration selected for the Tender phase.

(a) Include a selection list file highlighting the extent of new sewer elements and sewer system modifications part of the Construction Scope of Work.

(b) Updated InfoWorks model database is expected to be delivered during the Tender Phase, but is **not** required to be produced prior to the Project going to Tender.

D20. CONTRACT 5: ADDITIONAL DEMOLITION DOCUMENTS

D20.1 The following sealed Civil Demolition Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Civil site services including all buried services, property lines, roads & sidewalks, Wet Well, Dry Well. All utility (Manitoba Hydro, BellMTS, etc.) scope of work along with Contractor scope of work shall be clearly identified.

(b) Landscape and lot grading plan.

D20.2 The following sealed Structural Demolition Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Structural demolition plans and details.

D20.3 The following sealed Mechanical Demolition Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Mechanical HVAC and plumbing demolition plans and sections.

(b) Mechanical process piping demolition plans and sections.

D20.4 The Electrical drawings content shall follow City of Winnipeg Electrical Design Guide sections 19.2 and 19.5. The Automation documents content shall follow City of Winnipeg Automation Design Guide sections 22.2, 22.3 and 22.4. The following sealed Electrical and Automation Demolition Drawings and Documents will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Single line demolition diagram.

(b) Electrical and Automation demolition plans and section views. Demolition plans shall include each room plan layout along with sections view(s) showing all floor levels to show all electrical, automation and instrument equipment to be demolished.

D20.5 The Process documents content shall follow City of Winnipeg Identification Standard discipline designations and symbols. The following sealed Process Demolition Drawings will be required to be produced by the Consultant and reviewed by the City prior to the project going to Tender:

(a) Lift Station Mechanical HVAC Flow P&ID showing all room areas where equipment is located including all equipment settings and airflow requirements for each room. All HVAC fan signals (between PLC and run operation of the fans as shown on motor schematics) shall be clearly shown on the P&ID.

(b) Lift Pumping P&ID(s) including pump duty control setpoints, all equipment settings and key elevations (High High Wet Well Level, High Wet Well Level, all pump start setpoints, all pump stop setpoints, wet well bottom, etc.). All pump signals (between PLC and run operation of the pumps as shown on pump motor schematics) shall be clearly shown on the P&IDs. All instruments along with PLC signals shall be clearly labelled for their function (i.e. High High Wet Well Level).

D20.6 The Consultant will be required to prepare a standard City of Winnipeg Demolition Tender. The following shall be included as part of the tender:

(a) Form A (Bid/Proposal).

(b) Form B (Fees), with line items separated out for each discipline and City standardized equipment.

(c) Tender Part E (Specifications) section writeups to include sections below. Tender Part E sections (other than Applicable Drawings and Specifications) shall be linked to individual Form B cost line items and shall not include NMS specification sections.

(i) Applicable Drawings and Specifications;
- List all Drawing Numbers and Titles.
- List all Specification Section and Titles.

(ii) Mobilization / Demobilization;

(iii) Accessibility Plan;

(iv) Dangerous Work Conditions (Hazardous Confined Space Entry);

(v) Hazardous Materials Work & Disposal;

(vi) Site Development & Restoration;

(vii) Temporary Road Restorations;

(viii) Excavation & Shoring;

(ix) Demolition Work; and

(x) Extra Work Allowance.

(d) All Addendums as required.

D21. REQUEST FOR QUALIFICATION PROCESS (CONTRACTS 1, 2 AND 3 ONLY)

D21.1 Request for Qualification

(a) After Approval by the Consulting Contract Administrator, submit Construction Contract 1 Request for Qualification Package to City of Winnipeg Purchasing Division for public bidding.

(b) Construction Request for Qualification Package shall be prepared and posted in accordance with the City of Winnipeg Purchasing Division requirements.

(i) the City bid submission forms, Bid Procedures, General Conditions, Supplemental Conditions which are available at https://legacy.winnipeg.ca/matmgt/templates/;

(c) Coordinate review of the package with Purchasing and make changes as requested to the Request for Qualification package.

(d) Provide appropriate response to all Bidders and advice to the City during Tender call and issue Addenda to the Contract documents to answer all questions.

(e) Review bid submissions for completeness and prepare bid tabulations for multiple Tenders.

(f) Perform a complete review of the low Bidder's qualification to determine if they are capable of performing the Work under the terms of the Contract.

(g) Prepare successful and unsuccessful qualified letters and distribute to all Bidders.

D22. PROCUREMENT PROCESS

D22.1 After Approval by the Consulting Contract Administrator, submit the Contract Tender Package to City of Winnipeg Purchasing Division for public bidding.

(a) Construction Tender Package shall be prepared and posted in accordance with the City of Winnipeg Purchasing Division requirements.

(i) the City bid submission forms, Bid Procedures, General Conditions, Supplemental Conditions which are available at https://legacy.winnipeg.ca/matmgt/templates/;

(b) Coordinate review of the package with Purchasing and make changes as requested to the Tender package.

D22.2 Provide appropriate response to all Bidders and advice to the City during Tender call and issue Addenda to the Contract documents to answer all questions.

D22.3 Review bid submissions for completeness and prepare bid tabulations for multiple Tenders.

D22.4 Perform a complete review of the low Bidder's qualification to determine if they are capable of performing the Work under the terms of the Contract.

D22.5 Review and approve of Contractor qualification submittals and ensure submittals are in conformance to the contract qualifications, without relieving the Contractor of their contractual and legal obligations including:

(a) Good standing under The Corporations Act (Manitoba)

(b) Sub-Contractors (Form J);

(c) Workplace Safety and Health Act (Manitoba) Program;

(d) Social Procurement Plan.

D22.6 Coordinate and lead a pre-award meeting with lowest qualified Bidder. Prepare and distribute meeting minutes after meeting has completed. Pre-Award meeting shall involve:

(a) To ascertain that the Contactor understands the scope of work in the Tender.

(b) To determine that the Contractor is capable of meeting the obligations detailed in the Tender.

(c) To secure advisement by the Contractor of intended methods, materials, stages, timelines or sequences of the Contract that are of interest to the Water and Waste Department.

D22.7 Complete a review, analysis, comparison, tabulation, calculation, and evaluation of the Bids received. Make recommendations for award of Tender.

(a) If the bids deviate more than 15% from the Class 1 Cost Estimate, provide justification for the difference in pricing in the award recommendation letter. Submit a Letter of Recommendation, copies of the bids, a Tender comparison sheet, and a Tender tabulation.

D22.8 Following Tender close, submit one (1) electronic copy of the Final Contract Tender Package documents including all addenda.

D23. PLC & HMI CONTROLLER PROGRAMMING

D23.1 The Consultant shall plan for three (3) meetings total, each meeting to be two (2) hours in length for PLC Programming work. The consultant shall ensure that the project manager, PLC Programming Lead and PLC Programming designer attend the discussion meetings. Meetings will be used to update progress to date, anticipated submittals, any ongoing project issues along with ask questions to City staff. The Consultant will be required to prepare and distribute meeting minutes for all meetings.

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

D23.2 Provide three (3) Control Narratives in report format for programming of the PLC. The Control Narrative will be used as a guideline for the Consultant to provide programming of the PLC and set up communication. The Control Narrative shall include all manual and automatic modes of operation for 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. The final control narrative shall be provided in a report format and sealed by an Engineer. Control Narratives should be provided for:

(a) Linacre Lift Station PLC & HVAC Systems;

(b) Maple Grove Park Flow Monitoring PLC System;

(c) Patricia Ave Weir Chamber PLC System;

D23.3 The following Linacre Lift Station PLC Programming Documents will be required to be produced by the Consultant and reviewed by the City after Contract 3 (Linacre Lift Station) Tender period closes:

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

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

D23.4 The following Maple Grove Park Force Main Flow Monitoring PLC Programming Documents will be required to be produced by the Consultant and reviewed by the City after Contract 3 (Linacre Lift Station) Tender period closes:

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

D23.5 The following Patricia Ave Weir Chamber PLC Programming Documents will be required to be produced by the Consultant and reviewed by the City after Contract 4 (Upstream Sewer Work) Tender period closes:

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

D23.6 The program shall use function block programming. The use of any programming (such as structured text) shall be reviewed and approved by the City prior to starting. All branches shall be clearly labelled/documented to indicate what the branch does.

D23.7 Software tag names shall follow City Tag Naming Standard. Utilize standard tag names in the Control Narrative, DNP3 I/O list and Construction Documents.

D23.8 The Consultant will be required to Design and Implement complete programming of the new Linacre Lift Station Schneider Electric M580 PLC that will be used. The Consultant will be required to be utilize Schneider Electric Control Expert 16.2 (or newer) for programming of the PLC with the new NOR 2200H card. The following will be required as part of the PLC Programming:

(a) Provision for a local Human Machine Interface (HMI) touchscreen. The HMI touchscreen shall include the following individual windows, Operations (showing Wet Well level and lift pump status), HVAC Status (including all fans and damper statuses), Pump Details, Pump Trends along with Alarms Table. All symbols to be shown on HMI screen shall follow standard City HMI Layout and Animation Plan Guide. Note that colours for equipment status (run, off, fault, alarm, etc.) used in the City of Winnipeg Wastewater Collection System differ than shown in the HMI Layout and Animation Plan Guide.

(b) HMI touchscreen shall include push buttons for pump duty selection, pumps reverse run. All pump start and stop setpoints shall be shown and be password protected for setpoints to be changed. HMI Pump Details shall animate Wet Well to show the level and include Low Wet Well, High Wet Well and High High Wet Well setpoints.

(c) Provision to include all PLC programming and communication, set up DNP3 mapping including internal PLC variables and establish communication with SCADA.

(d) Provide SCADA Operations Centre the ability to see all incoming signals to the PLC along with output signals.

(e) Provide SCADA Operations Centre the ability to remotely select pump run and cycling options.

(f) Provide cleaning cycle function or auto de-ragging options of the pumps programmed into the PLC logic so that the pumps can run in reverse mode and be capable to run remote from the SCADA Operations Centre.

(g) PLC NOR 200H card for wired (PSTN) communication shall only be setup for SCADA Operations Centre to see I/O monitoring. PLC NOR 2200H card for wireless communication shall be setup for I/O along with control functions.

(h) PLC shall be programmed to receive I/O monitoring signals from each lift pump HMI Controller.

(i) All code branches shall be documented to describe the function of each branch/section of PLC code.

D23.9 The Consultant will be required to Design and Implement complete programming for new Schneider Electric HMISCU8B5 Controllers that will be used with each lift pump VFD. The Consultant will be required to be utilize Schneider Electric Vijeo Designer for programming of the HMI Controller. Programs for each lift pump VFD will be similar but require tag names to match associated VFD & P&ID drawings tag names. The following will be required as part of the HMI Controller programming:

(a) Provision for an HMI touchscreen to include the following individual windows, Main (showing all discrete and analog I/O statuses), I/O Status (showing states of discrete and

analog I/O statuses), Pump Alarm Settings (setpoints and time delays), Pump Lockout Settings (setpoints and time delays) along with Alarms Table.

(b) Provide mapping of all I/O signals along with setpoints and time delays. I/O setpoints and time delays shall be capable of being changed (password protected) on the HMI screen.

(c) Provision to include all HMI Controller programming and communication, set up DNP3 mapping including internal HMI Controller variables and establish communication with SCADA.

(d) Provide a pump alarm and pump lockout signals programmed into the HMI Controller to be sent to separate discrete output contacts. Alarm and lockout signals will include:

(i) Motor Bearing (Upper) Temperature - Analog;

(ii) Motor Bearing (Upper) Vibration - Analog;

(iii) Motor Winding Temperature - Discrete;

(iv) Pump Bearing (Upper) Temperature - Analog;

(v) Pump Bearing (Upper) Vibration - Analog; and

(vi) Time Delays;

(e) HMI Controller shall be setup to provide I/O monitoring to the M580 PLC for SCADA Operations Centre to view. No control functions will be provided from the M580 PLC to the HMI Controller. The City preference is to have the HMISCU8B5 Controllers connect to the PLC via CAT6 cabling in order to reduce the number of I/O cards needed for the pump signals. Should communication to the M580 PLC via CAT6 cabling not be possible, the discrete and analog outputs shall be programmed and hard wired to the PLC for monitoring.

(f) All code branches shall be documented to describe the function of each branch/section of PLC code.

D23.10 The Consultant will be required to Design and Implement complete programming of the new Maple Grove Park Flow Monitoring Schneider Electric M580 PLC that will be used. The Consultant will be required to be utilize Schneider Electric Control Expert 16.2 (or newer) for programming of the PLC with the new NOR 2200H card. The following will be required as part of the PLC Programming:

(a) Provision for a local Human Machine Interface (HMI) touchscreen. The HMI touchscreen shall include the following individual windows, Operations (showing Transition Chamber Level, Force Main Flow Details along with Alarms Table. All symbols to be shown on HMI screen shall follow standard City HMI Layout and Animation Plan Guide. Note that colours for equipment status (run, off, fault, alarm, etc.) used in the City of Winnipeg Wastewater Collection System differ than shown in the HMI Layout and Animation Plan Guide.

(b) Provision to include all PLC programming and communication, set up DNP3 mapping including internal PLC variables and establish communication with SCADA.

(c) Provide SCADA Operations Centre the ability to see all incoming signals to the PLC along with output signals.

(d) PLC NOR 2200H card for wireless communication shall be setup for I/O along with control functions. The PLC will not require any wired communication.

(e) All code branches shall be documented to describe the function of each branch/section of PLC code.

D23.11 The Consultant will be required to Design and Implement complete programming of the new Patricia Avenue Weir Chamber Monitoring Schneider Electric M580 PLC that will be used. The Consultant will be required to be utilize Schneider Electric Control Expert 16.2 (or newer) for programming of the PLC with the new NOR 2200H card. The following will be required as part of the PLC Programming:

(a) Provision for a local Human Machine Interface (HMI) touchscreen. The HMI touchscreen shall include the following individual windows, Operations (showing Weir Chamber Level) along with Alarms Table. All symbols to be shown on HMI screen shall follow standard City HMI Layout and Animation Plan Guide. Note that colours for equipment status (run,

off, fault, alarm, etc.) used in the City of Winnipeg Wastewater Collection System differ than shown in the HMI Layout and Animation Plan Guide.

(b) Provision to include all PLC programming and communication, set up DNP3 mapping including internal PLC variables and establish communication with SCADA.

(c) Provide SCADA Operations Centre the ability to see all incoming signals to the PLC along with output signals.

(d) PLC NOR 2200H card for wireless communication shall be setup for I/O along with control functions. The PLC will not require any wired communication.

(e) All code branches shall be documented to describe the function of each branch/section of PLC code.

D24. CONTRACT ADMINISTRATION SERVICES – NON-RESIDENT

D24.1 Personnel with demonstrated experience in the design and contract administration of the mechanical, electrical, structural, and civil components of the Works are to be assigned to this project.

D24.2 Provide consultation and advice to the Water and Waste Department during the course of construction.

D24.3 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.

D24.4 Conduct monthly progress meetings over Microsoft Teams. Prepare agenda and distribute meeting minutes no later than two (2) business days after monthly meeting has concluded. Meetings shall be conducted until Construction work starts full time on site (Mobilization).

D24.5 Allow for three (3) hours to attend risk meetings during the Construction phase at the request of the Consulting Contract Administrator. (Project Manager and Contract Administrator required to attend);

D24.6 Review and approve of Contractor submittals and ensure submittals are in conformance to the contract Drawings, Documents and Specifications, without relieving the Contractor of their contractual and legal obligations including:

(a) Workplace Safety and Health Act (Manitoba) Program;

(b) Environmental Plan;

(c) Subcontractor and Equipment List;

(d) Safe Work Plan;

(e) Detailed Work Construction Schedule;

(f) Shop Drawings;

(g) Site Accessibility Plan; and

(h) Traffic Management Plan

D24.7 Review and approve of shop drawings and manufacturers' drawings supplied by the Contactor or supplier to ensure to the Water and Waste Department that the shop drawings are in conformance to the contract Drawings and Specifications, without relieving the Contractor of their contractual and legal obligations in respect thereof.

D24.8 Review and report to the Water and Waste Department upon laboratory, shop and other tests conducted upon materials and /or equipment placed or installed by the Contractor to ensure to the Water and Waste Department conformance to the contract Drawings and Specifications, without relieving the Contractor of their contractual and legal obligations in respect thereof.

D24.9 Acceptance of alternate materials and methods, subject to prior acceptance by the Water and Waste Department, without relieving the Contractor of their contractual and legal obligations in respect thereof.

D24.10 Prepare monthly Contractor progress payments for each Contract in accordance with new legislation prompt payment process.

(a) Prepare monthly contractor progress estimates within seven (7) days of month-end to the Contractor;

(b) Review Contractor submitted proper invoice;

(c) Prepare and issue Payment Certification to the City within seven (7) days of Contractor receiving proper invoice.

(d) Prepare Request for Revision and Notice of Non-Payment Cover Letter where proper invoice does not match Payment Certification for any monthly disputed amounts.

D24.11 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.

D24.12 Furnish copies to the Water and Waste Department of all significant correspondence relating directly or indirectly to the project by parties external to the Consultant’s Contract Administrator (Contract Administrator).

D24.13 Submit to the Water and Waste Department, prior to construction, a condition assessment report documenting written and photographic records of, and assessments of the physical condition of adjacent buildings, facilities, surface conditions and other infrastructure sufficient to equip the Contract Administrator to provide valid evidence and relevant testimony in settlement of any claim involving the City by any court of law or by any other party thereto arising from the project.

D24.14 Consultant billings are to indicate the fee breakdown for the submitted invoice as well as the total fees to date.

D24.15 Billings are to be adjusted to indicate the 7% of the actual construction value holdback until as-constructed drawings have been submitted. Invoices submitted without this breakdown will be returned.

D24.16 Approved allowable disbursements and laboratory testing costs are to be shown as separate sub-totals from the fee charges.

D24.17 Assist the Contractor in obtaining a Development Permit along with applicable Building Permits (including electrical, mechanical, structural, new building construction, etc.). Each Consultant discipline Lead Engineer will need to complete and seal an individual City of Winnipeg Design Summary Letter.

D24.18 For Construction Contract 1 (River Crossing Twin Force mains), work will be occurring within 107 metres of the normal summer Red River level. The Consultant will be required to submit an application for a Waterway Permit application including a detailed Geotechnical Engineering Riverbank Stability Report justifying the risks, complexities and uncertainty associated with the project and the riverbank. The Report shall be sealed by a Professional Geotechnical Engineer.

D25. CONTRACT 3 FACTORY ACCEPTANCE TESTING (FAT)

D25.1 The Consultant will be required to attend the Factory Acceptance Testing (FAT) in-person for out of town new equipment testing. The Consultant will be required to include hours for one (1) representative to attend FAT testing as follows:

(a) Generator – twenty-four (24) hours total (includes travel and factory site time);

(b) Lift Pumps – forty (40) hours total (includes travel and factory site time);

(c) Motor Control Centre – thirty (30) hours total (includes travel and factory site time);

(d) The Consultant to include eight (8) hours total for arranging and booking all travel requirements (airfare, vehicle rental, accommodations, etc.).

(e) For all travel expenses (airfare, vehicle rental, shuttle/taxi rides, etc.) along with expenses for accommodations and meals, the Consultant will be eligible to include costs towards the Additional Work Allowance. Travel time will not be allowed to be applied towards the Additional Work Allowance.

D25.2 The Consultant will be required to attend the Factory Acceptance Testing (FAT) in-person for new equipment testing manufactured in Winnipeg. The Consultant will be required to include hours for one (1) representative to attend FAT testing as follows:

(a) PLC Control Panel - eight (8) hours total;

(b) Variable Frequency Drives – twenty-four (24) hours total;

(c) For all travel expenses (vehicle mileage, shuttle/taxi rides, etc.), the Consultant will be required to include as disbursements.

D25.3 Review and approve of manufacture test procedures, test equipment calibration certificates, FAT checklists and Canadian regulation certificates submitted by Contractor for all in-person FAT testing equipment. Ensure that submittals are in conformance to the contract Drawings, Specifications, and Canadian regulations without relieving the Contractor of their contractual and legal obligations in respect thereof.

D26. CONTRACT ADMINISTRATION SERVICES – RESIDENT

D26.1 Personnel with demonstrated experience in the design and contract administration of the mechanical, process, automation, electrical, structural, and civil components the Works are to be assigned to this project.

D26.2 Provide Project Management for Contract Administration Services using the City Project Management Manual templates where available. Project management services shall include:

(a) Preparing meeting agenda and distributing meeting minutes;

(b) Responding to Requests for Information (RFIs);

(c) Preparing Proposed Change Notices (PCNs);

(d) Preparing Change Work Orders (CWOs);

(e) Providing Field Instructions (FIs);

(f) Providing Inspection Reports (IRs);

(g) Reviewing Contractor monthly invoices and recommending amounts to be paid;

(h) Review of Contractor requested scope changes and recommended approvals.

D26.3 Ensure that Quality Assurance/Quality Control (QA/QC) is undertaken to Building Code requirements and Water and Waste Departmental standards.

D26.4 The Contract Administrator will be required to attend a site visit to the construction site at least once a week while site construction work is taking place to monitor the Contractor work and ensure construction work follows the contract documents. Prepare and submit a weekly Inspection Report to the Consulting Contract Administrator within two (2) days after completing site visit walkthrough.

D26.5 Arrange for biweekly job meetings at the worksite or near the worksite throughout the duration of the contract work from mobilization until Substantial Performance has been reached. The meetings are to be attended by the Project Manager, Contract Administrator or their designate as well as the on-site Inspector, the Contractor and the Water and Waste Department’s contact person.

(a) Construction Contract Administration will chair the meetings from the Contractor trailer and arrange for a Microsoft Teams call in for staff to attend virtually.

(b) Consultant Key Personnel for each construction contract will be required to attend meetings virtually.

(c) The Consultant will be required to show pictures of Construction progress during meetings.

(d) Minutes of all meetings shall be 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.

D26.6 Once Substantial Performance is reached, conduct monthly meetings over Microsoft Teams until Project Closeout. If construction contract site work is paused for winter season, meetings will be paused until Spring of the following year. The Consultant will be required to prepare meeting agenda and distribute meeting minutes after the meetings have finished.

(a) Conduct additional meetings over Microsoft Teams for the following:

(i) Confirming Substantial Performance;

(ii) Confirming Total Performance and Warranty Commencement;

(iii) Training for City Operations and Maintenance staff;

D26.7 All Consultant Key Personnel will be required to attend a site visit to the station at least once every two (2) weeks to monitor the Contractor work and ensure construction work follows the contract documents.

D26.8 Prepare a Deficiency Log for any deficiencies found and/or items that are not in compliance with the Construction Documents.

(a) The Contractor shall be notified immediately for any deficiencies found along with recommendations to correct the deficiencies.

(b) Deficiency Logs shall be updated weekly and discussed during biweekly construction meetings.

D26.9 Without relieving the Contractor of their contractual and legal obligations in respect thereof, conduct detailed inspections of construction work to ensure that the Work carried out by the Contractor is in conformance with the Drawings, Specifications along with applicable codes and safety regulations.

D26.10 Reports are to be promptly made the Water and Waste Department's contact person regarding unusual or changed site conditions which may or will result in extra work to the project.

D26.11 All extra work to the project must be reviewed and approved by the Water and Waste Department's contact person prior to approval being given to the Contractor to undertake the Work. The Contract Administrator will be required to prepare Change Work Orders for all extra work.

D26.12 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.

D26.13 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.

D26.14 In conjunction with the Water and Waste Department, print and distribute construction notices of to adjacent residents and businesses who will have public services and/or access disruptions during construction. Construction notices are required to be distributed prior to full time site work beginning.

D26.15 Enforcement of contractor conformance with the City of Winnipeg Manual of Temporary Traffic Control in Work Areas on City streets in compliance with expected standards of safety for motorists and pedestrians, without relieving the Contractor of their contractual and legal obligations in respect thereof.

D26.16 Acting in the interest of the Water and Waste Department, provide responsible, sensitive and prompt reaction to the reasonable requests and complaints of citizens regarding the conduct of the project.

D26.17 Arranging for and carrying out testing of materials to ensure conformance with the Drawings and Specifications, without relieving the Contractor of their contractual and legal obligations in respect thereof.

D26.18 Final Inspections and Construction Acceptance

(a) Prepare a deficiency list for any deficiencies found and ensure items are corrected by the Contractor.

(b) As coordinated with the Water and Waste Department's contact person and the Contractor, provide inspection of the completed Works to establish the project milestones of Substantial Performance and Total Performance of the completed project.

(c) Coordinate with the Installation Contractor and Equipment Supplier for all required site testing and commissioning services.

D26.19 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.

D27. CONTRACT 1: RESIDENT TUNNEL DRIVE SITE HOURS

D27.1 The Consultant will be required to provide full-time on site construction and acceptance services during construction for the following services.

(a) Monitor Contractor activities and work;

(b) Project schedules are being followed and notifying of any delays;

(c) Provide reference line and elevation control points for the works and check contractor's adherence.

(d) Damage to property is addressed;

(e) Ensure construction work follows contract requirements are being met;

(f) Site safety is in accordance with Provincial Regulations;

(g) Attend bi-weekly site meetings; and

(h) Preparing weekly inspection reports

(i) Keeping tracking of number of working days and days lost due to unforeseen conditions;

(ii) Written and photographic records of construction progress.

D27.2 The total distance of trenchless pipe install is approximately 720 metres per force main (1,440 metres for both force mains) with each tunnel drive planned as follows:

(a) River Crossing trenchless pipe install – approximately 420 metres;

(b) Maple Grove Park trenchless pipe install – approximately 300 metres;

D27.3 The Consultant will be required to be on site twenty-four (24) hours a day while trenchless river crossing tunnel drives are being performed. The Consultant will require shifts from staff such that staff are on site for no more than twelve (12) hours each day. The Consultant shall plan for twenty-four (24) hour tunnel drives as follows:

(a) Tunnel Drive 1: River Crossing Force Main 1 – 50 days;

(b) Tunnel Drive 2: River Crossing Force Main 2 - 50 days;

D27.4 The Consultant will be required to be on site twelve (12) hours a day while trenchless tunnel drives are being performed. The Consultant shall plan for twelve (12) hour tunnel drives as follows:

(a) Tunnel Drive 3: Maple Grove Park Force Main 1 - 70 days;

(b) Tunnel Drive 4: Maple Grove Park Force Main 2 - 70 days;

D27.5 Site work listed in D27.3 and D27.4 will be continuous that will require personnel to work on statutory holidays, weekends and potentially work greater than eight (8) hours in a day. The

Consultant will be required to include any overtime as part of the hourly charge out rates for all site personnel listed.

D27.6 The Consultant will be required to include any vehicle (mileage), electronic communication, etc. as part of a Disbursement.

D28. CONTRACT 2: RESIDENT TUNNEL DRIVE SITE HOURS

D28.1 The Consultant will be required to provide full-time on site construction and acceptance services during construction for the following services.

(a) Monitor Contractor activities and work;

(b) Project schedules are being followed and notifying of any delays;

(c) Provide reference line and elevation control points for the works and check contractor's adherence.

(d) Damage to property is addressed;

(e) Ensure construction work follows contract requirements are being met;

(f) Site safety is in accordance with Provincial Regulations;

(g) Attend bi-weekly site meetings; and

(h) Preparing weekly inspection reports

(i) Keeping tracking of number of working days and days lost due to unforeseen conditions;

(ii) Written and photographic records of construction progress.

D28.2 The total distance of trenchless pipe install is approximately 2,760 metres with each tunnel drives planned as follows:

(a) Tunnel Drive 1: St. Mary's East to St. Vital Interceptor – approximately 900 metres;

(b) Tunnel Drive 2: St. Mary's East to St. Mary's West – approximately 270 metres;

(c) Tunnel Drive 3: St. Mary's West to PTH 100 South – approximately 1000 metres;

(d) Tunnel Drive 4: PTH 100 South to PTH 100 North – approximately 120 metres;

(e) Tunnel Drive 5: PTH 100 North to Force Main Transition – approximately 460 metres;

D28.3 The Consultant will be required to provide full time construction inspection and acceptance services on site twenty-four (24) hours a day while trenchless PTH 100 and St. Mary's crossing tunnel drives are being performed. The Consultant will require shifts from staff such that staff are on site for no more than twelve (12) hours each day. The Consultant shall plan for twenty-four (24) hour tunnel drives as follows:

(a) Tunnel Drive 2: St. Mary's East to St. Mary's West - 30 days

(b) Tunnel Drive 4: PTH 100 South to PTH 100 North - 15 days;

D28.4 The Consultant will be required to provide full time construction inspection and acceptance services on site twelve (12) hours a day while trenchless tunnel drives are being performed. The Consultant shall plan for twelve (12) hour tunnel drives as follows:

(a) Tunnel Drive 1: St. Mary's East to St. Vital Interceptor - 135 days;

(b) Tunnel Drive 3: St. Mary's West to PTH 100 South - 150 days;

(c) Tunnel Drive 5: PTH 100 North to Force Main Transition - 70 days;

D28.5 Site work listed in D28.3 and D28.4 will be continuous that will require personnel to work on statutory holidays, weekends and potentially work greater than eight (8) hours in a day. The Consultant will be required to include any overtime as part of the hourly charge out rates for all site personnel listed.

D28.6 The Consultant will be required to include any vehicle (mileage), electronic communication, etc. as part of a Disbursement.

D29. CONTRACT 3: RESIDENT SITE HOURS

D29.1 The Consultant will be required to attend be on site eight (8) hours a day while underground and civil works are being performed. The Consultant shall plan for underground and civil work time as follows:

(a) Installation of Pump Out Chamber: 30 days;

(b) Installation of SRS Intake Chamber: 30 days;

(c) Substructure Construction: 150 days;

(d) Superstructure (Building) Construction: 30 days;

(e) Force Mains 1 & 2 (Lift Station to Bypass Chamber) Install: 25 days;

(f) 1050mm Gravity Pipe (Pump Out Chamber to Lift Station) Install: 40 days;

D29.2 The Consultant will be required to have personnel on site four (4) hours a day while equipment installations are being performed. The Consultant shall plan for equipment installation work time as follows:

(a) Installation of Lift Pumps and Piping: 25 days;

(b) Installation of Generator: 10 days;

(c) Installation of Automation, Mechanical and Electrical Equipment: 100 days;

D29.3 The Consultant will be required to include any vehicle (mileage), electronic communication, etc. as part of a Disbursement.

D30. CONTRACT 4: RESIDENT TUNNEL DRIVE SITE HOURS

D30.1 The Consultant will be required to provide full-time on site construction and acceptance services during construction for the following services.

(a) Monitor Contractor activities and work;

(b) Project schedules are being followed and notifying of any delays;

(c) Provide reference line and elevation control points for the works and check contractor's adherence.

(d) Damage to property is addressed;

(e) Ensure construction work follows contract requirements are being met;

(f) Site safety is in accordance with Provincial Regulations;

(g) Attend bi-weekly site meetings; and

(h) Preparing weekly inspection reports

(i) Keeping tracking of number of working days and days lost due to unforeseen conditions;

(ii) Written and photographic records of construction progress.

D30.2 The total distance of 900 mm trenchless pipe to install is approximately 225 metres with each tunnel drives planned as follows:

(a) Patricia Ave Road Crossing – approximately 15 metres;

(b) Patricia Ave to Back Lane West – approximately 30 metres;

(c) Patricia Ave Back Lane Crossing – approximately 15 metres;

(d) Patricia Ave Back Lane East to Kilkenny Dr West – approximately 75 metres;

(e) Kilkenny Dr Road Crossing – approximately 15 metres;

(f) Kilkenny Dr East to 1050mm Pipe Transition – approximately 75 metres;

D30.3 The total distance of 1050 mm trenchless pipe install is approximately 90 metres with each tunnel drives planned as follows:

(a) 1050mm Pipe Transition to Linacre Pump Out Chamber – approximately 90 metres;

D30.4 The total distance of 250 mm trenchless / trenched pipe install is approximately 1,000 metres with each tunnel drive planned as follows:

(a) Kilkenny Dr South 250mm Pipe – approximately 750 metres;

(b) Prestwood Place 250mm Pipe – approximately 180 metres;

(c) Colindale Cove 250mm Pipe – approximately 60 metres;

(d) Radcliffe Road Crossing 250mm Pipe – approximately 10 metres;

D30.5 The Consultant will be required to have personnel on site twelve (12) hours a day while trenchless / trenched tunnel drives are being performed. The Consultant shall plan for twelve (12) hour tunnel drives as follows:

(a) Total Pipe Install: 900 mm Pipe – 30 days;

(b) Total Pipe Install: 1050 mm Pipe – 10 days;

(c) Total Pipe Install: 250 mm Pipe – 100 days;

D30.6 Site work listed in D30.5 may require personnel to work greater than eight (8) hours in a day. The Consultant will be required to include any overtime as part of the hourly charge out rates for all site personnel listed.

D30.7 The Consultant will be required to include any vehicle (mileage), electronic communication, etc. as part of a Disbursement.

D31. CONTRACT 3: COMMISSIONING

D31.1 Coordinate with the Contractor, the Water and Waste Department and other relevant parties any commissioning activities required before any components of the Station can be put into active service.

D31.2 Conduct a pre-commissioning meeting over Microsoft Teams to go through commissioning schedule and activities. The Consultant will be required to prepare meeting agenda and distribute meeting minutes after the meetings have finished. The Consultant Project Manager, Contract Administrator along with staff that will be involved with commissioning activities will be required to attend.

D31.3 Review and approve of commissioning plan supplied by the Contactor to ensure to the Water and Waste Department that the commissioning procedures are in conformance to the contract details, without relieving the Contractor of their contractual and legal obligations in respect thereof.

D31.4 The Consultant will be required to attend commissioning site visits to ensure proper testing is performed. The Consultant shall plan for commissioning activities to be a total 120 hours on site. Commissioning activities shall be performed by include automation, electrical, instrumentation, mechanical and process trained staff. Commissioning will be performed on Lift Station, Maple Grove Park Flow Monitoring and Patricia Ave Weir Chamber Monitoring.

D31.5 Prepare and submit a total of four (4) weekly commissioning field reports including commission dates & times, all staff in attendance (Consultant, Contractor, City staff), general scope, work completed, items requiring completion and/or changes and other items. Reports shall cover commissioning activities for each work week commissioning is being done. Submit field reports no later than three (3) business days after each commissioning week has been completed.

D31.6 All control and instrument signals will be required to be tested back to the PLC including: verifying signal to the physical PLC card location, signal status on the HMI screen along with ensuring SCADA can see the signal

D31.7 Ensure the Contractor fills out the required commissioning forms for each commissioning site visit to be incorporated into the O&M manual. City staff will be required to be on site during commissioning activities to witness commissioning activities. The City standard checklist forms to be used on this project are shown in Appendix H. The following equipment will be required to include separate completed commissioning forms:

(a) Generator.

(b) All instruments. For common instruments such as temperature transmitters, it will be acceptable to utilize one (1) commissioning form.

(c) PLC System (including Communications, Local & PLC Mode, Pump Duties).

(d) All PLC I/O Cards.

(e) All HVAC Controllers.

(f) All Dampers (including Actuators).

(g) All HVAC Fans.

(h) All Motor Control Centres (including Motor Starters).

(i) All Lift Pump VFDs.

(j) All Lift Pumps (including Motors).

(k) All Emergency Lighting Systems.

(l) All Disconnect Switches.

(m) All 120/240V Panelboards.

(n) All Single-Phase Transformers.

(o) Customer Service Termination End.

(p) Automatic Transfer Switch.

(q) Load Bank.

(r) Main Motor Control Centre Power Meter.

(s) All HVAC Heaters.

(t) Outdoor Lighting.

(u) Air Conditioning Unit.

D31.8 The Consultant will be required to commission each PLC I/O point and the Control Logic of the new PLC once installed at the station. Points shall be commissioned from the physical signal location (i.e. using VFD selector switch to determine Manual / Auto Mode at the PLC). Each I/O signal state shall be verified on physical PLC card location, on the HMI screen and that SCADA can see the changes in signal states. The Alarm test state for each I/O signal shall be tested

D31.9 The Consultant will be required to commission each HVAC Controller I/O point once installed at the station. Points shall be commissioned from the physical signal location (i.e. using Main Floor light switch to determine Station Occupancy at the HVAC Controller). Each I/O signal state shall be verified on at the HVAC Controller and the operation of the modulated dampers.

(a) The gas detector along with temperature sensing will need to be simulated to ensure proper operation of the modulated dampers.

D31.10 A Wet Well level simulation for each Wet Well Level Controller will be required to ensure operation of the lift pumps (starting, stopping, duty selection, etc.). Both PLC Mode and Local Mode of operations will be required to be commissioned.

D31.11 Ensure equipment is successfully commissioned with checklists sent to the Consulting Contract Administrator prior to any City, utility along with Inspection and Technical Services (ITS) inspectors visiting site to verify equipment operation and allow final occupancy.

D31.12 Inspection and Technical Services (ITS) Compliance

(a) Attend a site visit to prove generator operation and code compliance with an Inspection and Technical Services (formerly Office of the Fire Commission) inspector along with Manitoba Hydro and other City staff. The Consultant shall ensure the Project Manager, Lead Electrical Engineer, Lead Automation Engineer and Lead Mechanical Engineer attend the site visit. The Contractor will need to prove to the inspector and Manitoba Hydro that that generator is fit for use.

(b) Coordinate with the Contractor to have any corrections to be made from the inspector's deficiency report.

(c) Ensure the Contractor completes four (4) hour load bank testing performed. The Consultant will only be required to be at site for one (1) hour while load bank testing is taking place.

(d) Attend follow up site visits as required to ensure inspector and Manitoba Hydro sign off on the generator to be fit for use. The Consultant shall ensure the Project Manager along with any discipline Lead Engineers as required to attend the follow up site visits.

D31.13 Review all Contractor type written commissioning forms to be incorporated into the final O&M manual.

D32. RECORD DOCUMENTS AND PROJECT CLOSE-OUT

D32.1 Assist the Contractor in closing out all applicable permits (MTI Crossing, River Crossings, Development Permit, Occupancy Permit, building design summary, electrical, mechanical, structural, building occupancy, etc.) taken out for Construction work. Each Consultant discipline Lead Engineer will need to complete and seal an individual Professional Certification Occupancy Letter.

D32.2 Conduct a project closeout meeting over Microsoft Teams to go through commissioning schedule and activities. The Consultant will be required to prepare meeting agenda and distribute meeting minutes after the meetings have finished. The Consultant Project Manager, Contract Administrator along with all Key Leads will be required to attend.

D32.3 Warranty Services

(a) Attend a warranty inspection site visit with the Contractor, Consulting Contract Administrator and other City staff no later than one (1) month prior to Warranty expiring. Prepare and submit a deficiency report for the Contractor to remediate any warranty items.

(b) Coordinate with the Contractor to repair and/or replace any warranty items.

(c) Once all warranty deficiencies have been corrected, attend a final inspection site visit and issue Final Acceptance certificate to the Contractor.

D32.4 Record Documents

(a) Ensure the Contractor provides redline as-built markups for all changes during Construction. Review details and incorporate into Record Documents.

(b) All discipline key Consultant team members will be required to attend a final site inspection in order to accurately document any construction changes to be identified on the Record Documents.

(c) All sealed Construction and Demolition Documents (including drawings, reports, setting letters, etc.) produced for the project are required to be updated to become sealed Record Documents. The Record Documents shall include all changes to reflect the final construction work.

(d) Preliminary Record Document submission shall be submitted no later than three (3) months after Total Performance has been reached.

(e) The Consultant will be required to submit a Record Drawing review submission for the City Water and Waste Department to provide review comments.

(f) Submit a preliminary Record Document submission for City review. The submission shall include all Record Drawings, Record Setting Letters and Reports along with all existing

cancelled/superseded drawings. The City will provide review comments within three (3) weeks for the Consultant to incorporate into the final Record Documents.

(g) The final Record Documents are to be sealed be a Professional Engineer with tracked document revision history.

(h) Record Drawings shall include sealed pdfs along with AutoCAD files. Include all construction details and materials of the competed works, including the following:

(i) All construction details,

(ii) Complete materials list for each individual component installed,

(iii) Date of installation of Works (Total Performance),

(iv) Installation Contractor.

(i) The Consultant shall prepare a final (non-sealed) Record Drawing submission to the Consulting Contract Administrator. The submission shall include all Construction Drawings, Record Drawings along with all existing cancelled/superseded drawings. All drawings shall include pdf along with a CAD files. The Consulting Contract Administrator will prepare the package to be submitted to the City Water and Waste Department's Supervisor of Drafting & Graphic Services for preliminary review to be stored in the City internal drawing system.

(j) All digital drawing files must have the Water and Waste Department drawing number assigned to that drawing number. Ensure the AutoCAD files have been cleaned up to remove all unused content that is not shown in the Paper layout tab and that each viewport has shown in the Model space includes viewport boundary window. Bind all XREF CADs within each drawing CAD file. Ensure all preliminary submission comments have been addressed. The reviewed final Record Drawing submission will be returned with comments (if any) for completion.

(k) Once all revisions have been made, submit two (2) complete sets of full size sealed (A1) drawing hardcopy plots for the Works and a USB to include all sealed pdf files along with digital AutoCAD files. All drawing revisions shall be included as separate electronic (pdf & CAD) files and be labelled as the reserved City drawing number. The Consultant will be required to courier the hardcopy plots and USB key to 1199 Pacific Avenue to the Water and Waste Department's Supervisor of Drafting & Graphic Services.

D33. CONTRACT 3: ADDITIONAL RECORD DOCUMENTS AND PROJECT CLOSE OUT

D33.1 Coordinate with the Installation Contractor and Equipment Supplier to provide a minimum of two (2) on-site training sessions to provide instruction to City staff on the safe operation of all new equipment including recommended maintenance tasks and schedules. One (1) training session shall be provided for Operations staff and one (1) training session shall be provided for Maintenance staff.

D33.2 Preparation of a Station Arc Flash study to be completed using SKM software. SKM library files, report file and single line drawings to be submitted to the City. The following shall be included as part of the arc flash study:

(a) The Consultant shall obtain new short circuit levels from Manitoba Hydro in order to produce the arc flash report.

(b) Arc flash energies to be kept as low as reasonable attainable.

(c) Model the proposed changes to identify approximate arc flash energy levels and ensure that the design provides for Category 2, or lower, arc flash energies within the Station.

(d) Provide an arc flash report including title page with revision history, table of contents, equipment nameplate information (used in the model), power system model description (i.e. assumptions and technical detail describing how scenarios were created), equipment incident energy, coordination of protective devices with time current curves (TCCs) showing each downstream breaker up to the incoming hydro protective devices along with equipment short-circuit duty results. TCCs shall include single line and logarithmic graph with each device labelled to match single line equipment tags. Provide Word document of arc flash report as part of this submission.

(e) Submit draft arc flash study for City review.

(f) Print arc flash labels for all electrical equipment based upon the final Arc Flash study, after Total Performance has been reached. Arc Flash labels are to be consistent with City Standards and are to be submitted to the City for review before printing.

(g) The Consultant will also be required to visit the Lift Station site to attach arc flash labels to all electrical equipment.

D33.3 Final InfoWorks Hydraulic Model Database

(a) The Consultant will be required to prepare an updated InfoWorks model database with a single model scenario documenting the final as-built project configuration.

(b) Include a selection list file highlighting the extent of new sewer elements and sewer system modifications which occurred as part of the Project Scope of Work.

D33.4 Operations & Maintenance (O&M) Manual

(a) Review Contractor Operations & Maintenance (O&M) manual submissions for completeness. Advise the Contractor of any missing information.

(b) Each tab shall include a section header page along with a section index page to include unique documents within each section along with number of pages for each document. Pages should be numbered as per each section (i.e. 5-1, 5-2, …, 5-20).

(c) The O&M shall include separate tabs for the following:

(i) Cover Page & Table of Contents;
(ii) Contractor and Consultant Contact Information;
(iii) Warranty Details;
(iv) Professional Certification Occupancy Letters;
(v) Products and Shop Drawings;
(vi) Spare Parts & Tools;
(vii) Certified Factory Test Results;
(viii) Commissioning Reports & Forms;
(ix) Operator & Maintenance Training Presentations;
(x) Lessons Learned.

(d) The O&M manual will be required to have separate electronic files for each section (tab) and be properly labelled (i.e. Section 1 – Contractor & Consultant Contact Information).

(e) Once final O&M has been submitted and approved, ensure the Contractor provides five (5) hardcopy binders along with five (5) USB keys to the City. Coordinate with the Installation Contractor and Equipment Supplier to provide five (5) full sets of all Operation & Maintenance manuals to the City for all newly installed equipment and devices.

D33.5 Asset Equipment List

(a) Prepare a final Asset Equipment List in excel format to include all major equipment (pumps, fans, MCCs, CSTE, transformers, panelboards, control panels, heaters, dampers, etc.) along with all instruments to be incorporated for future maintenance work tracking. Refer to Appendix I for a sample Community Row Lift Station Asset Equipment List template to be used.

(b) Preliminary Asset Equipment List submission shall be submitted no later than three (3) months after Total Performance has been reached.

(c) Asset Equipment List will include separate excel sheets within excel file for:

(i) Asset Classification Breakdown;
(ii) Building;
(iii) Control Panels;
(iv) Electrical Equipment;
(v) HVAC;
(vi) Instruments;

(vii) Motors;
(viii) Process Piping & Valves;
(ix) Pumps.

(d) All equipment within the Asset Equipment List will need to include the following:
(i) Equipment tag names and description;
(ii) Manufacturer details (manufacturer, make, model, serial number and date of manufacturer);
(iii) Sizes (weight, height, width, depth, etc.);
(iv) Electrical specifications (voltage, amperage, horse power, RPM speed);
(v) Certifications (CSA/cUL approval, NEMA rating, etc.).

(e) Attend a site visit for collection all equipment to be included within the Asset Equipment List. The Consultant will be required to take pictures of all installed equipment at Linacre Lift Station to show equipment layout (including lamacoids) and nameplate.

(f) Each asset equipment included in the Asset Equipment List will need to include a separate pdf attachment files to show what the installed equipment layout along with nameplate details. All images shall include a description title (i.e. Linacre Lift Station - Lift Pump Motor MTR-L01) along with image captions (i.e. Front View, Nameplate, etc.). Attachment files shall be labelled to match equipment tag names exactly (i.e. MTR-L01). Refer to Appendix J for sample asset attachment file.

(g) Submit a preliminary Asset Equipment List submission for City review. The submission shall include Asset Equipment List filled out for each piece of equipment along with individual pdf files for all equipment. The City will provide review comments within two (2) weeks for the Consultant to incorporate into the final Asset Equipment List.

(h) The Consultant will be required to provide a USB key and courier to the Consulting Contract Administrator located at 1199 Pacific Avenue for the final Asset Equipment List and separate equipment pdf files.

D33.6 The Consultant will be required to cancel or supersede existing City drawings to reference the new applicable drawing as shown in Appendix L. The Consultant will need to create new CAD drawing title block files and insert the pdf into the CAD files for all existing drawings to be cancelled / superseded. Cancelled / Superseded drawings to include:

(i) 1230
(ii) 1231
(iii) 1232
(iv) AB01 (1232 B)
(v) AB02 (1232 C)

D33.7 Prepare Record Setting Letters and Reports, including sealed pdfs along with word files (for future revisions). The Consultant shall submit final sealed Record Setting Letters and Reports within one (1) month of City Review. Setting Letters and Reports shall include:

(i) Variable Frequency Settings Letters.
(ii) Control Narrative Report.
(iii) PLC Programming Report.
(iv) HMI Controller Report.
(v) Arc Flash Report complete with SKM software file.
(vi) Automatic Transfer Switch Setting Letter.
(vii) HVAC Controller Setting Letters.

D33.8 The Consultant will be required to arrange for full size laminated hard copy plots with backer board to be printed at the Consultant’s cost. The Drawings will be stored on site for Operations and Maintenance staff use. The following drawings are required to be plotted full size laminated with backer board:

(a) Single Line Diagram;

(b) All HVAC P&ID Diagrams;

(c) All Lift Pumping (including Wet Well) P&ID Diagrams.

D34. HERITAGE WORK ALLOWANCE

D34.1 The detailed design stage requires heritage site investigations to clear the remainder of the project planned routing for development through the Province of Manitoba – Historic Resources Branch. The heritage work can only be performed under the direction of a Provincially certified Archeologist to determine if the areas contain any items of heritage significance. Refer to Appendix M for a list of qualified Provincially certified Archeologists.

D34.2 The project routing has been flagged for heritage significance for the following contracts listed below.

(a) Contract 1: River Crossing Twin Force Mains (entire route)

(b) Contract 2: Downstream Gravity Sewer Interceptor (only routing north of PTH 100)

(c) Contract 3: Linacre Lift Station (entire parcel)

D34.3 The City has cleared Contract 3 (Linacre Lift Station) parcel from Kilkenny Drive to the Red River with the Province of Manitoba – Historic Resources Branch. The parcel is cleared for development after the Heritage site work and report submitted did not find any items of heritage significance.

D34.4 At the time of writing this RFP, the City is in the process of clearing Contract 1 (River Crossing Twin Force Mains) for the area between the Red River to the shafts directly east of the Red River (in Maple Grove Park) as shown in Appendix A with the Province of Manitoba – Historic Resources Branch. It is expected that the parcel will be cleared for development after the Heritage site work and report submitted did not find any items of heritage significance.

D34.5 The remaining Heritage Work required for the project is the clear the remainder of the area for Contract 1 (River Crossing Twin Force Mains) and Contract 2 (Downstream Gravity Sewer Interceptor). The areas to be cleared include the planned routing development in Maple Grove Park from the shafts directly east of the Red River to PTH 100 (Perimeter) Highway. The Consultant will be required to provide the following Heritage Work:

(a) Attend a Teams meeting with the Province of Manitoba – Historic Resources Branch staff to discuss heritage work.

(b) Prepare and submit a Heritage Permit Application.

(c) Provide field site digging (soft digging and mechanical excavations) under the direction of a Provincially certified Archeologist.

(d) Prepare and submit a Heritage Resource Impact Assessment (HRIA) report of the site findings, including all dig locations and pictures of findings. The report will be used to clear any heritage significance associated with the area within Maple Grove Park.

(e) Conduct a Teams meeting with Manitoba Historic Resources Branch (HRB) and City staff to discuss the findings and HRB decision.

D35. GEOTECHNICAL WORK ALLOWANCE

D35.1 The detailed design stage requires geotechnical investigations to characterize the geotechnical condition of the subsurface soils/bedrock and groundwater. This information will be used to refine the optimum alignment, provide geotechnical design criteria necessary for foundation/structural design, determine construction requirements, and to facilitate more accurate costing information.

D35.2 Geotechnical Engineering for Contract 1 (River Crossing Twin Force Mains) Contract 2 (Downstream Gravity Sewer Interceptor) trenchless pipe installation:

(a) The Consultant will be required to have test wells installed and piezometers installed to monitor the ground water levels. Ground water monitoring is required to be monitored continuously from April till November to see the fluctuations in ground water levels.

(i) The Consultant shall apply costs associated with installation of test wells by a drilling Contractor to be applied towards the Geotechnical Work Allowance.

(b) Arrange for geotechnical test bore holes to investigate soil conditions. All bore holes shall be extend a minimum of 3m below along pipe routing along with bottom of proposed shafts. The Consultant shall plan for bore holes to be drilled and investigated at as listed as follows:

(i) A maximum of 90m between bore holes for proposed pipe profiles.

(ii) At every proposed launching and receiving shafts.

(c) The Consultant shall prepare a separate Geotechnical Data Report (GDR) along with a separate Geotechnical Baseline Report (GBR) to support trenchless installation methods recommended for each contract. The City does not want a combined GDR and GBR report for Contracts.

D35.3 Geotechnical Engineering for Contract 4 (Upstream Gravity Sewers):

(a) The Consultant will be required to have test wells installed and piezometers installed to monitor the ground water levels. Ground water monitoring is required to be monitored continuously from April till November to see the fluctuations in ground water levels.

(i) The Consultant shall apply costs associated with installation of test wells by a drilling Contractor to be applied towards the Geotechnical Work Allowance.

(b) Arrange for geotechnical test bore holes to investigate soil conditions. All bore holes shall be extend a minimum of 3m below along pipe routing along with bottom of proposed shafts. The Consultant shall plan for bore holes to be drilled and investigated at as listed as follows:

(i) A maximum of 90m between bore holes for proposed pipe profiles.

(c) The Consultant shall prepare a separate Geotechnical Report to support trenchless pipe installation methods and construction of Kilkenny Drive Weir Chamber.

D35.4 Work items to be considered as part of this allowance include, but are not limited to:

(a) reviewing existing geotechnical information including

(i) Reports, borehole logs, etc.

(b) providing a proposed investigation location plan to be reviewed by the City;

(c) procurement of a drilling contractor;

(d) verifying that the contractor has all necessary utility locates and work permits;

(e) supervision of the investigation activities by qualified personnel;

(f) collection and testing of samples;

(g) groundwater monitoring;

(h) conducting topographic land surveys, including preparation of a topographic land survey report;

(i) conducting geophysical surveys, including preparation of a Geophysical Survey Report; and

(j) any other activities necessary to characterize the geotechnical condition of the subsurface soils/bedrock and groundwater levels.

D35.5 The General Requirements for Geotechnical Work Allowances are as follows:

(a) The hourly rates of all Key Personnel and non-Key Personnel proposed for any Geotechnical Work Allowances when defined and approved shall match the original Form P: Person Hours and/or original rate sheet provide. There will be no fee escalation allowed for yearly adjustments, promotions, etc. to be used for Geotechnical Work Allowances.

(b) The Consultant shall apply a maximum of ten (10) percent markup on all Work performed by a Sub Consultant.

(c) Expenditures under the Geotechnical Work Allowance must be authorized in writing by the Consulting Contract Administrator by a Change in Scope of Services (CSS). The Consultant will be required to complete a CSS for using Additional Work Allowance expenditures.

(d) The Contract price will be adjusted by written order to provide for a difference between the amount of the Geotechnical Work Allowances and the actual cost of the Work.

(e) The City reserves the right to delete any or all of the Geotechnical Work Allowances from the Contract if the Work intended to be covered by the Geotechnical Work Allowances is not required, or if the Works intended are found to be more extensive than the provisional Geotechnical Work Allowances.

D36. ADDITIONAL WORK ALLOWANCE

D36.1 The General Requirements for Additional Work Allowances are as follows:

(a) The hourly rates of all Key Personnel and non-Key Personnel proposed for any Additional Work Allowances when defined and approved shall match the original Form P: Person Hours and/or original rate sheet provide. There will be no fee escalation allowed for yearly adjustments, promotions, etc. to be used for Additional Work Allowances.

(b) The Consultant shall apply a maximum of ten (10) percent markup on all Work performed by a Sub Consultant.

(c) Expenditures under the Additional Work Allowance must be authorized in writing by the Consulting Contract Administrator by a Change in Scope of Services (CSS). The Consultant will be required to complete a CSS for using Additional Work Allowance expenditures.

(d) The Contract price will be adjusted by written order to provide for a difference between the amount of the Additional Work Allowances and the actual cost of the Work.

(e) The City reserves the right to delete any or all of the Additional Work Allowances from the Contract if the Work intended to be covered by the Additional Work Allowances is not required, or if the Works intended are found to be more extensive than the provisional Additional Work Allowances.

D36.2 The Consultant will be required to coordinate with the City of Winnipeg Underground Structures branch to locate all underground structures (pipes, cables, sewers, watermains, etc.). The Underground Structures costs shall be applied towards the Additional Work Allowances.

(a) All requests for information from the City of Winnipeg Underground Structures will be billed directly to the Consultant by Underground Structures. The Consultant shall pay the invoice to Under Structures and submit a copy of the paid invoice to the Water and Waste Department as an allowable disbursement.

D36.3 For all out of town in-person Factory Acceptance Testing travel expenses (airfare, vehicle rental, shuttle/taxi rides, etc.) along with expenses for accommodations and meals, the Consultant shall apply the costs towards the Additional Work Allowance. Travel time will not be allowed to be applied towards the Additional Work Allowance.

D36.4 For all additional resident tunnel drive installs, any site time required for trenchless pipe installations listed in D27, D28, D29 and D29.3, the Consultant shall apply the costs towards the Additional Work Allowance. Hourly charge out rates are required to match original RFP rates provided for total hours listed in D27, D28, D29 and D29.3. There will not be any escalation allowed for additional hours used.

D36.5 The Consultant will be required to provide material testing for hazardous substances (lead paint, asbestos, etc.) for the Kilkenny Lift Station to be demolished. The costs shall be applied towards the Additional Work Allowances.

D36.6 The Additional Work Allowances are to be used for engineering and design services that arise due to unforeseen conditions during the Project. When such Work arises, the Consultant will be required to prepare a concise Change is Scope of Services along with work breakdown costs, following requirements as defined in B12.7 and D36.1, in collaboration with the Consulting Contract Administrator. The Proposal shall be submitted to the Consulting Contract Administrator for final approval. No Work shall start prior to written approval provided.

D37. ACCESSIBLE CUSTOMER SERVICE REQUIREMENTS

D37.1 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.

D37.1.1 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.

D37.1.2 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.

D38. SUPPLIER CODE OF CONDUCT

D38.1 The Contractor has reviewed and understands the City's Supplier Code of Conduct. This document is located at: https://www.winnipeg.ca/media/4891

D38.2 The Contractor agrees to comply with the Supplier Code of Conduct as it may be amended or replaced from time to time. The Contractor is responsible for periodically checking the above link for updates to the Supplier Code of Conduct. Contract signature on Form A: Bid/Proposal from the Contractor signifies agreement to the Supplier Code of Conduct which comes into effect once the Contract starts.

D38.3 If there is a conflict between the Contract and the Supplier Code of Conduct – the Contract will prevail.

D39. UNFAIR LABOUR PRACTICES

D39.1 Further to C3.2, the Consultant declares that in bidding for the Work and in entering into this Contract, the Consultant and any proposed Subconsultant(s) conduct their respective business in accordance with established international codes embodied in United Nations Universal Declaration of Human Rights (UDHR) https://www.un.org/en/about-us/universal-declaration-of-human-rights International Labour Organization (ILO) https://www.ilo.org/global/lang--en/index.htm conventions as ratified by Canada.

D39.2 The City of Winnipeg is committed and requires its Consultants and their Subconsultants, to be committed to upholding and promoting international human and labour rights, including fundamental principles and rights at work covered by ILO eight (8) fundamental conventions and the United Nations Universal Declaration of Human Rights which includes child and forced labour.

D39.3 Upon request from the Consulting Contract Administrator, the Consultant shall provide disclosure of the sources (by company and country) of the raw materials used in the Work and a description of the manufacturing environment or processes (labour unions, minimum wages, safety, etc.).

D39.4 Failure to provide the evidence required under D39.3, may be determined to be an event of default in accordance with C14.

D39.5 In the event that the City, in its sole discretion, determines the Consultant to have violated the requirements of this section, it will be considered a fundamental breach of the Contract and the Consultant shall pay to the City a sum specified by the Consulting Contract Administrator in writing ("Unfair Labour Practice Penalty"). Such a violation shall also be considered an Event of Default, and shall entitle the City to pursue all other remedies it is entitled to in connection with same pursuant to the Contract.

D39.5.1 The Unfair Labour Practice Penalty shall be such a sum as determined appropriate by the City, having due regard to the gravity of the Consultant's violation of the above requirements, any cost of obtaining replacement goods/ services or rectification of the breach, and the impact upon the City's reputation in the eyes of the public as a result of same.

D39.5.2 The Consultant shall pay the Unfair Labour Practice Penalty to the City within thirty (30) Calendar Days of receiving a demand for same in accordance with D39.5. The City may also hold back the amount of the Unfair Labour Practice Penalty from payment for any amount it owes the Consultant.

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

D40. INFORMATION MANAGEMENT

D40.1 The following provisions are in addition to any preceding obligations of confidentiality contained in this document. All requirements apply to the Consultant. Further, where the Services &/or Work is being provided by a third party (either by a Subconsultant or authorized third party reseller), the Consultant represents and warrants that it will ensure that the third party meets all of the relevant requirements of the Information Management clauses and will assume responsibility and liability for the third party's compliance or non-compliance.

D40.2 The Consultant acknowledges that The Freedom of Information and Protection of Privacy Act ("FIPPA") and Personal Health Information Act ("PHIA") imposes obligations on the City to collect, store, use, disclose, and destroy "personal information", as that term is defined in FIPPA, ("Personal Information") in the strictest of confidence and in accordance with FIPPA and PHIA.

D40.3 The Consultant:

(a) Shall be deemed to be an Information Manager as that term is defined in FIPPA;

(b) Shall be responsible to ensure that all Personal Information is collected, stored, used, disclosed or destroyed only and strictly in accordance with the Contract; and

(c) Shall, in respect of all Personal Information, implement and comply with the security requirements, controls, policies, and standards set out in the Contract and the Specifications.

D40.4 While this Contract is in effect, and at all times thereafter, the Consultant shall treat as confidential any and all Confidential Information which it acquires or that is collected, stored, used, disclosed or destroyed, or to which it is given access, or which in any other way it comes into possession or knowledge of, during the course of the performance of the Contract. For the purposes of this Contract, Personal Information shall be considered to be Confidential Information.

D40.5 The Consultant shall comply with section 44.1 of FIPPA, and more generally, any collection, storage, use, disclosure or destruction of Personal Information by the Consultant shall be in compliance with FIPPA and PHIA.

D40.6 Further to C21 of the General Conditions, all Confidential Information is and shall remain the property of the City.

D40.7 The Consultant shall not disclose or appropriate to their own use, or to the use of any third party, all or any part of the Confidential Information without the prior written consent of the Consulting Contract Administrator. The Consultant shall not at any time make any public announcement, press release, or statement of fact or opinion regarding the Bid Opportunity, the Contract, the Work, the City, or the Confidential Information without the prior written consent of the Consulting Contract Administrator.

D40.8 While this Contract is in effect and at all times thereafter the Consultant shall: (a) only collect, store, use, disclose or destroy the Confidential Information for the purposes expressly permitted by the City, and only to the extent necessary to perform its obligations under this Contract:

(a) ensure that access to the Confidential Information is only provided or permitted a “need to know” basis, and that access, when given, shall be the minimum amount necessary to accomplish the task;

(b) not disclose or permit the disclosure of the Confidential Information or any copies thereof, whether in whole or in part, in any form or medium, to any third party, including Subconsultants or agents, without the prior written consent of the Consulting Contract Administrator;

(c) not reproduce any Confidential Information, in whole or in part, in any form or medium, without the express prior written consent of the Consulting Contract Administrator; and

(d) inform its Subconsultants of the obligations imposed upon it under this Contract and FIPPA, and shall take whatever steps are necessary to ensure that all of its Subconsultants comply with those obligations, including (but not limited to) binding said Subconsultants to terms no less strict than those herein through written confidentiality agreements.

D40.9 The Consultant shall put into place reasonable security arrangements, including administrative, technical, and physical safeguards that ensure the confidentiality and security of the Confidential Information. The standard of such security arrangements shall be the greater of:

(a) the standards the Consultant has in place to protect its own confidential information; or

(b) the standards imposed on the Consultant by the Consulting Contract Administrator.

D40.10 Upon becoming aware of any unauthorized use or handling of the Confidential Information (a “Confidentiality Breach”), the Consultant shall immediately notify the Consulting Contract Administrator in writing, take all reasonable steps to prevent the recurrence of any such Confidentiality Breach, and notify the Consulting Contract Administrator of said steps in writing.

D40.11 Upon receiving a subpoena or other validly issued administrative or judicial order seeking Confidential Information, the Consultant shall provide the Consulting Contract Administrator with prompt notice thereof, deliver a copy of its proposed response to the Consulting Contract Administrator, and thereafter be entitled to comply with the demand to the extent permitted or required by law (unless the demand has been time-limited, quashed, or extended). The Consultant shall cooperate with the Consulting Contract Administrator in the defense of the demand, if so requested by the Consulting Contract Administrator.

D40.12 The Consultant shall, and shall ensure its Subconsultants, comply with all directives issued by the Consulting Contract Administrator with respect to safeguarding or otherwise ensuring the confidentiality of the Confidential Information, and shall cooperate with the Consulting Contract Administrator so that the Consulting Contract Administrator can verify that the Consultant has complied, and is complying, with its obligations hereunder.

SUBMISSIONS

D41. AUTHORITY TO CARRY ON BUSINESS

D41.1 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.

D42. SAFE WORK PLAN

D42.1 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.

D42.2 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, Purchasing Division website at http://www.winnipeg.ca/matmgt/safety/default.stm

D43. INSURANCE

D43.1 The Consultant shall procure and maintain, at their own expense and cost, insurance policies with limits no less than those shown below.

D43.2 As a minimum, the Consultant shall, without limiting their obligations or liabilities under any other contract with the City, procure and maintain, at their own expense and cost, the following insurance policies:

(a) Comprehensive or Commercial General Liability Insurance including:

(i) an inclusive limit of not less than $5,000,000 for each occurrence or accident with a minimum $5,000,000 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) 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 $5,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence.

(c) Professional Errors and Omissions Liability Insurance including:

(i) an amount not less than $5,000,000 per claim and $5,000,000 in the aggregate.

D43.2.1 The Consultant's Professional Errors and Omissions Liability Insurance shall remain in force for the duration of the Project and for twenty-four (24) months after Contract 5 Total Performance.

D43.3 The policies required in D43.2(a) shall provide that the City and Manitoba and its Ministers, officers, employees and agents 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.

D43.4 The Consultant shall require any Consultants hired to perform geotechnical drilling and sample collecting or closed-circuit television to procure and maintain, at their own expense and cost, comparable insurance to that set forth under D43.2(a) and D43.2(b).

D43.5 The Consultant shall require each of their Subconsultants hired for design, architectural or engineering services as outlined in the Scope of Services to provide comparable insurance to that set forth under D43.2(a) and D43.2(b).

D43.6 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 D43.9.

D43.7 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.

D43.8 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.

D43.9 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

D44. COMMENCEMENT

D44.1 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.

D44.2 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 D41;
  (ii) the Safe Work Plan specified in D41.1; and
  (iii) evidence of the insurance specified in D42.1.

(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 D49.1

D44.3 The City intends to award this Contract by April 23, 2026.

D45. CRITICAL STAGES

D45.1 The Consultant shall achieve critical stages of the Services for this Contract in accordance with the following requirements:

(a) Contract 1 – River Crossing Twin Force Mains:
  (i) 100% Design Completed by October 30, 2026;
  (ii) RFQ closes on MERX by December 2, 2026;
  (iii) Construction Tender closes on MERX by February 17, 2027;
  (iv) Site Work Begins by June 28, 2027;
  (v) Total Performance by November 7, 2029;

(b) Contract 2 – Downstream Gravity Sewer Interceptor:
  (i) 100% Design Completed by July 23, 2027;
  (ii) RFQ closes on MERX by October 13, 2027;
  (iii) Construction Tender closes on MERX by December 13, 2027;
  (iv) Site Work Begins by April 11, 2028;
  (v) Total Performance by November 18, 2030;

(c) Contract 3 – Linacre Lift Station:
  (i) 100% Design Completed by June 6, 2028;
  (ii) RFQ closes on MERX by October 5, 2028;
  (iii) Construction Tender closes on MERX by December 12, 2028;
  (iv) Site Work Begins by June 21, 2029;
  (v) Lift Pumps in Operation by April 30, 2031;
  (vi) Total Performance by October 29, 2031;

(d) Contract 4 – Upstream Gravity Sewers:
  (i) 100% Design Completed by June 6, 2028;
  (ii) Construction Tender closes on MERX by December 12, 2029;
  (iii) Site Work Begins by April 24, 2030;
  (iv) Installation of 900mm and 1050mm Sewers Complete by October 30, 2030;
  (v) Total Performance by November 5, 2031;

(e) Contract 5 – Kilkenny Lift Station Demolition:
  (i) 100% Design Completed by October 17, 2031;
  (ii) Demolition Tender closes on MERX by February 11, 2032;
  (iii) Site Work Begins by June 11, 2032;
  (iv) Total Performance by September 28, 2032;

(f) Record Documents Review Submission no later than two (2) months after Total Performance for each Contract.

D46. SUPPLY CHAIN DISRUPTION SCHEDULE DELAYS

D46.1 The City acknowledges that the schedule for this Contract may be impacted by Supply Chain Disruption. Commencement and progress of the Services shall be performed by the Consultant with due consideration to delivery requirements and schedule identified in the Contract, in close consultation with the Consulting Contract Administrator.

D46.2 If the Consultant is delayed in the performance of the Services by reason of the Supply Chain Disruption, the Services schedule may be adjusted by a period of time equal to the time lost due to such delay and costs related to such delay will be determined as identified herein.

D46.3 A minimum of seven (7) Calendar Days prior to the commencement of Services, the Consultant shall declare whether a Supply Chain Disruption will affect the start date. The Consultant shall provide sufficient evidence that the delay is directly related to a Supply Chain Disruption, including but not limited to evidence related to availability of staff, ordering of Material or Goods, production and/or manufacturing schedules or availability of staff as appropriate.

D46.4 For any delay related to Supply Chain Disruption and identified after Services have commenced, the Consultant shall within seven (7) Calendar Days of becoming aware of the anticipated delay declare the additional delay and shall provide sufficient evidence as indicated in D46.3. Failure to provide this notice will result in no additional time delays being considered by the City.

D46.5 The Services schedule, including the durations identified in the Contract, will be adjusted to reflect delays accepted by the Consulting Contract Administrator.

D46.6 Any time or cost implications as a result of Supply Chain Disruption and in accordance with the above, as confirmed by the Consulting Contract Administrator, shall be documented in accordance with C8.

D47. PUBLIC ENGAGEMENT

D47.1 The Consultant shall work collaboratively with the Office of Public Engagement.

D47.2 The Consultant shall host three (3) public engagement meetings with the project team, including:

(a) Internal Departments:
  (i) Public Works (including individuals responsible for street opening and closing);
  (ii) Property and Development;
  (iii) Office of Public Engagement;

(b) Landowners and Business Owners Near Project Area:
  (i) Indigenous Rights Holders;
  (ii) Manitoba Metis Federation;
  (iii) Maple Grove Park users;
  (iv) Area residents along Kilkenny Drive;
  (v) Environmental groups;

(c) Other Stakeholder Groups:
  (i) Utility and service providers in the area;

D47.3 The review of public materials and advance notice of public events require time. The Consultant shall ensure adequate time is accounted for in the Project schedule.

D47.3.1 All public materials must be posted online two (2) weeks prior to an in-person event.

D47.3.2 The anticipated review period for materials will be minimum three (3) weeks prior to posting.

D47.3.3 Following review, the translation of final public materials (if required) should be allocated at least one week to complete.

D47.4 The City will cover expenses for public engagement activities, including, for example, venue rental charges, equipment rental, catering for refreshments, translation, printing, postage, courier, newspaper advertising, photocopying. subject to prior approval of costs by the Consulting Contract Administrator. Wherever possible, City facilities will be used to host public events.

Public & Stakeholder Engagement Deliverables

D47.5 The Consultant shall develop and provide the following deliverables in accordance with https://winnipeg.ca/PublicEngagement:

(a) a public engagement strategy that clearly identifies:
  (i) the public's role in the decision-making process;
  (ii) the decision points/steps within the overall project, and the scope of the decisions to be made at each step;
  (iii) the need/interest associated with each decision step, along with the recommended level of participation; and
  (iv) how input will be considered and incorporated where possible.

(b) event(s) and engagement opportunities;

(c) summaries corresponding to engagement phases; and

(d) a final public engagement report.

(i) Including meeting notes, important correspondence, display materials, engagement materials, notification materials, a summary of responses, stakeholder contact lists and all other relevant materials and content.

Public & Stakeholder Engagement Expectations

D47.6 The Consultant will work collaboratively with the Office of Public Engagement and the City team.

D47.7 All public and stakeholder engagement material developed by the Design Consultant will meet City of Winnipeg Standards and bylaws.

D47.8 The Consultant will find a means of effectively integrating the input provided by participants in the public and stakeholder engagement process, rather than simply reporting what was said. Input may include the following items:

(a) Site selection rationale;

(b) Potential traffic and access impacts;

(c) Building size and design;

(d) Potential shadow, privacy, safety or disturbance impacts;

(e) Potential construction and pos-construction activity impacts (noise, vibrations, dust, working outside City bylaw hours, etc.).

(f) Potential property value implications.

D47.9 The Consultant will review engagement feedback in a team setting and at key milestone, in order to determine how the Project may be adjusted (i.e. timing, construction style, communication needs, etc.).

D47.10 The Design Consultant will review early stakeholder input, which will in turn help inform design options; these design options will in turn be shared with stakeholders, who can then provide specific input based on the details of the preliminary design concept. The new feedback will then be shared with the Design Consultant, helping to inform both the development of evaluation criteria as well as the evaluation of the design option(s). When the Consultant returns to stakeholders for the final round of engagement, they should be able to speak confidentially as to how feedback was considered, and where possible, addressed – in cases where potential impacts cannot be mitigated, the team will be able to explain the rationale as to why not.

Public & Stakeholder Engagement Outcomes

D47.11 The execution of the public engagement plan will result in reaching the following objectives:

(a) participants and the general public have an understanding of the City’s current systems and processes;

(b) participants and the general public recognize the need for the Project being undertaken;

(c) participants’ perceptions, improvements and a vision for the Project are considered and incorporated into the review;

(d) participants input in response to terms of reference are collected and considered; and

(e) participants understand how their input was considered and incorporated (where possible) into the Project.

MEASUREMENT AND PAYMENT

D48. INVOICES

D48.1 Further to C11, Consultant:

(a) shall prepare monthly invoices for Work performed and send to the Consulting Contract Administrator for review prior to being sent for processing;

(b) once approval has been given or revisions required for invoices by the Consulting Contract Administrator, the Consultant shall submit invoices for processing in accordance with the instructions on the City's website at: https://www.winnipeg.ca/finance/corporate-accounts-payable.stm; and copy the Consulting Contract Administrator on submission of invoices.

D48.2 Invoices must clearly indicate, as a minimum:

(a) the City's purchase order number;

(b) the City's project number and title: 'S-1333 – Southwest Sewer Catchment Area Upgrades';

(c) the Consulting Contract Administrator's name;

(d) date of delivery;

(e) delivery address;

(f) setup to match Form B line items;

(g) type and quantity of work performed;

(h) the amount payable with GST and MRST shown as separate amounts; and

(i) the Consultant's GST registration number.

D48.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D49. PAYMENT

D49.1 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

D50. DISPUTE RESOLUTION

D50.1 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 D50.

D50.2 The entire text of C17.4 is deleted, and amended to read: "Intentionally Deleted"

D50.3 The entire text of C17.5 is deleted, and amended to read:

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

D50.4 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.

D50.4.1 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.

D50.4.2 As these negotiations are not an adjudicative hearing, neither party may have legal counsel present during the negotiations.

D50.4.3 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.

D50.4.4 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 D50.4.3, as extended if applicable, has elapsed, the Consulting Contract Administrator will issue a Final Determination as defined in C1.1(dd), at which point the parties will be governed by the Dispute Resolution process set out in C17.

THIRD PARTY AGREEMENTS

D51. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

D51.1 Funding for the Services of the Contract is being provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada and accordingly, as required by the applicable funding agreements, the following terms and conditions shall apply.

D51.2 For the purposes of D51:

(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.

D51.3 Indemnification By Consultant

D51.3.1 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.

D51.3.2 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;

in relation to this Contract or the Work.

D51.4 Records Retention and Audits

D51.4.1 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.

D51.4.2 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 D51.4.1 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.

D51.5 Other Obligations

D51.5.1 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.

D51.5.2 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.

D51.5.3 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.

D51.5.4 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.

D51.5.5 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.

D51.5.6 The Consultant represents and warrants that no member of the House of Commons or of the Senate of Canada or of the Legislative Assembly of Manitoba is a shareholder, director or officer of the Consultant or of a Subconsultant, and that no such member is entitled to

any benefits arising from this Contract or from a contract with the Consultant or a Subconsultant concerning the Work.

APPENDIX A – SW SEWER CATCHMENT AREA UPGRADES PROJECT MAP

APPENDIX B – NON-DISCLOSURE AGREEMENT

APPENDIX C – HISTORICAL DRAWINGS

APPENDIX D – WWD AUTOMATION DESIGN GUIDE

APPENDIX E – WWD HMI LAYOUT AND ANIMATION PLAN

APPENDIX F – COW TAG NAMING STANDARD

APPENDIX G – WSTP E&I STANDARDIZATION CLAUSES

APPENDIX H – WASTERWATER COLLECTION COMMISSIONING FORMS

APPENDIX I – WASTEWATER COLLECTION LIFT STATION ASSET EQUIPMENT LIST

APPENDIX J – SAMPLE ASSET EQUIPMENT ATTACHMENT FILE MTR-L01

APPENDIX K – COW MODELING GUIDELINES

APPENDIX L – CANCELLING & SUPERSEDING EXISTING CITY DRAWINGS

APPENDIX M – LIST OF PROVINCIALLY CERTIFIED ARCHEOLOGISTS