



THE CITY OF WINNIPEG

REQUEST FOR PROPOSAL

RFP NO. 234-2020

**PROFESSIONAL CONSULTING SERVICES FOR SW SEWER CATCHMENT
REGIONAL UPGRADES DESIGN**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 PROFESSIONAL CONSULTING SERVICES FOR SW SEWER CATCHMENT REGIONAL UPGRADES DESIGN

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, August 26, 2020.

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

B3. BIDDER CONFERENCE

B3.1 The Contract Administrator or an authorized representative will conduct a bidder conference on:
(a) July 29, 2020 at 1:30p.m. Winnipeg time.

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.

B3.2.1 Consultants are requested to register for the bidder conference by contacting the Contract Administrator identified in D2.1.

B3.3 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 B3.2.1.

B3.4 Although attendance at the bidder conference is not mandatory, the City strongly recommends that Proponents attend.

B3.5 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 Contract Administrator in writing.

B3.6 An Addendum will be issued following the bidder conference documenting the major items discussed.

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Project Manager identified in D2.

B4.2 If the Proponent finds errors, discrepancies or omissions in the Request for Proposal, or is unsure of the meaning or intent of any provision therein, the Proponent shall promptly notify the Project Manager of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.

B4.3 Responses to enquiries which, in the sole judgment of the Project Manager, require a correction to or a clarification of the Request for Proposal will be provided by the Project Manager to all Proponents by issuing an addendum.

B4.4 Responses to enquiries which, in the sole judgment of the Project Manager, do not require a correction to or a clarification of the Request for Proposal will be provided by the Project Manager only to the Proponent who made the enquiry.

- B4.5 All correspondence or contact by Proponents with the City in respect of this RFP must be directly and only with the City's Project Manager. Failure to restrict correspondence and contact to the Project Manager may result in the rejection of the Proponents Proposal Submission.
- B4.6 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 Project Manager 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 Project Manager. The use and disclosure of the Confidential Information shall not apply to information which:
- (a) was known to the Proponent before receipt hereof; or
 - (b) becomes publicly known other than through the Proponent; or
 - (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.
- B5.2 The Proponent shall not make any statement of fact or opinion regarding any aspect of the Request for Proposals to the media or any member of the public without the prior written authorization of the Project Manager.

B6. ADDENDA

- B6.1 The Project Manager may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Request for Proposal, or clarifying the meaning or intent of any provision therein.
- B6.2 The Project Manager will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B6.3 Addenda will be available on the MERX website at www.merx.com.
- B6.4 The Proponent is responsible for ensuring that he/she has received all addenda and is advised to check the MERX website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B6.5 The Proponent shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid/Proposal. Failure to acknowledge receipt of an addendum may render a Proposal non-responsive.
- B6.6 Notwithstanding B4, enquiries related to an Addendum may be directed to the Project Manager indicated in D2.

B7. PROPOSAL SUBMISSION

- B7.1 The Proposal shall consist of the following components:
- (a) Form A: Bid/Proposal (Section A) in accordance with B8;
 - (b) Fees (Section B) in accordance with B9.
- B7.2 The Proposal should also consist of the following components:
- (a) Experience of Proponent and Subconsultants (Section C) in accordance with B10;

- (b) Experience of Key Personnel Assigned to the Project (Section D), in accordance with B11;
- (c) Project Understanding and Methodology (Section E) in accordance with B12; and
- (d) Project Schedule (Section F) in accordance with B13.
- (e) Form P: Person Hours in accordance with B9.2 and B9.3.

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, 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.

- (a) The main Proposal should be less than fifty (50) pages in total, excluding appendices.
- (b) Only the first fifty (50) pages of each Proposal will be evaluated, excluding appendices.

B7.6 The Proposal shall be submitted electronically through MERX.

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

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

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

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

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

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

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

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

B9. FEES (SECTION B)

B9.1 The Proposal shall include a Fixed Fee for the following items of work. These items are further defined in PART E - Scope of Services.

- (a) Conceptual Design: Hydraulic Model Update TM as outlined in E4;
- (b) Conceptual Design: City Goals/Benefits & Background TM as outlined in E5;
- (c) Conceptual Design: Alternatives Identification TM as outlined in E6;
- (d) Conceptual Design: Conceptual Report as outlined in E7 and E8;
- (e) Preliminary Design: Hydraulic Model Updates as outlined in E9;
- (f) Preliminary Design: Initiation And 60% Draft as outlined in E10;
- (g) Preliminary Design: Risk And Opportunities Identification as outlined in E11; and
- (h) Preliminary Design: Presentation And Final Report as outlined in E12; and

B9.2 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.

B9.3 The hourly rate schedule for Key Personnel in Form P: Person Hours will be utilized where required for the work identified in E13 Geotechnical Work Allowance and E14 Additional Work Allowance.

- (a) The Proponent shall include a Geotechnical Work Allowance of \$250,000.00 in their Proposal, which has been included on Form B: Fees and Form P: Person Hours.
- (b) The Proponent shall include an Additional Work Allowance of \$50,000.00 in their Proposal, which has been included on Form B: Fees and Form P: Person Hours.
- (c) The Additional Work Allowance and Geotechnical Work Allowance is to be included in the calculation of total Fees proposed by the Proponent.
- (d) The Additional Work Allowance and Geotechnical Work Allowance is to be used for engineering and design services that arise due to unforeseen conditions arising in conceptual and preliminary design phases of the project.
- (e) The Additional Work Allowance and Geotechnical Work Allowance shall only be used with written permission of the City Project Manager.
- (f) There will be no fee escalation allowed for yearly adjustments, promotions, etc. Fee scale shall be fixed for the duration of the project based on the rates set in Form P: Person Hours.

B9.4 Adjustments to Fees will only be considered based on increases to the Scope of Services.

B9.4.1 The City will not consider an adjustment to the Fees based on changes in the Project budget or the Final Total Construction Cost.

- B9.5 Notwithstanding C1.1(b), Fees shall include costs for out of town travel, related meals and accommodations for the duration of the Project and shall not be considered an Allowable Disbursement.
- B9.6 The Fee Proposal shall also include an allowance for Allowable Disbursements as defined in C1.1(b), but shall exclude the costs of any materials testing, soils and hazardous materials investigation during construction.
- B9.7 Notwithstanding C11.1, Fees submitted shall not include the Goods and Services Tax (GST) or Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.
- B9.8 Payments to Non-Resident Proponents are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. EXPERIENCE OF PROPONENT AND SUBCONSULTANTS (SECTION C)

- B10.1 Proposals should include:
- (a) details demonstrating the history and experience of the Proponent and Subconsultants in providing programming; evaluation, study, design, and management of the project on three (3) projects of similar complexity, scope and value.
 - (i) Priority in evaluation shall be given to projects of similar scope, then of similar complexity, and finally of similar value.
- B10.2 For each project listed in B10.1(a), the Proponent should submit:
- (a) description of the project;
 - (b) scope of the engineering assignment that the Proponent was contracted to perform;
 - (c) Listing of assigned Key Personnel involved in the reference project as per B11.
 - (i) Preference in evaluation shall be provided to reference projects in which Key Personnel assigned to the project as per section B11 had a major role.
 - (ii) Details of the role of each of the Key Personnel on the project should be provided.
 - (iii) The approximate percentage of each Key Personnel's workload in comparison to the total Proponent workload on the project should be provided.
 - (d) project's original contracted cost and final cost;
 - (e) design and schedule (anticipated Project schedule and actual Project delivery schedule, showing design separately);
 - (f) project owner;
 - (g) If the project is ongoing at the time of Proposal writing, the approximate percentage completion and percentage work remaining on the project at the time of Proposal writing should be provided.
 - (h) reference information (consisting of two (2) current contact names, email addresses and telephone number contact information associated with each reference project):
 - (i) References may be used to confirm information provided in the Proposal.
 - (ii) Other sources not named in references may be contacted to verify the qualifications, work experience, past projects, applicability of the role, etc.
- 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 in this Section.

B11.2 Include an organizational chart for the Project.

B11.2.1 All team members, including Key Personnel as per B11.4 should be included in the organizational chart.

(a) Roles of each of the Key Personnel in the Project should also be identified in the organizational chart.

B11.3 Clearly identify any Subconsultants that are part of the work.

(a) Distinguish roles and Key Personnel for any Subconsultants that are part of the work.

B11.4 Key Personnel shall be defined as each person providing support in the technical and project management aspects of the Work specified in PART D - Supplemental Conditions and PART E - Scope of Services.

(a) Involvement in the technical aspects shall include but not be limited to the following:

- (i) Deliverable development.
- (ii) Communication with the City regarding the requirements of the Work.

(b) Involvement in the project management aspects shall include but not be limited to the following:

- (i) directing and coordinating efforts of the Proponent team to achieve the specific Project goals and objectives and to meet all City requirements;
- (ii) Development of project budget estimates and schedules.
- (iii) Monitoring and controlling work schedule and costs.
- (iv) Progress reporting in order to track and measure schedule and cost performance for the Scope of Services
- (v) Maintaining ongoing communication with the City to coordinate reviews of deliverables and to provide project status
- (vi) Quality control/quality assurance of deliverables.

B11.5 Submit the experience and qualifications of the Key Personnel assigned to the Project:

- (a) Proposed role and responsibilities;
- (b) Core capabilities and/or technical skills
- (c) educational background and degrees,
- (d) professional recognition,
- (e) job title,
- (f) years of experience in current position,
- (g) years of experience related to the items identified in PART D - Supplemental Conditions and PART E - Scope of Services, and
- (h) years of experience with existing employer.

B11.6 For each Key Personnel 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 Personnel is included in B10, provide only the project name and the role of the Key Personnel. For other projects provide the following:

- (a) Description of project;
- (b) Role of the Key Personnel;
 - (i) Key Personnel's workload in comparison to the total Proponent workload may be evaluated along with the Key Personnel's role.

- (c) Project Owner;
- (d) reference information (consisting of one (1) current contact name, email address and telephone number contact information associated with each reference project)
 - (i) References may be used to confirm information provided in the Proposal.
 - (ii) Other sources not named in references may be contacted to verify the qualifications, work experience, past projects, applicability of the role, etc.

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 PART D - Supplemental Conditions and PART E - Scope of Services.
- 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 team's understanding of the broad functional and technical requirements;
 - (b) clearly identifying and explaining work activities;
 - (c) stating assumptions and interpretations of the Scope of Services;
 - (d) stating the Proponents' understanding of the constraints that will affect the work;
 - (e) indicating activities and services to be provided by the City;
 - (f) the proposed Project budget;
 - (g) the City's Project methodology with respect to the information provided within this RFP and the City's Project Management Manual at <http://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#2> and templates at <http://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#4> ; and;
 - (h) 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 Part E - Scope of Services.
- 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 or a table of their own design provided it includes all information requested in accordance with B12.5.
- B12.7 For each person identified in B11.5, list the percent of the person's time to be dedicated to the Project in accordance with PART D - Supplemental Conditions and PART E - Scope of Services.
- (a) This percentage will be an approximation of each person's total time available spent dedicated towards the Project. It should not represent the percentage of each person's time in relation to all hours assigned to the Project.
 - (b) Form P: Person Hours has included a row at the bottom of the table specifically dedicated to identify these percentages.
- B12.8 The Form P: Person Hours should be broken down such that the task descriptions align with the project schedule and work breakdown structure submitted in accordance with B13.

B13. PROJECT SCHEDULE AND WORK BREAKDOWN STRUCTURE (SECTION F)

B13.1 Proponents should present a carefully considered Critical Path Method schedule using Microsoft Project or similar project management software, complete with resource assignments (key designers), durations (weekly timescale) and milestone dates or events. The schedule should address each requirement of the Scope of Services.

- (a) The schedule should align within the items within the Fee Schedule of Form B: Prices, and the Task Descriptions of Form P: Person Hours.

B13.2 The Proponent's schedule should include critical dates for review and approval processes by the City. Reasonable times should be allowed for completion of these processes.

- (a) Refer to D6.2 for the minimum timeframes for the City review of specific project deliverables. The minimum timeframes stipulated in D6.2 are not exhaustive. The Proponent shall use their judgement for estimating timeframes all other review and approval processes.

B13.3 The Proponent will present a work breakdown structure aligned with the project schedule showing

- (a) the key personnel and hours assigned to each activity in the schedule
- (b) the total costs assigned to each activity in the schedule.

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) Tetra Tech Inc. (Formerly Wardrop Engineering Inc.)

B14.3 The following reports were prepared by the organizations identified in B14.2:

- (a) Alternative Wastewater Servicing For The Waverley West Subdivision. Wardrop Engineering Inc. 2005.
- (b) Alternative WWS Interceptor Plan To Service Waverley West Subdivision - Hydraulic and Financial Analysis, Wardrop Engineering Inc. 2008.
- (c) South End Water Pollution Control Centre (SEWPCC) Service Boundary Inflow/Infiltration and Cross-Connection Study, Wardrop Engineering Inc. 2009.

B15. CONFLICT OF INTEREST AND GOOD FAITH

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

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

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

that could or would be seen to:

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

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

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

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

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

B15.5 Without limiting B15.3, and in addition to all contractual or other rights or rights at law or in equity or legislation that may be available to the City, the City may, in its sole discretion:

- (a) disqualify a Proponent that fails to disclose a perceived, potential or actual Conflict of Interest of the Proponent or any of its Key Personnel;
- (b) require the removal or replacement of any Key Personnel proposed for the Services that has a perceived, actual or potential Conflict of Interest that the City, in its sole discretion, determines cannot be avoided or mitigated;
- (c) disqualify a Proponent or Key Personnel proposed for the Services that fails to comply with any requirements prescribed by the City pursuant to B15.4 to avoid or mitigate a Conflict of Interest; and
- (d) disqualify a Proponent if the Proponent, or one of its Key Personnel proposed for the Project, has a perceived, potential or actual Conflict of Interest that, in the City's sole discretion, cannot be avoided or mitigated, or otherwise resolved.

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

B16. QUALIFICATION

B16.1 The Proponent shall:

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

- (c) have all the necessary experience, capital, organization, and equipment to perform the Services in strict accordance with the terms and provisions of the Contract;
 - (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, Materials Management 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; and
 - (c) have a written workplace safety and health program, if required, pursuant to The Workplace Safety and Health Act (Manitoba);
 - (d) have the knowledge and resources to administer the requirements of The Workplace Safety and Health Act (Manitoba) during the construction works associated with this Contract; and
 - (e) undertake to meet all licensing and regulatory requirements of the appropriate governing authorities and associations in the Province of Manitoba.
- B16.4 The Proponent shall submit, within three (3) Business Days of a request by the Project Manager, further proof satisfactory to the Project Manager of the qualifications of the Proponent and of any proposed Subconsultant.
- B16.5 The Proponent shall provide, on the request of the Project Manager, full access to any of the Proponent's equipment and facilities to confirm, to the Project Manager's satisfaction, that the Proponent's equipment and facilities are adequate to perform the Services.
- B17. OPENING OF PROPOSALS AND RELEASE OF INFORMATION**
- B17.1 Proposals will not be opened publicly.
- B17.2 After award of Contract, the 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.
- B17.4 Following the award of Contract, a Proponent will be provided with information related to the evaluation of his/her submission upon written request to the Project Manager.

B18. IRREVOCABLE OFFER

- B18.1 The Proposal(s) submitted by the Proponent shall be irrevocable for the time period specified in Paragraph 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 his/her Proposal without penalty prior to the Submission Deadline.

B20. INTERVIEWS

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

B21. NEGOTIATIONS

- B21.1 The City reserves the right to negotiate details of the Contract with any Proponent. Proponents are advised to present their best offer, not a starting point for negotiations in their Proposal Submission.
- B21.2 The City may negotiate with the Proponents submitting, in the City's opinion, the most advantageous Proposals. The City may enter into negotiations with one or more Proponents without being obligated to offer the same opportunity to any other Proponents. Negotiations may be concurrent and will involve each Proponent individually. The City shall incur no liability to any Proponent as a result of such negotiations.
- B21.3 If, in the course of negotiations pursuant to B21.2, 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 categories:
- | | |
|--|-------------|
| (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 Subconsultants; (Section C) | 25% |
| (e) Experience of Key Personnel Assigned to the Project; (Section D) | 25% |
| (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 its 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.
- B22.6 Further to B22.1(c) where the Fees exceeds the estimate stated in D7, the City may determine that no award will be made in accordance with B23.2.1(a).**
- B22.7 Further to B22.1(d), Experience of Proponent and Subconsultants will be evaluated considering the information provided in response to B10, including but not limited to the following summary criteria:
- (a) similarity of the Proponent's past projects referenced in B10 to this Project;
 - (b) success of the Proponent on past projects referenced in B10; and
 - (c) past performance on City of Winnipeg projects not specifically referenced in B10 may also be considered under Experience of Proponent and Subconsultants.
- B22.7.1 Proponents that have not worked with the City before will be evaluated based on the information provided in response to B10.1(a)
- B22.8 Further to B22.1(e), Experience of Key Personnel Assigned to the Project will be evaluated considering the experience and qualifications of the Key Individuals and Subconsultant personnel on Projects of comparable size and complexity, considering the information provided in B11, including but not limited to the following summary criteria:
- (a) appropriateness of related years of experience of the Key Personnel;
 - (b) relevancy of experience of the Key Personnel; and
 - (c) appropriateness of approach to overall team formation and coordination of team members.
- B22.9 Further to B22.1(f), Project Understanding and Methodology will be evaluated considering the information provided in response to B12, including but not limited to the following summary criteria:
- (a) appropriateness of the Project Management Approach;
 - (b) consistency and completeness of the Methodology;
 - (c) appropriateness of fees and/or hours assigned to individual tasks per Key Personnel;
 - (d) proponent's understanding of the Project, including its deliverables and constraints; and
 - (e) demonstration of insight beyond the information that was presented in this RFP.
- B22.10 Further to B22.1(g), Project Schedule and Work Breakdown Structure will be evaluated considering the Proponent's ability to comply with the requirements of the Project, in accordance with B13.
- (a) The completeness and consistency of the Project schedule; and appropriateness of the timelines provided shall be evaluated, in addition to the criteria specified in 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(d), the score of zero may be assigned to the incomplete part of the response.
- B22.12 The City reserves the right to conduct an independent verification of information in the Proposal Submission received and generally pertaining to the qualifications and experience of the Proponent and any proposed members of its team.

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.

B22.14 Proposals will be evaluated considering the information in the Proposal Submission and any interviews held in accordance with B20.

B23. AWARD OF CONTRACT

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

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

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

- (a) the prices exceed the available City funds for the Services;
- (b) the prices are materially in excess of the prices received for similar services in the past;
- (c) the prices are materially in excess of the City's cost to perform the Services, or a significant portion thereof, with its own forces;
- (d) only one Proposal is received; or
- (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

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

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

B23.5 Further to B23.4 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(o)(ii) 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(o).

B23.8 Following the award of Contract, a Proponent will be provided with information related to the evaluation of its Proposal upon written request to the Project Manager.

B23.9 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 2017-03-24) are applicable to the Services of the Contract.
- C0.1.1 The *General Conditions for Consultant Services* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm.
- C0.2 A reference in the Request for Proposal to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Consultant Services*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. PROJECT MANAGER

D2.1 The City's Project Manager is:
Sean Gordon, P. Eng.
Telephone No. 204 986-4817
Email Address: sgordon@winnipeg.ca

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

D3. DEFINITIONS

D3.1 When used in this Request for Proposal:

- (a) "**AACE**" means the Association for the Advancement of Cost Engineering;
- (b) "**Class 3 Cost Estimate**" means an estimate with an expected accuracy range within - 20% to +30%. This estimate is typically associated with the preliminary design level of definition;
- (c) "**CAD**" means Computer Assisted Drafting;
- (d) "**City Stakeholders**" means City Of Winnipeg Management Staff not directly involved in deliverables review, but directly or indirectly impacted by the findings of this project;
- (e) "**DWF**" means dry weather flow;
- (f) "**External Stakeholders**" means departments, private business entities, private citizens, and/or the public at large which may be directly or indirectly impact by the findings of this project;
- (g) "**GIS**" means Geographical Information System;
- (h) "**PDF**" means Portable Document Format electronic file;
- (i) "**PDWF**" means peak dry weather flow;
- (j) "**PWWF**" means peak wet weather flow;
- (k) "**Professional Engineer**" means an engineer registered in the Province of Manitoba;
- (l) "**SEWPCC**" means South End Sewage Treatment Plant;
- (m) "**Southwest Sewer Catchment**" means the collective separate sewer districts which flow to the D'Arcy pumping station for conveyance to the SEWPCC for treatment;
- (n) "**TM**" means Technical Memorandum;
- (o) "**Working Group**" means the City of Winnipeg staff directly involved in deliverables review with the Consultant;
- (p) "**WWD**" means City of Winnipeg's Water and Waste Department; and
- (q) "**WWF**" means wet weather flow.

D4. BACKGROUND

D4.1 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.

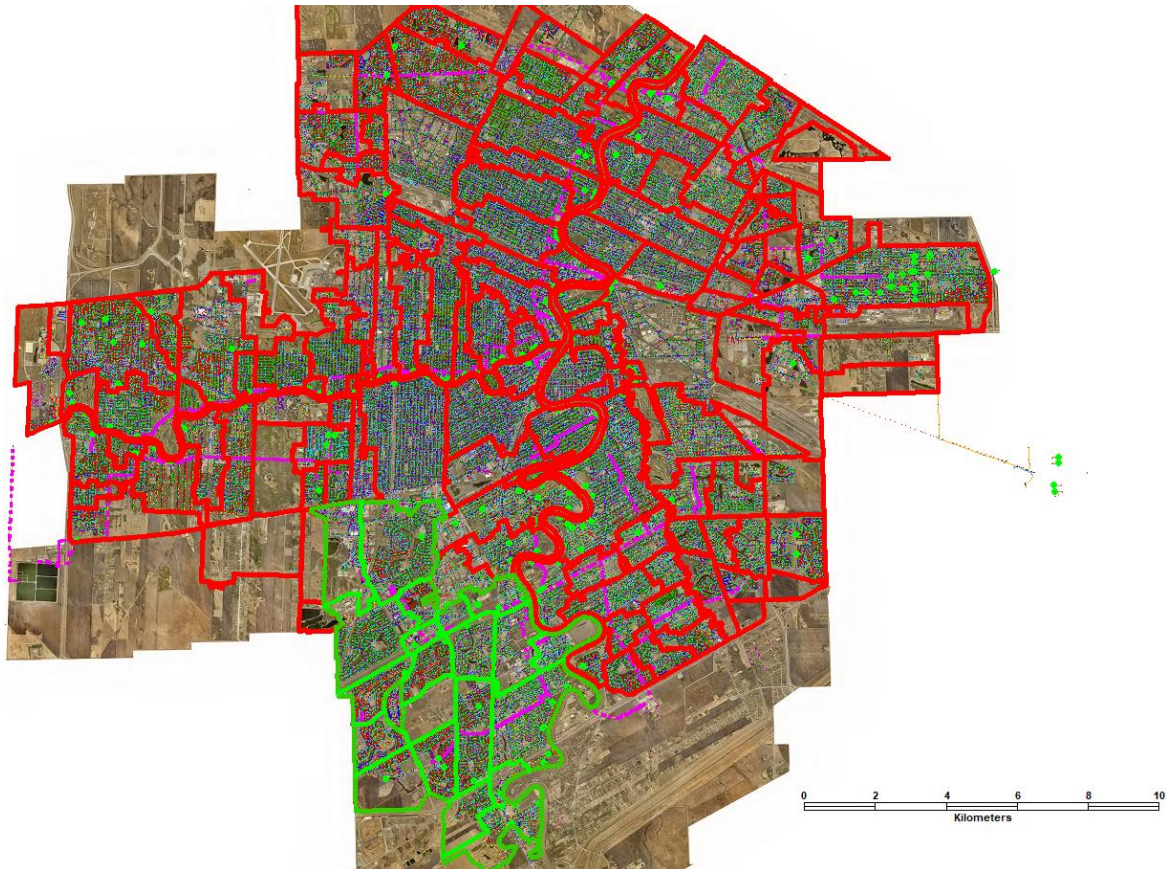


Figure 1: Southwest Sewer Catchment Extents (Shown In Cyan)

- D4.2 The Southwest Sewer Catchment services an approximate area of 3,300 ha and an approximate population of 64,000, as of 2019.
- (a) This information should be evaluated, confirmed and/or further refined as part of the work identified in E4 and E5.
- D4.3 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.
- D4.4 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%.
- D4.5 The SEWPCC which receives all wastewater from the Southwest Sewer Catchment, is currently undergoing major upgrades to the entire treatment plant. Once these upgrades are complete the following pumping capacities will be provided:
- (a) Maximum pumping capacity (raw sewage): 420 ML/d

- (b) Firm maximum pumping capacity (Largest pump out of service): 308 ML/d
- (c) Increases to the treatment capacities will also result from the SEWPCC Upgrade. Further information regarding the design treatment capacities from the SEWPCC Upgrade will be provided to the awarded Consultant upon request.

D4.6 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.

The extents of regional sewer upgrades are shown in Figure 2 below.

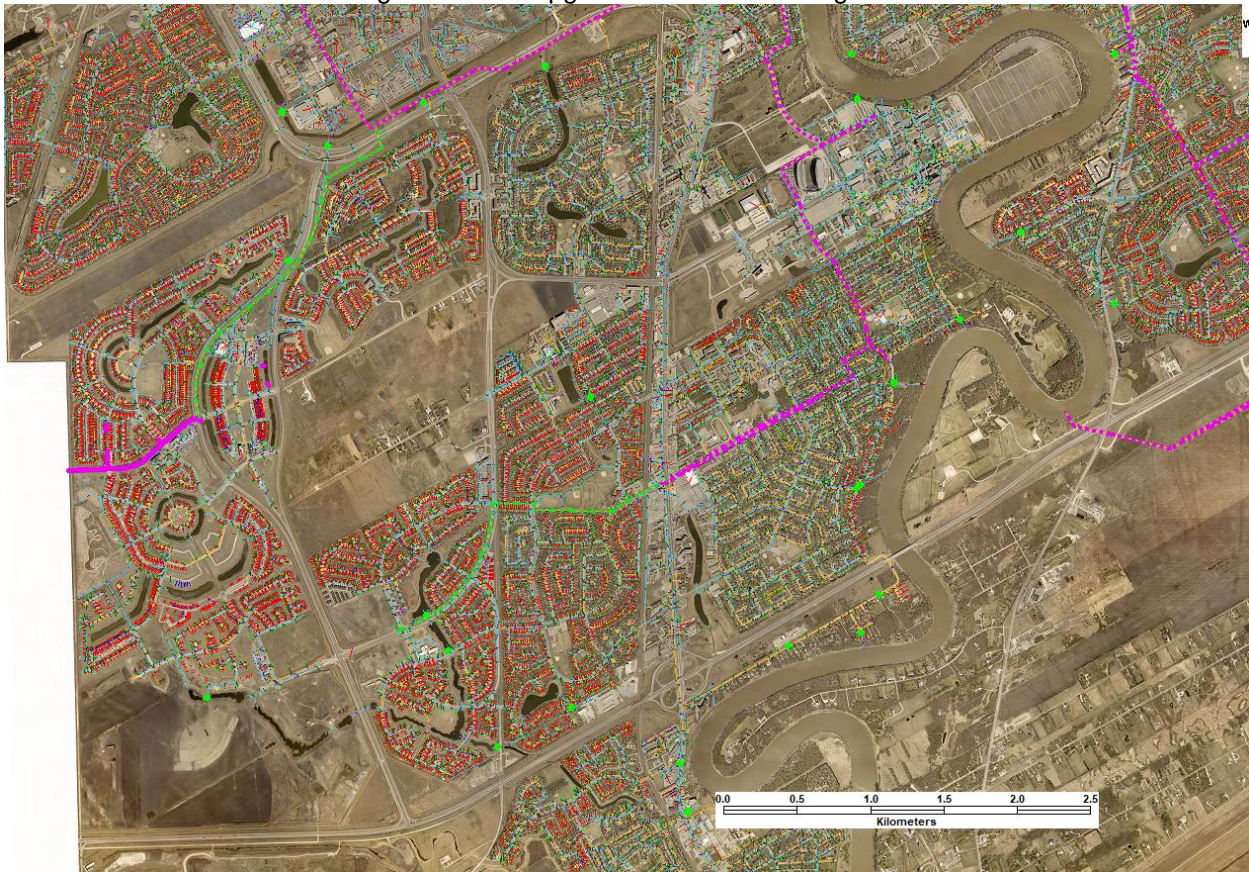


Figure 2: Extents Of Regional Sewer Upgrades To Service Waverley West (Shown In Cyan)

- D4.7 Each of the regional sewer infrastructure upgrades to accommodate the Waverley West neighborhood are documented in the original 2005 and subsequently updated 2008 reports completed by Tetra Tech Inc (formerly Wardrop Engineering). These reports are available to Consultants upon request to the Project Manager. See D5.
- D4.8 Specific routes for a river crossing to service the Southwest Sewer Catchment were evaluated internally at a conceptual level in 2016.

- (a) An arrangement in which flows were intercepted at the intersection of Cornell Drive and Baldry Bay, directed via Linacre Road and Vassar Park to the Red River, and then cross the River into Maple Grove Park was evaluated in detail. This was found internally to be the optimal route to consider for a river crossing solution.
- (b) Specific options for construction of the river crossing were then considered, including:
 - (i) a single barrel siphon in comparison to a three barrel siphon; and
 - (ii) river crossing construction via horizontal direction drilling (HDD) or via microtunnelling.
- (c) Cost estimates for this work, including river crossing construction and regional interceptor construction to the river crossing were produced at a conceptual level ranging from \$44 million to \$50 million in 2016 dollars. These cost estimates included all project overhead/indirect costs and a project contingency.
- (d) The specifics of this river crossing route, and the conceptual cost estimates produced for each river crossing construction scenario, are available to Consultants upon request to the Project Manager. See D5.

D4.9 Future work is to upgrade and/or modify the Southwest Sewer Catchment to accommodate future growth/densification. This may include the construction of a dedicated river crossing to compliment the river crossing serviced by the D'Arcy pumping station. The evaluation of the required future works is the intent of the conceptual and preliminary design study work requested in this RFP.

D5. RELEVANT DOCUMENTS AND DRAWINGS

- D5.1 Relevant documents and drawings are available by request to the City's Project Manager after completion of the Non-Disclosure Agreement in Appendix B.
- D5.2 The following documents and drawings will be released at the sole discretion of the City:
 - (a) D'Arcy Wastewater Pumping Station & Ft. Garry -St. Vital Interceptor updating, 1989 : design notes. City Of Winnipeg. 1989.
 - (b) Construction of D'Arcy, Mager Drive and Tylehurst Wastewater Pumping Station modifications (Tender No. PD 98-007). City Of Winnipeg. 1998.
 - (c) Alternative Wastewater Servicing For The Waverley West Subdivision. Wardrop Engineering. 2005.
 - (d) Alternative WWS Interceptor Plan To Service Waverley West Subdivision - Hydraulic and Financial Analysis, Wardrop Engineering. 2008.
 - (e) South End Water Pollution Control Centre (SEWPCC) Service Boundary Inflow/Infiltration and Cross-Connection Study, Wardrop Engineering. 2009.
 - (f) Southwest River Crossing Conceptual Routing And Cost Estimates – Internal Evaluation, City of Winnipeg. 2016.

D6. GENERAL REQUIREMENTS

D6.1 General Requirements of the Consultant

- D6.1.1 The Consultant shall ensure that the Scope of Services is performed under direct supervision of a Professional Engineer.
 - (a) All drawings, reports, recommendations and other documents involving the practice of professional engineering shall bear the stamp or seal and signature of a qualified engineer as required by the Engineering and Geoscientific Professions Act of the Province of Manitoba and By-laws of the Engineers Geoscientists Manitoba.
 - (b) Other reports and documents not involving the practice of professional engineering, such as letters of information, minutes of meetings, may be originated and signed by other personnel engaged by the Consultant and accepted by the City.

D6.1.2 The Consultant shall, at a minimum, use the most current industry standard sustainable practices and conform to the latest codes, standards, regulations and legislative requirements in effect. The Consultant shall liaise with the City's Project Manager on the application of codes and standards.

D6.1.3 Consultants shall not substitute, replace or add additional Key Personnel throughout the duration of the Project without written approval of the City's Project Manager.

- (a) Experience and qualifications as specified in B11 shall be submitted for all requested substitute(s), replacement(s), or additional Key Personnel.

D6.2 General Requirements for Project Deliverables

D6.2.1 All Deliverables shall have incorporated the Consultant's internal quality procedures before being submitted to the City.

D6.2.2 Draft Documents Minimum Submission Requirements.

- (a) This sequence of document submission is required at minimum over the course of the Project. The Consultant to determine if additional submission stages beyond those listed below are required, and include these meetings in their Proposal.

- (i) Hydraulic Model Update Technical Memorandum

- ◆ Shall be submitted to the Project Manager during the Conceptual Design work.

- (ii) City Goals/Benefits & Background Review Technical Memorandum

- ◆ Draft of the TM shall be submitted to the Project Manager at least fifteen (15) Business Days prior to the City Goals/Benefits Review Meeting.

- (iii) Conceptual Design Report Table Of Contents

- ◆ Initial Table Of Contents for the Conceptual Design Report shall be submitted to the Project Manager following the Conceptual Design Report Initiation Meeting. The Table Of Contents will identify which sections within the draft Table Of Contents are intended to be updated during the Alternatives Identification and Alternatives Analysis processes.

- (iv) Alternatives Identification Technical Memorandum

- ◆ Draft of the TM shall be submitted to the Project Manager at least fifteen (15) Business Days prior to the Alternatives Identification Meeting.

- (v) Conceptual Design Report

- ◆ Draft of conceptual design report at 60% level of completion shall be submitted to the Project Manager at least fifteen (15) Business Days prior to the Alternatives Analysis Meeting.
 - ◆ Draft of conceptual design report at 95% level of completion shall be submitted to the Project Manager for final review and comment.

- (vi) Preliminary Design Report Table Of Contents

- ◆ Initial Table Of Contents for Preliminary Design Report shall be submitted to the Project Manager following the Preliminary Design Report Initiation Meeting.

- (vii) Risk Register/Framework

- ◆ Risk Register/Framework draft shall be submitted to the Project Manager, at least ten (10) Business Days prior to the Risk & Opportunities Identification Meeting.

- (viii) Preliminary Design Report

- ◆ 60% complete draft of Preliminary Design Report shall be submitted to the Project Manager, at least fifteen (15) Business Days prior to the 60% Draft Review Meeting.

- ◆ 95% complete draft of Preliminary Design Report shall be submitted to the Project Manager, at least twenty (20) Business Days prior to the Preliminary Design Report Presentation.
 - (ix) Preliminary Design Report Presentation Slides
 - ◆ The slides shall be submitted at minimum fifteen (15) Business Days prior to the scheduled Preliminary Design Summary Presentation.
 - (b) Submit searchable PDF copy and native file format of all documents submitted for review.
 - (c) Submit comment tracking spreadsheet as part of draft document revisions and resubmissions.
 - (i) Comment tracking spreadsheet to log specific comments/edits requested by the City working group, the Consultant's response, and City's acceptance/rejection of Consultant's response.
- D6.2.3 Final Documents Submission Requirements**
- (a) Submit PDF copy of final documents so the City can verify that all comments from the 95% draft have been incorporated.
 - (b) Project Manager must give final approval that all comments have been satisfactorily answered prior to the Consultant printing paper copies.
 - (c) Two (2) paper copies, with one (1) unbound and one (1) bound shall be submitted of all documents once finalized.
 - (d) Submit searchable .PDF copy and native file format document of all final documents.
- D6.2.4 Models**
- (a) Consultant to submit all model files in native file format in addition to other requirements outlined in E9 and Appendix I.
- D6.2.5 Drawings**
- (a) The City will provide comments on the draft drawings where required. Comments shall be reviewed and incorporated into the final drawings.
- D6.2.6** The City of Winnipeg will require the Consultant and any Subconsultants to provide, within sixty (60) Calendar days of the provision of the final Conceptual Design Report and the final Preliminary Design Report, electronic copies of all background notes, calculations, working notes, research, field logs, working copy spreadsheets, model inputs, survey notes, etc. pertinent to the Conceptual and Preliminary Design Report work. The intent is to provide all background documentation used for the report development, so that the City has a complete understanding of all details related to this Project.
- (a) The format for the provided materials may take multiple formats, but should be provided in electronic format (spreadsheets, CAD drawings, scans, etc.) in an organized electronic filing system.
 - (b) Our rationale for requiring this information is that we (The City, or Consultants working for the City) on subsequent work related to this project may need to refer to specific details in the future.
- D6.3 General Requirements for Meetings**
- D6.3.1** Various project meetings will be required throughout the Project in order to track the Consultant's progress, review the Project work plan, address Project issues and allow for technical reviews with the City. The Consultant will be responsible for the coordination of all meetings and should clearly indicate in their Proposal Submission, locations, number of meetings and proposed meeting schedule associated with meetings for each of the various tasks/work activities.
- D6.3.2** An agenda shall be sent to the City's Project Manager at least two (2) Business Days prior to any meeting.

- D6.3.3 The Consultant shall take minutes at all meetings and workshops in which they attend. Minutes are to be forwarded to the City's Project Manager within five (5) Business Days.
- D6.3.4 Mandatory meetings listed below to be attended by the Consultant's Project Manager and any relevant Key Personnel at minimum.
- (a) Project Initiation Meeting
- (i) This meeting may be completed remotely, or at the City's offices.
 - (ii) This meeting will at minimum discuss:
 - ◆ Sequence of tasks expected by the Consultant to complete the project.
 - ◆ City's goals for project. Ensure the City's goals as part of this meeting are clearly documented in the meeting minutes.
 - ◆ Milestone dates
 - ◆ Key personnel on project and their role
 - ◆ Project communications
 - ◆ Procedures for modifications to project scope, key personnel, scheduled dates.
 - (iii) All Consultant Key Personnel required at this meeting;
- (b) City Goals/Benefits Review Meeting
- (i) See E5 for further information on the scope of work in relation to this meeting.
 - (ii) This meeting may be completed remotely, or at the City's offices.
 - (iii) This meeting will be conducted after a draft City Goals/Benefits & Background Review Technical Memorandum ready for the City's review has been completed.
 - (iv) The following design criteria will not be raised for discussion during this meeting:
 - ◆ Level of Service evaluation standards for combined and separate sewer systems. These are already established for the City of Winnipeg collection system. These standards are formally documented within the Modeling Guidelines. See Appendix I.
 - ◆ The design horizon the solutions in question must be modelled to ensure it provides the benefits desired over the entire design life for the solution. This design horizon will be 35 years. See E4.7.
 - (v) This meeting will at minimum:
 - ◆ Summarize the Consultant's understanding of the overall goals/benefits the potential solutions for the Southwest Sewer Catchment aim to address, as per the draft City Goals/Benefits & Background Review TM.
 - ◆ Summarize the Consultant's findings from the background literature review, and the validity of previous studies as part of the current work.
 - ◆ Summarize the reasoning behind the ranking arrangement of the goals/benefits by Consultant, to verify which goals/benefits take higher or lower priority for the solutions.
 - ◆ Allow for City working group's feedback.
 - (vi) All Consultant Key Personnel are required at this meeting.
- (c) Alternatives Identification Meeting – Conceptual Design Phase
- (i) See E6 for further information on the scope of work in relation to this meeting.
 - (ii) This meeting may be completed remotely, or at the City's offices.
 - (iii) This meeting will be conducted once a first draft of the Alternatives Identification Technical Memorandum is complete.
 - (iv) This meeting will at minimum:
 - ◆ Summarize the criteria used by the Consultant to determine separate alternatives.

- ◆ Summarize the criteria and/or specific alternatives which were suggested to be excluded, and reasoning for exclusion.
 - ◆ Summarize the alternatives selected for further review as part of the Conceptual Design Report, to meet City goals.
 - ◆ Summarize how the Consultant believes each alternative could meet City goals.
 - ◆ Present the initial thoughts on the methodologies proposed to be utilized to determine costs for each alternative.
 - ◆ Present the initial thoughts on the methodologies proposed to be utilized to determine benefits for each alternative.
 - ◆ Facilitate brainstorming session with City staff to present any additional alternatives for conceptual design review.
 - ◆ Allow for City working group's feedback.
- (v) All Consultant Key Personnel are required at this meeting.
- (d) Alternatives Analysis Review Meeting – Conceptual Design Phase
- (i) See E7 for further information on the scope of work in relation to this meeting.
 - (ii) This meeting may be completed remotely, or at the City's offices.
 - (iii) This meeting will be conducted once a 60% complete draft of Conceptual Design Report has been developed.
 - (iv) This meeting will at minimum:
 - ◆ Summarize the methodologies utilized to determine costs for each alternative.
 - ◆ Summarize the methodologies utilized to determine the benefits for each alternative.
 - ◆ Present any additional alternatives selected for analysis based on findings during the cost/benefit findings, if applicable.
 - ◆ Present current recommendations based on cost/benefit rankings, or based on other criteria at Consultant's discretion.
 - ◆ Allow for City working group's feedback.
 - (v) All Consultant Key Personnel are required at this meeting.
- (e) Project Initiation Meeting – Preliminary Design Report Phase
- (i) See E10 for further information on the scope of work in relation to this meeting.
 - (ii) This meeting may be completed remotely, or at the City's offices..
 - (iii) This meeting will at minimum discuss:
 - ◆ Sequence of tasks expected by the Consultant to complete the remainder of the project.
 - ◆ Changes from initial Proposal submission sequence of tasks.
 - ◆ Milestone dates
 - ◆ Key personnel on project and their role
 - (iv) All Consultant Key Personnel required at this meeting;
- (f) 60% Draft Review Meeting – Preliminary Design Report Phase
- (i) See E10 for further information on the scope of work in relation to this meeting.
 - (ii) This meeting will be completed in person at the City's offices.
 - (iii) An appropriate internal review period for the 60% complete preliminary design report by the City working group will occur prior to this meeting.
 - (iv) This meeting will at minimum discuss:
 - ◆ Summary of methodology to be used to produce AACE Class 3 estimate for the solution selected.
 - ◆ Summary of work to date as part of preliminary design work.

- ◆ Summary of unknowns remaining at this point in relation to preliminary design work.
- ◆ Allow for City working group's feedback.
- (v) All Consultant Key Personnel are required at this meeting;
- (g) Risk & Opportunities Identification Meeting – Preliminary Design Report Phase
 - (i) See E11 for further information on the scope of work in relation to this meeting.
 - (ii) This meeting will be conducted in person at the City's offices.
 - (iii) A framework/register in which risks and opportunities are to be identified will be submitted at minimum ten (10) Business Days prior to this meeting.
 - ◆ This submitted framework/register will also have a "first pass" of risks and opportunities applicable to the solution completed by the Consultant.
 - (iv) This meeting will at minimum:
 - ◆ Allow for brainstorming among City working group and Consultant of Risks and Opportunities applicable to the solution currently under preliminary design.
 - ◆ Document of risks and opportunities identified during the meeting.
 - ◆ Discuss and documentation of response plan of action and an owner or owners responsible for each risk and opportunity identified.
- (h) 95% Draft Review Meeting – Preliminary Design Report Phase
 - (i) See E12 for further information on the scope of work in relation to this meeting.
 - (ii) This meeting may be completed remotely, or at the City's offices..
 - (iii) An minimum fifteen (15) day internal review period of the City working group will occur prior to this meeting.
 - (iv) This meeting will at minimum discuss:
 - ◆ Specific content of sections of the report, where applicable.
 - ◆ Outstanding work for detailed design report development.
 - ◆ Milestone dates upcoming.
 - ◆ Allow for City feedback.
 - ◆ Allow for City working group's feedback.
 - (v) All Consultant Key Personnel required at this meeting;
- (i) Monthly Progress Meetings
 - (i) These meetings will be completed by teleconference, throughout the Project duration.
 - (ii) The City Project Manager, or a designate to act on behalf of the City Project Manager, along with the Consultant's Key Personnel considered appropriate are to attend this meeting.

D6.3.5 The Consultant is to determine if additional meetings beyond the mandatory meetings listed above are required, and include these meetings in their Proposal.

D6.4 Relevant Design Standards

D6.4.1 The following design standards shall be applicable to this project:

- (a) WWD Electrical Design guide (Appendix C);
- (b) WWD Identification Standard (Appendix D);
- (c) WWD HMI Layout and Animation Plan (Appendix E);
- (d) WWD Wastewater Treatment Facilities Automation Design Guide (Appendix F);
 - (i) These design requirements will also be applied to the collection system where relevant and useful.
- (e) WSTP Electrical and Instrumentation Standardization Summary (Appendix G);

- (i) The City of Winnipeg has standardized on specific electrical and automation manufacturers. The Consultant should use standardized equipment in their preliminary design where applicable.
- (ii) Computer Assisted Drafting (CAD) and Geographic Information System (GIS) Standards and templates can be found here :
https://winnipeg.ca/waterandwaste/dept/cad_gis.stm;
- (f) Modeling Standards
 - (i) See E4 and Appendix I for specific modeling requirements as part of the scope of work.
- (g) City of Winnipeg Wastewater Flow Estimation And Servicing Guidelines:
<https://winnipeg.ca/waterandwaste/dept/wastewaterFlow.stm>
- (h) CSO Master Plan District Engineering Plans (DEPs)
 - (i) <https://winnipeg.ca/waterandwaste/pdfs/sewage/2019CSOMasterPlan.pdf>
 - ◆ Refer to page 342 of the document linked above.
 - (ii) The DEPs from the CSO Master Plan will be used a guideline for the minimum content to include in the final Conceptual Design Report. See E7.4.
- (i) The City's Project Management Manual:
<https://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#3>
- (j) The City's Project Management templates:
<https://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#5>
- (k) The City's Investment Planning templates:
<https://winnipeg.ca/infrastructure/asset-management-program/templates-manuals.stm#4>

D6.4.2 Notwithstanding the foregoing, the Consultant is being engaged by the City for its professional expertise; the Consultant shall bring to the City's Project Manager's attention any aspect of the City's standards, manuals, guidelines or templates which the Consultant is of the opinion is not consistent with good industry practice.

D6.5 Investment Planning Templates

D6.5.1 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.

D6.5.2 At minimum, the following Investment Planning Templates shall be utilized by the Consultant:

- (a) The latest version of the Net Present Value (NPV) And Benefit Calculation tool shall be used by the Consultant as part of the Alternatives Identification and Alternatives Analysis phases.
 - (i) Assumptions made by the Consultant as part of the utilization of the NPV and Benefit Calculation tool shall be documented within the Conceptual Design Report.
- (b) The latest version of the Basis Of Estimate (BoE) template shall be used by Consultant as part of the Preliminary Design Study Development phase. This will be as part of the development of the AACE Class 3 Estimate for the solution recommended.

D6.6 Geotechnical Work Allowance

D6.6.1 The general requirements for the Geotechnical Work Allowance are as follows:

- (a) The Consultant shall include in Form P: Person Hours the hourly rates of all Key Personnel and non-Key Personnel proposed for this project by role. These rates will be used for the Geotechnical Work Allowance when defined and approved.
- (b) If a member of the Consultant's Key Personnel or non-Key Personnel is not listed by name on Form P, when that staff member is proposed for work under the Geotechnical Work Allowance, the Consultant shall follow the requirements as stated in D6.1.3 and **Error! Reference source not found..**
- (c) The Consultant shall apply a maximum of ten (10) percent markup on all work performed by a Sub Consultant.
- (d) Expenditures under the Geotechnical Work Allowance must be authorized by the City's Project Manager.
- (e) Where the actual cost of performing the services under the Geotechnical Work Allowance is less than the amount of the Geotechnical Work Allowance, the City will be credited for the unexpended portion of the Geotechnical Work Allowance, but not for the Consultant's overhead and profit on such amount.
- (f) The Contract price will be adjusted by written order to provide for a difference between the amount of the Geotechnical Work Allowance and the actual cost of the work.
- (g) The City reserves the right to delete any or all of the Geotechnical Work Allowance from the Contract if the Work intended to be covered by the Geotechnical Work Allowance is not required, or if the Works intended are found to be more extensive than the provisional Geotechnical Work Allowance.

D6.7 Additional Work Allowance

D6.7.1 The general requirements for the Additional Work Allowance are as follows:

- (a) The Consultant shall include in Form P: Person Hours the hourly rates of all Key Personnel and non-Key Personnel proposed for this project by role. These rates will be used for the Additional Work Allowance when defined and approved.
- (b) If a member of the Consultant's Key Personnel or non-Key Personnel is not listed by name on Form P, when that staff member is proposed for work under the Additional Work Allowance, the Consultant shall follow the requirements as stated in D6.1.3 and **Error! Reference source not found..**
- (c) The Consultant shall apply a maximum of ten (10) percent markup on all work performed by a Sub Consultant.
- (d) Expenditures under the Additional Work Allowance must be authorized by the City's Project Manager.
- (e) The City reserves the right to delete any or all of the Additional Work Allowance from the Contract if the Work intended to be covered by the Additional Work Allowance is not required, or if the Works intended are found to be more extensive than that provisioned by the Additional Work Allowance.

D6.8 Invoicing

D6.8.1 Fixed Fee scope of work items as described in B9.1, excluding Project Management, shall only be invoiced once the City Project Manager has accepted and received all deliverables for that scope except the following;

- (a) Project Management activities as described in E3 shall be invoiced on a monthly basis. Payment by the City will not be made until all monthly Project Management deliverables have been submitted by the Consultant.

D6.8.2 If any Additional Work Allowance scope items are approved to be completed on an hourly basis utilizing Form P. The Consultant shall submit monthly invoices for that scope of work.

D6.9 External Stakeholders Engagement

- (a) The Consultant shall establish a stakeholder engagement plan as part of the initiation of the Work.
 - (i) This engagement plan will document the timing during the project development that external stakeholders will be contacted, and by what means.
 - (ii) This will be subject to approval by the City's Project Manager.
- (b) In all cases where communication from the Consultant to an external stakeholder is required:
 - (i) such communication will be developed by the Consultant's where required, and
 - (ii) the Consultant's communication will be transmitted to the external stakeholders by staff within the City of Winnipeg.
- (c) Stakeholders external to the City project team for the project should include, but not be limited to:
 - (i) Department of Fisheries And Oceans, Government Of Canada
 - (ii) Infrastructure Department, Government Of Manitoba
 - (iii) Conservation And Climate Department, Government Of Manitoba
 - (iv) Crown Services Department, Government Of Manitoba
 - (v) Municipal Relations Department, Government Of Manitoba
 - (vi) City Of Winnipeg Councillor(s) whose Electoral Ward may be impacted by proposed arrangement of regional sewer infrastructure construction, as applicable.
 - (vii) Canada National Railway (CNR), as applicable.
 - (viii) Canadian Pacific Railroad (CPR), as applicable.
 - (ix) External underground utilities (Manitoba Hydro, underground communications, underground oil/gas lines, etc.) as applicable.

D7. AVAILABLE FUNDS

- D7.1 The funds available for this Contract are \$1.2 million.

SUBMISSIONS

D8. AUTHORITY TO CARRY ON BUSINESS

- D8.1 The Consultant shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Consultant does not carry on business in Manitoba, in the jurisdiction where the Consultant does carry on business, throughout the term of the Contract, and shall provide the Project Manager with evidence thereof upon request.

D9. INSURANCE

- D9.1 The Consultant shall procure and maintain, at its own expense and cost, insurance policies with limits no less than those shown below.
- D9.2 As a minimum, the Consultant shall, without limiting its obligations or liabilities under any other contract with the City, procure and maintain, at its own expense and cost, the following insurance policies:
- (a) Comprehensive or Commercial General Liability Insurance including:
 - (i) an inclusive limit of not less than \$2,000,000 for each occurrence or accident with a minimum \$2,000,000 Products and Completed Operations aggregate and \$5,000,000 general aggregate;
 - (ii) all sums which the Consultant shall become legally obligated to pay for damages because of bodily injury (including death at any time resulting therefrom) sustained

- by any person or persons or because of damage to or destruction of property caused by an occurrence or accident arising out of or related to the Services or any operations carried on in connection with this Contract;
- (iii) coverage for Products/Completed Operations, Blanket Contractual, Consultant's Protective, Personal Injury, Contingent Employer's Liability, Broad Form Property Damage, Employees as Additional Insureds, and Non-Owned Automobile Liability;
 - (iv) a Cross Liability clause and/or Severability of Interest clause providing that the inclusion of more than one Insured shall not in any way affect the rights of any other Insured hereunder in respect to any claim, demand, suit or judgment made against any other Insured.
- (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Consultant directly or indirectly in the performance of the Service. The limit of liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence.
 - (c) Professional Errors and Omissions Liability Insurance including:
 - (i) an amount not less than \$ 2,000,000 per claim and \$ 2,000,000 in the aggregate.
- D9.2.1 The Consultant's Professional Errors and Omissions Liability Insurance shall remain in force for the duration of the Project and for thirty-six (36) months after Total Performance.
- D9.3 The policies required in D9.2(a) shall provide that the City is named as an Additional Insured thereunder and that said policies are primary without any right of contribution from any insurance otherwise maintained by the City.
- D9.4 The Consultant shall require any Consultants hired to perform geo technical drilling and sample collecting or closed-circuit television to procure and maintain, at its own expense and cost, comparable insurance to that set forth under D9.2(a) and D9.2(b).
- D9.5 The Consultant shall require each of its Subconsultants hired for design, architectural or engineering services as outlined in the Scope of Services to provide comparable insurance to that set forth under D9.2(a) and D9.2(c).
- D9.6 The Consultant shall provide the Project Manager 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 C4.1 for the return of the executed Contract. Such certificates shall state the exact description of the Services and provide for written notice in accordance with D9.9.
- D9.7 The Consultant may take out such additional insurance as it may consider necessary and desirable. All such additional insurance shall be at no expense to the City.
- D9.8 All insurance, which the Consultant is required to obtain with respect to this Contract, shall be with insurance companies registered in and licensed to underwrite such insurance in the Province of Manitoba.
- D9.9 The Consultant shall not cancel, materially alter, or cause any policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the City.

SCHEDULE OF SERVICES

D10. COMMENCEMENT

- D10.1 The Consultant shall not commence any Services until it is in receipt of a notice of award from the City authorizing the commencement of the Services.
- D10.2 The Consultant shall not commence any Services until:
 - (a) the Project Manager has confirmed receipt and approval of:

- (i) evidence of authority to carry on business specified in D8;
 - (ii) evidence of the insurance specified in D9.
- (b) the Consultant has attended a meeting with the Project Manager, or the Project Manager has waived the requirement for a meeting.

D10.3 The City intends to award this Contract by the fourth quarter of 2020, or earlier.

D11. CRITICAL STAGES

D11.1 The Consultant shall achieve critical stages of the Services for this Contract in accordance with the following requirements:

- (a) Finalized Conceptual Report submitted by the third quarter of 2021.
- (b) Submission of final Preliminary Design Report deliverables, with all comments from the City incorporated and accepted by the fourth quarter of 2022.

D11.2 The Consultant may suggest alternative critical stages within the Proposal, but must also provide reasoning for this based on their understanding of the scope of work. The City may accept deviations from these critical stages if sufficient reasoning is provided.

D12. COVID-19 SCHEDULE DELAYS

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

D12.2 If the Consultant is delayed in the performance of the Services by reason of the COVID-19 pandemic, the Services schedule may be adjusted by a period of time equal to the time lost due to such delay and costs related to such delay will be determined as identified herein.

D12.3 Within seven (7) Calendar Days of the award of Contract, the Consultant shall declare whether COVID-19 will affect the start date. If the Consultant declares that COVID-19 will affect the start date, the Consultant shall provide sufficient evidence that the delay is directly related to COVID-19, including but not limited to evidence related to availability of staff or work by others.

D12.4 For any delay related to COVID-19 and identified after Services have commenced, the Consultant shall within seven (7) Calendar Days of becoming aware of the anticipated delay declare the additional delay and shall provide sufficient evidence as indicated in D12.3. Failure to provide this notice will result in no additional time delays being considered by the City.

D12.5 Any time or cost implications as a result of COVID-19 and in accordance with the above, as confirmed by the Contract Administrator, shall be documented in accordance with C8.

PART E - SCOPE OF SERVICES

E1. GENERAL PROJECT SCOPE SUMMARY

- E1.1 To review and identify options for expanding sewage conveyance in the Southwest Sewer Catchment, as part of Conceptual Design.
- (a) This may include construction of a second dedicated river crossing, upgrades to regional infrastructure within the Southwest Sewer Catchment, and/or other elements the Consultant proposes and is evaluated.
 - (b) An AACE Class 5 capital cost estimate for the selected option will be completed as part of the Conceptual Design.
 - (c) Refer to E5, E6, E7 and E8.
- E1.2 The option selected during the Conceptual Design will then progress to Preliminary Design.
- (a) An AACE Class 3 capital cost estimate for the selected option will be completed as part of the Preliminary Design.
 - (b) Refer to E9, E10, E11, and E12.

E2. WORK COMPONENTS

- E2.1 The major components of the Work include the following:
- (a) Project Management as outlined in E4;
 - (b) Conceptual Design: Hydraulic Model Update TM as outlined in E4;
 - (c) Conceptual Design: City Goals/Benefits & Background TM as outlined in E5;
 - (d) Conceptual Design: Alternatives Identification TM as outlined in E6;
 - (e) Conceptual Design: Alternatives Analysis as outlined in E7;
 - (f) Conceptual Design: Final Report Submission as outlined in E8;
 - (g) Preliminary Design: Hydraulic Model Updates as outlined in E9;
 - (h) Preliminary Design: Initiation And 60% Draft as outlined in E10;
 - (i) Preliminary Design: Risk And Opportunities Identification as outlined in E11;
 - (j) Preliminary Design: Presentation And Final Report as outlined in E12;
 - (k) Geotechnical Work Allowance as outlined in E13; and
 - (l) Additional Work Allowance as outlined in E14.
- E2.2 The major components of the Work identified in E2.1 shall form the minimum requirements and anticipated high level sequence of work. The Consultant is encouraged to review the major work components and provide additional information on how the work components could be altered, updated, or sequenced appropriately as part of their Proposal submission.
- E2.3 Unless otherwise stated, the document titled "Definition of Professional Consultant Services" and attached as Appendix A shall be applicable to the provision of Professional Engineering services for this Project.
- E2.4 Review all applicable information, data, surveys, reports and existing drawings related to the Project including, but not limited to the information contained in this RFP.

E3. PROJECT MANAGEMENT

- E3.1 This Scope of Services item shall include all Project Management activities required to carry out each of the phases of the Scope of Services. Work under this task will include but not be limited to the following:

- (a) directing and coordinating efforts of the Consultant team to achieve the specific Project goals and objectives and to meet all City requirements;
- (b) providing advice, engineering services, consultation and oversight with respect to the Scope of Services;
- (c) liaising with the City's Project Manager on a weekly basis (at a minimum) to provide Project status;
- (d) The Consultant Project Manager will be required to provide Progress Reporting in order to track and measure schedule and cost performance for the Scope of Services.

E3.2 All Project Management work is to be appropriately included in the Fixed Price costs for each phase of work.

E3.3 Deliverables

E3.3.1 Monthly Progress Reports

- (a) Submit within two (2) weeks of award the proposed progress reporting format for City review and acceptance. The initial progress report submission will include development of the performance measurement baseline schedule for each task / activity and specific deliverables.
- (b) Reporting will be completed in a format consistent with the Consultant's Work Breakdown Structure (WBS) and be reconcilable with the accounting and invoicing system.
- (c) Progress reports will include the following minimum requirements:
 - (i) Progress reporting to be submitted to the City on a monthly basis, a minimum of two (2) Business Days prior to the Monthly Progress Meetings.
 - (ii) problems/issues update including description of issue and proposed method of resolution;
 - (iii) work planned for next month;
 - (iv) progress compared to schedule by task/activity;
 - (v) work completed during month;
 - (vi) progress of work planned last month;
 - (vii) estimated percentage complete by task/activity and overall; and
 - (viii) progress reports will be coordinated so as to be incorporated as part of the monthly progress meetings.

E4. CONCEPTUAL DESIGN: HYDRAULIC MODEL UPDATE REQUIREMENTS TM

E4.1 The work within this phase may begin concurrently with the work identified in E5.

E4.2 This phase shall include all activities required to evaluate the City of Winnipeg Hydraulic Model and identify gaps and areas of improvement necessary to utilize the model for Preliminary Design.

E4.3 A copy of the City InfoWorks ICM hydraulic model database with the associated model files will be made available to the Consultant awarded the Work.

E4.4 Literature Review

E4.4.1 A thorough review of the previous design study literature will be completed, in relation to methodologies used to create and update the hydraulic model for the Southwest Sewer Catchment.

E4.5 Hydraulic Modelling Standards

E4.5.1 All hydraulic modelling analysis completed by the Consultant will be in accordance with the City of Winnipeg Hydraulic Modelling Guidelines, see Appendix I.

E4.6 Hydraulic Model Gaps Analysis

- E4.6.1** The Consultant will complete an evaluation of the conditions and parameters in place with the current City of Winnipeg InfoWorks hydraulic model. The Consultant will identify all gaps/issues they believe to be within the hydraulic model prior to completing any benefits evaluation during the Conceptual Design Phase.
- E4.6.2** The City will make all attempts to address gaps/issues in the hydraulic model. The model is to be assessed as to suitability to represent the study area needs and to assess solutions.
- E4.6.3** All gaps/issues identified, and how they were addressed, shall be documented as part of the Hydraulic Model Update Technical Memorandum.
- E4.6.4** If the gaps/issues cannot be addressed appropriately by the City or the Consultant, they shall be documented as such as part of the Hydraulic Model Update Technical Memorandum.
- E4.6.5** The goal of this analysis will be to update the hydraulic model such that it is fit for purpose as part of the conceptual and preliminary design work.

E4.7 Detriment Analysis Using The Hydraulic Model

- E4.7.1** Each solution developed during the conceptual design phase and preliminary design phase shall be evaluated using the standardized Detriment Analysis process using the City of Winnipeg collections hydraulic model.
- E4.7.2** The Detriment Analysis process will require the Consultant to run the City of Winnipeg Hydraulic model with the proposed solution(s) included.
- (a)** The performance of this updated model compared to specific level of service standards will be evaluated, specifically to verify there to be no reduction in level of service within the Hydraulic model as a result of the solution(s) proposed.
 - (b)** Detriment Analysis will be completed for the following level of service standards, as applicable:
 - (i) Surface Flooding
 - (ii) Surcharge (Basement Flooding)
 - (iii) Spill/Overflows
 - (c)** The Detriment Analysis process will also require that a variation of the solution model be produced over the design horizon for the solution recommended.
 - (i) **A minimum design horizon of 35 years is required.**
 - (ii) The design horizon selected will be recommended by the Consultant as part of the detriment analysis process for the recommended solution.
 - (iii) This future solution model will have proposed increases in population and impervious areas artificially applied up to the design year for the solution.
 - (iv) The intent is to provide evidence that the solution will also meet requirements without causing detriments over the entire design life for the solution.
- E4.7.3** Further details on the Detriment Analysis process, see Appendix I.

E4.8 Deliverables

E4.8.1 Hydraulic Model Update Technical Memorandum

- (a)** This TM will include the following minimum requirements:
 - (i) Summary of work completed to update the hydraulic model.
 - (ii) Gaps/issues identified in the hydraulic model, and how they were addressed.
- (a)** This TM should be submitted prior to the Alternatives Identification Phase.

E5. CONCEPTUAL DESIGN: CITY GOALS/BENEFITS & BACKGROUND TM

- E5.1 The work within this phase may begin concurrently with the work identified in E4.
- E5.2 This phase shall include all activities required to evaluate the current City of Winnipeg Southwest Sewer Catchment. This includes review and compilation of existing sewer system data required to complete the work in the conceptual and preliminary design phases.
- E5.3 The Consultant will request and review all pertinent background reports, operating data, flow monitoring results and any other data the Consultant feels pertinent in the background evaluation.
- (a) Previous reports have been completed which specifically review potential future work for the Southwest Sewer Catchment at a conceptual level. As much as possible the Consultant should rely upon conceptual study work previously completed to augment the current conceptual study work requested.
 - (b) Collect and review all available information about the site including files, reports, topography, existing facilities and future land use planning. Obtain utility information, and where necessary conduct field surveys and investigations to verify assumptions, existing conditions and to supplement available information.
- E5.4 This phase will include review and confirmation of goals/benefits most important to the City in regards to the solutions to be evaluated.
- E5.5 **Deliverables**
- E5.5.1 **City Goals/Benefits & Background Technical Memorandum**
- (a) The intent behind City Goals/Benefits & Background TM is to formally document and confirm amongst all parties the goals/benefits and criteria of the City of Winnipeg in regards to the solutions to be evaluated.
 - (b) This TM shall include high level listing of the overall goals/benefits the potential solutions for the Southwest Sewer Catchment aim to address.
 - (c) This TM will be based on the Consultant's findings during the background literature review, and any feedback provided by the City working group during this time.
 - (d) A ranking arrangement of the goals/benefits will also be provided by the Consultant, to verify which goals/benefits take higher or lower priority when ranking the solutions.
 - (e) This TM shall also summarize previous conceptual design work completed in relation to this project as part of the literature review. The validity of assumptions/findings from these previous studies relative to current project work shall also be included. The intent will be for the Consultant to state what aspects of previously completed conceptual design work can be utilized as part of this conceptual design report.
 - (f) A draft of this TM will be provided a minimum fifteen (15) days prior to the City Goals/Benefits Review Meeting, see D6.3.4.
 - (g) Further updates to the TM shall be completed based on the City working group's feedback to the draft, and based on feedback provided during the Goals/Benefits Review Meeting.
 - (h) The City shall verify that all comments made to the City Goals/Benefits TM at this phase are addressed appropriately by the Consultant before this phase is considered complete.
 - (i) This TM will also document the following previously established design criteria, to document and confirm it is understood how it will be applied by the Consultant. These design criteria are not open to interpretation or revision as part of this project:
 - (i) Level of service evaluation standards for combined and separate sewer systems. These are established for the City of Winnipeg collection system. These standards are formally documented within the Modeling Guidelines. Refer to the table below for the level of service standards applicable to this

project. For further information on how the level of service standards should be applied, see Appendix I.

Level of Service Standard	Specific Detriment Analysis Spreadsheet Utilized	Summary	Rainfall and River Level Conditions Applied To Hydraulic Model
Combined Sewer Overflows	Spill Detriment Analysis	<ul style="list-style-type: none"> • The frequency of combined sewer overflow events at each overflow location must not increase. • The volume of combined sewer overflows at each overflow location during any specific event must not increase. • The duration of combined sewer overflows at each overflow location during any specific event must not increase. 	1992 Representative Year Rainfall 1992 Representative Year River Levels
Sanitary Sewer Overflows	Spill Detriment Analysis	<ul style="list-style-type: none"> • The frequency of sanitary sewer overflow events at each overflow location must not increase. • The volume of sanitary sewer overflows at each overflow location during any specific event must not increase. • The duration of sanitary sewer overflows at each overflow location during any specific event must not increase. 	10 Year MacLaren Design Storm 1 Year NSWL
Combined Sewer Overland Flooding Level of Service	Flooding Detriment Analysis	<ul style="list-style-type: none"> • The number of CS nodes in which overland surface flooding is experienced under wet weather flow conditions must not increase. 	5 Year MacLaren Design Storm 5 Year NSWL
Separate Sewer Overland Flooding Level of Service	Flooding Detriment Analysis	<ul style="list-style-type: none"> • The number of WWS nodes in which overland surface flooding is experienced under wet weather flow conditions must not increase. 	10 Year MacLaren Design Storm 5 Year NSWL
Combined Sewer Basement Flooding Level of Service	Surcharge Detriment Analysis	<ul style="list-style-type: none"> • There must be no increase in the number of CS nodes in which surcharge levels exceed 2.4m below grade. • Increases in surcharging levels of CS nodes can be acceptable, as long as the surcharge levels do not exceed 2.4m below grade. <ul style="list-style-type: none"> • For CS nodes in the <i>Baseline Model Network</i> or <i>Current Model Network</i> with surcharge levels exceeding 2.4m below grade, no further increase in the specific surcharge level is allowed. 	5 Year MacLaren Design Storm 5 Year NSWL
Separate Sewer Basement Flooding Level of Service	Surcharge Detriment Analysis	<ul style="list-style-type: none"> • There must be no increase in the number of WWS nodes in which surcharge levels exceed 2.4m^A below grade. • Increases in surcharging levels of 	10 Year MacLaren Design Storm 5 Year NSWL

Level of Service Standard	Specific Detriment Analysis Spreadsheet Utilized	Summary	Rainfall and River Level Conditions Applied To Hydraulic Model
		<p>WWS nodes can be acceptable, as long as the surcharge levels do not exceed 2.4m^A below grade.</p> <ul style="list-style-type: none"> • For WWS nodes in the <i>Baseline Model Network</i> or <i>Current Model Network</i> with surcharge levels exceeding 2.4m^A below grade, no further increase in the specific surcharge level is allowed. 	

^AAt the discretion of the City of Winnipeg, this surcharging limit may be further restricted to 3.0m below grade for separate sewer district detriment analysis.

- (ii) The design horizon the solutions in question must be modelled to ensure it provides the hydraulic capacity necessary. **This design horizon will be 35 years.** See E4.7.
- (j) The following additional criteria have been defined and agreed internally at a high level. The Consultant will evaluate these criteria and provide additional feedback as required as part of documenting these criteria within this TM:
 - (i) All new or reconstructed physical assets to result from a solution must be fit for purpose and have the ability to deliver the design performance required consistently.
 - (ii) The structural design aspects of a solution must be designed for a minimum design life of 75 years.
 - (iii) The mechanical design aspects of a solution must consider the following criteria:
 - ◆ All mechanical components should be designed to meet the current ANSI and Hydraulic Institute design standards.
 - ◆ Pumps shall be capable of running in reverse mode for de-clogging and de-ragging purposes, where pumping is required.
 - ◆ Include the installation of a minimum of one (1) flow meter (one for each individual pumping unit may be considered if there is appropriate space in the station process piping to do so) and associated instrumentation for each pump installation.
 - ◆ Installation of a by-pass pumping “tee” connection on each of the existing force mains, complete with manhole (MH) assembly on each force main, where required.
 - (iv) The electrical design aspects of a solution (including but not limited to motors, transformers, electrical distribution equipment, and stand-by generators) must be designed such that they provide safe, reliable service under all working conditions.
 - ◆ All transformers required as part of a solution must be sized appropriately to support maximum loading on all facilities powered by transformers. The design sizing calculations and final transformer size recommendation must be provided to Manitoba Hydro as part of all new service requests.
 - (v) All hydraulic design elements as part of a solution must ensure components are appropriately sized considering the following:
 - ◆ Minimum scouring velocities. Ensure minimal scouring velocities of 0.6m/s are achieved during PWWF in all new sewers constructed as part

of a solution. PWWF to be determined via the wastewater sewage generation methods defined by the City of Winnipeg Wastewater flow estimation and servicing guidelines (see D6.4.1(g)). Preference is to provide solutions in which minimum scouring velocities of 0.6m/s are also achieved in pipes under PDWF conditions, however this may not be cost effective or feasible based on the magnitude of the WWF response.

- ◆ Upstream/downstream conditions. Pumping systems, where required, should be designed to pump flows within the pipe full capacity of the upstream and downstream gravity system.
 - ◆ DWF Pumping Arrangements. The DWF pumping arrangement proposed should be sized to accept the Design DWF for the catchment in question. The duty standby arrangement will be such that each pump or pumps are sized with the same flow capacity as to the dry weather flow arrangement.
 - ◆ Wet Weather Flow Response. If a significant wet weather response is identified within the catchment evaluation, the feasibility of options to address the wet weather response at source should be investigated as opposed to sizing pumps to pass the wet weather response further downstream.
 - ◆ Hydraulic Structures. Other ancillary hydraulic structures, such as weirs or overflow/relief piping, where required as part of the solution, should be sized to match the upstream/downstream gravity conveyance system, or downstream pumping arrangements.
- (vi) Should inverted siphon structures be required as part of a solution, the Consultant must ensure components are appropriately designed considering the following:
- ◆ Inverted siphons should have at least two barrels, with a minimum pipe size of 150 mm.
 - ◆ For each barrel, if the upstream system utilizes gravity conveyance:
 - ◆ Ensure the design velocity remains above 0.6m/s under ADWF conditions.
 - ◆ Evaluate the maximum velocity in each barrel under a 10 year MacLaren event.
 - ◆ Each barrel should be sized to convey the design DWF.
 - ◆ For each barrel, if the upstream system utilizes low pressure force main conveyance:
 - ◆ Ensure the velocity remains above 0.6 m/s under conditions in which lowest flow capacity pump is in operation.
 - ◆ Evaluate the maximum velocity in each barrel under conditions where the maximum allowed pumping is provided.
 - ◆ The pumping provided should be sized such the maximum pumping capacity is sized to convey the design DWF.
 - ◆ Siphon inlet and outlet details should be so arranged such that the design ADWF may be entirely diverted to one barrel, so that any barrel may be placed out of service under DWF conditions.
 - ◆ Provide the necessary appurtenances for maintenance, convenient flushing and cleaning equipment.
 - ◆ Inlet and discharge structures should have adequate clearances for cleaning equipment, inspection and flushing.
 - ◆ The inverted siphon design should provide sufficient head and appropriate pipe sizes to ensure optimized velocities of 1.6m/s under the design DWF conditions.
 - ◆ The vertical alignment should permit cleaning and maintenance.

- ◆ Unless the siphon is to be entirely placed within rock/glacial till, design flotation calculations should be undertaken to ensure sufficient weight or anchorage is present to prevent siphon barrel flotation when empty.
- ◆ Pressure sewer main sizing calculations are required in addition to sizing using the hydraulic model. Commentary on any differences should be provided along with a recommendation of the appropriate size to use.
- ◆ Permanent upstream and downstream flow monitoring instrumentation is required to ensure compliance with Provincial regulations and industry best practice.
- ◆ Confirm the hydraulic grade line (HGL) within the siphon is not higher than that of either the groundwater head (piezometric head) or river level. This is to ensure that if there is a loss of hydrostatic integrity in any of the siphon barrels there would be groundwater and/or river water infiltration into the siphon as opposed to waste water exfiltration from siphon barrel.

E6. CONCEPTUAL DESIGN: ALTERNATIVES IDENTIFICATION TM

E6.1 The work within this phase may not begin until the work identified in E5 is complete.

E6.2 This phase shall include all activities required to select and identify the alternative solutions to address the City of Winnipeg's needs. The procedures used to identify alternative solutions shall be reviewed by the City as part of this phase.

E6.3 Deliverables

E6.3.1 Conceptual Design Report Table Of Contents:

- (a) This deliverable shall be submitted during the initial work within item E6.
- (b) A high level listing of the headings and sections anticipated to be included as part of the Conceptual Design Report.
- (c) This shall be completed shortly after beginning the Conceptual Design Report development.
- (d) The City of Winnipeg working group will review the high level Table Of Contents and attempt to identify any areas of concern or clarification regarding the Consultants anticipated work during the Conceptual Design Phases.

E6.3.2 Alternatives Identification Technical Memorandum

- (a) A Technical Memorandum shall be submitted reflecting the work from the Alternatives Identification phase.
- (b) A draft of the Alternatives Identification Technical Memorandum shall be submitted at minimum fifteen (15) days prior to the Alternatives Identification Meeting, see D6.3.4.
- (c) This TM will include the following at minimum:
 - (i) Summary of the criteria used by the Consultant to determine separate alternatives.
 - (ii) Summary of the criteria and/or specific alternatives which were suggested to be excluded, and reasoning for exclusion.
 - (iii) Summary of the alternatives selected for further review as part of the Conceptual Design Report, to meet City goals.
 - (iv) Summary of how the Consultant believes each alternative could meet City goals.
- (d) Further updates to the TM shall be completed based on the City working group's feedback to the draft, and based on feedback during the Alternatives Identification Meeting.
- (e) The City shall verify that all comments made to the Alternatives Identification TM at this phase are addressed appropriately by the Consultant.

E7. CONCEPTUAL DESIGN: ALTERNATIVES ANALYSIS

E7.1 The work within this phase may not begin until the work identified in E6 and E4 is complete.

E7.2 This phase shall include all activities required to analyze and conduct the solution comparisons. The procedures used to complete the solution comparisons, and resulting recommended solutions shall be reviewed by the City as part of this phase.

- (a) A solution to proceed with preliminary design is to be recommended as part of this phase, and will be further refined during the remaining work in the Conceptual Design Phase.

E7.3 Hydraulic Modeling During Conceptual Design

- (a) This modelling will be limited to a high level representation, the Detriment Analysis, and any other representations in the model the Consultants feels are beneficial to validate the solution recommended at the Conceptual Design Phase.

E7.4 Deliverables

E7.4.1 60% Complete Conceptual Design Report

- (a) A 60% complete copy of the Conceptual Design Report shall be submitted at minimum fifteen (15) days prior to the Alternatives Analysis Meeting, see D6.3.4.
- (b) The updated Conceptual Design Report will include the following at minimum:
- (i) The Conceptual Design Report shall as much as possible utilize the District Engineering Plans (DEPs) produced for combined sewer districts for the CSO Master Plan, as a template for the content to include in the Conceptual Study, in addition to the specific requirements listed below.
 - ◆ Examples of these District Engineering Plans for each of the combined sewer districts in the City of Winnipeg can be found in the link below:
 - ◆ <https://winnipeg.ca/waterandwaste/pdfs/sewage/2019CSOMasterPlan.pdf>
 - ◆ Refer to page 342 of the document linked above.
 - (ii) Include the following as Appendices:
 - ◆ Hydraulic Model Update Technical Memorandum
 - ◆ City Goals/Benefits And Background Review Technical Memorandum
 - ◆ Alternatives Identification Technical Memorandum

A summary of the work involved in these associated prior phases must then be included in the body of the Conceptual Design Report.
 - (iii) Summary of the methodologies utilized to determine costs for each alternative.
 - (iv) Summary of the methodologies utilized to determine the benefits for each alternative.
 - (v) Present any additional alternatives selected for analysis based on findings during the cost/benefit findings, if applicable.
 - (vi) Include the following parameters in the conceptual design of the alternatives, as applicable:
 - ◆ Conceptual sizing of regional sewer infrastructure, where required
 - ◆ Conceptual alignments of new regional sewer infrastructure, where required.
 - ◆ Identification and configuration of feasible connection locations
 - ◆ Construction methods to be used for river crossing and new interceptors sewers, where required.
 - ◆ Pump sizing and upgrade requirements, where required.
 - ◆ The design must consider the optimal cost/benefit solution, from a life cycle cost perspective.

- (vii) Present current recommendations based on cost/benefit rankings, or based on other criteria at Consultant's discretion.
- (viii) Incorporate and document any modifications made to the methodologies utilized for alternatives evaluation and ranking determined during the Alternatives Analysis Meeting.
- (c) Should any of the minimum requirements of the 60% Draft Conceptual Design Report as per E7.4.1(b) not be completed sufficiently at submission, the 60% Draft will be submitted back to the Consultant. The 60% Draft Review Meeting will be delayed until such time that a 60% Draft including all of the minimum requirements has been provided.
- (d) Further updates to the Conceptual Design Report shall be completed based on the City working group's feedback to the draft, and based on feedback during the Alternatives Analysis Meeting.
- (e) The City shall verify that all comments made to the 60% Complete Conceptual Design Report at this phase are addressed appropriately by the Consultant.
 - (i) The release of up to 60% of the Fixed Price Fee assigned to item "Conceptual Design: Conceptual Report" will occur once the City has verified all comments to the 60% Complete Conceptual Report draft are complete.

E8. CONCEPTUAL DESIGN: FINAL REPORT SUBMISSION

- E8.1 The work within this phase may not begin until the work identified in E7 is complete.
- E8.2 This phase shall include all activities required to finalize the Conceptual Design Report following the completion of the work in the Alternatives Identification and the Alternatives Evaluation phases of the Conceptual Design.

E8.3 Deliverables

E8.3.1 Updated Conceptual Design Report

- (a) A 95% complete copy of the Conceptual Design Report will be submitted following the incorporation of any City stakeholder's feedback into the Conceptual Design process.
- (b) The 95% complete Conceptual Design Report will include the following at minimum:
 - (i) Documentation of all work completed during the Alternatives Identification and Alternatives Evaluation phases, as per E5 and E7.
 - (ii) Hydraulic modeling findings for solution recommended. See E7.3.
 - (iii) Identification of gaps/assumptions in Conceptual Design process that in the Consultant's opinion must be addressed as part of the Preliminary Design Phase.
 - (iv) Identify any land acquisition or easements required for the alternative solutions and solution recommended.
 - (v) Identify and compile a list of effected stakeholders for the alternative solutions and solution recommended.
 - (vi) A capital cost estimate for the remaining preliminary/detailed design work, and associated construction/contract administration for the solution in question recommended to proceed with preliminary design. This capital cost estimate is to be prepared to an AACE Class 5 -50% to +100% level of accuracy.
 - (vii) Basis of estimate used to produce AACE Class 5 Capital Cost estimate. The basis of estimate shall outline the estimate assumptions, development of material take-offs, source of cost data, allowances, mark-ups/add-ons, exclusion, exceptions, contingencies, and cost risks and opportunities.
 - ◆ The basis of estimate process shall utilize the latest Basis Of Estimate Investment Planning spreadsheet template to document results. The completed Basis of Estimate spreadsheet shall be included as an appendix to the Conceptual Design Report.

- (viii) Review existing geotechnical information and identify geotechnical work that will need to be completed for the Preliminary Design Phase, as required. An analysis of the current Geotechnical Allowance assigned to the Preliminary Design Phase may also be completed, to provide justification if an increase in this allowance is required.
- (ix) Final recommended solution which meets the City's requirements, and detailed explanation for reasoning for the solution selection.
- (x) Summary of tasks required during the Preliminary Design Phase.
- (c) Should any of the minimum requirements of the 95% Draft Conceptual Design Report as per E8.3.1(b) not be completed sufficiently at submission, the 95% Draft will be submitted back to the Consultant. The 95% Draft Review Meeting will be delayed until such time that a 95% Draft including all of the minimum requirements has been provided.
- (d) Following the City's review of the 95% complete Conceptual Design Report, and the City's approval that the Consultant has addressed all of the City's comments, a final version of the Conceptual Design Report shall be submitted. See D6.2.3.

E9. PRELIMINARY DESIGN: HYDRAULIC MODEL UPDATES

E9.1 The work within this phase may not begin until a final version of the Conceptual Design Report has been submitted and approved. The work within this phase may begin concurrently with the work identified in E10.

E9.2 This phase shall include all activities required to carry out updates and utilization of the City of Winnipeg Hydraulic Model. Updates to the Hydraulic Model are expected during the initial phases of Preliminary Design.

E9.3 Hydraulic Modelling Standards

E9.3.1 All hydraulic modelling updates completed by the Consultant will be in accordance with the City of Winnipeg Hydraulic Modelling Guidelines, see Appendix I.

E9.4 Hydraulic Model Updates

E9.4.1 During the Preliminary Design Phase, updates to the City of Winnipeg Hydraulic Model will be completed, based on the gaps identified in the Hydraulic Model within the using the latest GIS asset data representing the latest development in the Waverley West neighborhoods. The City of Winnipeg will provide the latest version of the City Of Winnipeg InfoWorks hydraulic model, and the GIS Asset information required.

E9.4.2 Updates will be provided to the Hydraulic model to account for expected future development. Appropriate updates will also be provided for all major developments which have occurred outside of Waverley West in the Southwest Sewer Catchment, which are not currently accounted for in the Hydraulic model. The methodology used as part of these updates will be documented as part of the Hydraulic Model Update Report.

E9.5 Detriment Analysis Using The Hydraulic Model

E9.5.1 Each solution developed during the conceptual design phase and preliminary design phase shall be evaluated using the standardized Detriment Analysis process using the City of Winnipeg collections hydraulic model.

E9.5.2 The Detriment Analysis process will require the Consultant to run the City of Winnipeg Hydraulic model with the proposed solution(s) included.

- (a) The performance of this updated model compared to specific level of service standards will be evaluated, specifically to verify there to be no reduction in level of service within the Hydraulic model as a result of the solution(s) proposed.
- (b) Detriment Analysis will be completed for the following level of service standards, as applicable:

- (i) Surface Flooding
- (ii) Surcharge (Basement Flooding)
- (iii) Spill/Overflows

(c) The Detriment Analysis process will also require that a variation of the solution model be produced over the design horizon for the solution recommended.

- (i) A minimum design horizon of 35 years is required.
- (ii) The design horizon selected will be recommended by the Consultant as part of the detriment analysis process for the recommended solution.
- (iii) This future solution model will have proposed increases in population and impervious areas artificially applied up to the design year for the solution.
- (iv) The intent is to provide evidence that the solution will also meet requirements without causing detriments over the entire design life for the solution.

E9.5.3 Further details on the Detriment Analysis process, see Appendix I.

E9.6 Hydraulic Modeling During Preliminary Design

- (a) It is expected that a more refined representation of the solution recommended for Preliminary Design will occur as preliminary design progresses.
- (b) Iterative modifications to the hydraulic model representation are expected during this phase.
 - (i) The modeling results for each of these iterations do not need to be presented as part of the Preliminary Design Deliverables. Only the modeling results from the final iterations to proceed with Detailed Design should be documented in the Preliminary Design Report.

E9.7 Deliverables

E9.7.1 Updated Hydraulic Model

- (ii) An updated version of the City of Winnipeg Hydraulic model based on the agreed update work items identified in the Hydraulic Model Update TM.
- (iii) Updates of the model for review will be requested by the City at appropriate intervals within the Preliminary Design Phase.

E9.7.2 Hydraulic Model Update Rationale - Supporting Information

- (i) Appropriate documentation will be provided with the updated Hydraulic Model summarizing the major changes made to the Hydraulic model.
- (ii) This documentation will include
 - (i) The rationale for the changes to be made to the model
 - (ii) Graphs, tables, or other appropriate reference material summarizing the methodology used to make select changes.
 - (iii) The outcome of the model update changes.

E10. PRELIMINARY DESIGN: INITIATION AND 60% DRAFT

E10.1 The work within this phase may not begin until a final version of the Conceptual Design Report has been submitted and approved. The work within this phase may begin concurrently with the work identified in E9.

E10.2 This phase shall include all activities required:

- (a) To initiate the Preliminary Design Phase, and
- (b) to prepare the 60% complete Preliminary Design Report, based on a hydraulically feasible and buildable solution .

E10.3 Recommended Solution Evaluation

- (a) The proposed solution from the Conceptual Design phase should be confirmed as hydraulically feasible and buildable or an alternative hydraulically feasible and buildable solution should be developed. The rationale for significant deviation from the proposed Conceptual Design solution with significant being the type of solution or change in location should be raised with the City for approval.

E10.4 Deliverables

E10.4.1 External Stakeholders Engagement Plan

- (a) Submit a plan identifying
 - (i) external stakeholders pertinent to the Project,
 - (ii) any remaining gaps/study work required during preliminary design required to identify all external stakeholders pertinent to the Project;
 - (iii) the recommended timing during the project development that these stakeholders should be contacted, and
 - (iv) the means by which communication will take place
- (b) See D6.9 for further information.

E10.4.2 Preliminary Design Report Table Of Contents:

- (a) A high level listing of the headings and sections anticipated to be included as part of the Preliminary Design Report.
- (b) This shall be completed shortly after beginning the Preliminary Design Report development.
- (c) The City of Winnipeg working group will review the high level Table Of Contents and attempt to identify any areas of concern or clarification regarding the Consultants anticipated work during the Preliminary Design Phases.

E10.4.3 Preliminary Design Report 60% Draft

- (a) Submit at 60% completion, at minimum fifteen (15) Business Days prior to the formal review meetings.
- (b) The Consultant may propose alternative deliverable completion intervals for submission of Preliminary Design Report, subject to approval by the City.
- (c) The 60% Draft Preliminary Design Report will include the following minimum requirements:
 - (i) Certify that recommendations and conclusions contained in the Conceptual Design Report remain acceptable.
 - (ii) Additional survey or other data collection requirements and the proposed approach to deal with missing data, confirm assumptions and to determine site conditions, as applicable.
 - (iii) Certify the InfoWorks hydraulic model is fit for use;
 - (iv) Certify a robust hydraulically feasible design has been developed.
 - (v) Detailed explanation of steps conducted in order to bring the solution to a preliminary design level of definition.
 - (vi) The design criteria in which the solution was evaluated during Preliminary Design.
 - (vii) Hydraulic modeling findings for solution recommended.
 - (viii) Summary of findings from evaluations completed in relation to preliminary design, which may include the following:
 - ◆ Geotechnical Investigations
 - ◆ Topographic Surveys
 - ◆ Land Use Considerations
 - (ix) Summary of communications completed with external stakeholders to date in regards to the solution development during Preliminary Design, and to align

with the Stakeholder Engagement Plan (see E10.4.1). Summarize all future considerations and/or modifications made to the solution to address external stakeholders concerns.

- (d) Should any of the minimum requirements of the 60% Draft Preliminary Design Report as per E10.4.3(c) not be completed sufficiently at submission, the 60% Draft will be submitted back to the Consultant. The 60% Draft Review Meeting will be delayed until such time that a 60% Draft including all of the minimum requirements has been provided.

E11. PRELIMINARY DESIGN: RISK & OPPORTUNITIES IDENTIFICATION

E11.1 The work within this phase may not begin until the work identified in E9 and E10 is complete.

E11.2 This phase shall include:

- (a) All activities required to prepare the Risk And Opportunities Framework/Register, and
- (b) Completion of the Risk & Opportunities Identification Meeting with the City Working Group.

E11.3 Deliverables

E11.3.1 Risk and Opportunities Meeting Agenda

- (a) This will document the Consultants approach to discuss/brainstorm all risks and opportunities for the solution proceeding with Preliminary Design.
- (b) Submit at minimum ten (10) Business Days prior to this meeting.

E11.3.2 Risk And Opportunities Framework/Register

- (a) This framework/register will allow for appropriate logging of risks and opportunities identified during the Risk and Opportunities Identification Meeting.
- (b) Consultant to make first attempt to compile the risks and opportunities identified to date.
- (c) Submit at minimum ten (10) Business Days prior to this meeting.

E11.3.3 Risk And Opportunities Technical Memorandum

- (a) This TM will include the following:
 - (i) Summary of processes utilized to identify risks and opportunities with a solution selected for preliminary design.
 - (ii) Summary of major risks and opportunities associated with solution selected for preliminary design.
 - (iii) This TM shall be incorporated into the Preliminary Design Report 95% complete submission as an Appendix.

E12. PRELIMINARY DESIGN: PRESENTATION AND FINAL REPORT

E12.1 The work within this phase may not begin until the work identified in E11 is complete.

E12.2 This phase shall include all activities required to finalize the Preliminary Design Report, and the development of an accompanying presentation.

E12.3 Deliverables

E12.3.1 Project Presentation Slides

- (a) Presentation slides summarizing the work completed as part of the Preliminary Design Report will be submitted prior to the 95% complete Preliminary Design Report.
- (b) The slides shall be submitted and reviewed by the City Working Group at minimum fifteen (15) Business Days prior to the scheduled Preliminary Design Summary

Presentation. The City shall verify that all comments made to the presentation slides are addressed appropriately by the Consultant.

- (c) The presentation slides will at minimum discuss:
 - (i) Sequence of tasks completed by the Consultant for conceptual and preliminary design.
 - (ii) Summarize the methodologies utilized.
 - (iii) Provide the AACE Class 3 Cost Estimates for solution developed.
 - (iv) Recommendation of solution to proceed with detailed design and construction.
 - (v) Summary of tasks expected to be required during design/construction phases.

E12.3.2 Preliminary Design Summary Presentation

- (a) This presentation is to be attended by the Consultant's Project Manager and any relevant Key Personnel required for specific discussion topics.
- (b) The City working group, along with the City stakeholders will be in attendance for this presentation.
- (c) This will be completed in person at the City's offices.
- (d) The purpose of this presentation is to inform all City stakeholders of the work completed by the Consultant with the support of the City working group members.
- (e) Any pertinent feedback gathered from this presentation shall be incorporated into the 95% Draft Preliminary Design Report prior to submission to the City working group for review and comment.

E12.3.3 Preliminary Design Report 95% Draft

- (a) The 95% complete Preliminary Design Report will include the following at minimum:
 - (i) Updates to all content developed in the 60% complete Preliminary Design Report Draft. See E10.4.1.
 - (ii) Any pertinent feedback gathered from the Preliminary Design Report Presentation.
 - (iii) Summary of future communication requirements on the project as part of Detailed Design, including Notification Of Alteration (NOA) requirements for existing Provincial Environmental Act Licences, public engagement, engagement with private entities, as applicable based on the solution selected.
 - (iv) A capital cost estimate for the remaining detailed design work, and associated construction/contract administration for the solution in question. This capital cost estimate is to be prepared to an AACE Class 3 -20% to +30% level of accuracy.
 - (v) Verify costs of the solution and that the solution is optimized for cost-effectiveness.
 - (vi) Basis of estimate used to produce AACE Class 3 Capital Cost estimate for remaining detailed design and construction/contract administration works. The basis of estimate shall outline the estimate assumptions, development of material take-offs, source of cost data, allowances, mark-ups/add-ons, exclusion, exceptions, contingencies, and cost risks and opportunities.
 - ◆ The basis of estimate process shall utilize the latest Basis Of Estimate Investment Planning spreadsheet template to document results. The completed Basis of Estimate spreadsheet shall be included as an appendix to the Preliminary Design Report.
 - (vii) Preliminary design drawings for the solution in question.
 - ◆ These drawings shall include the following at minimum: design inverts, pump sizes, and pipe sizes as applicable.
 - ◆ Include these design drawings as an Appendix to the report.
 - (viii) Cost estimate of additional annual operations and maintenance (O&M) associated with the solution selected.

(ix) Include the Risk And Opportunities Technical Memorandum as an Appendix to the report. A summary of the work involved in during the Risk And Identification Phase must then be included in the body of the Preliminary Design Report.

(b) Should any of the minimum requirements of the 95% Draft Preliminary Design Report as per E12.3.3(a) not be completed sufficiently at submission, the 60% Draft will be submitted back to the Consultant. The 95% Draft Review Meeting will be delayed until such time that a 95% Draft including all of the minimum requirements has been provided.

E12.3.4 Following the City's review of the 95% complete Preliminary Design Report, the Consultant will address any remaining City comments.

(a) Following the City's approval that the Consultant has addressed all of the City's comments, a Final 100% complete version of the Preliminary Design Report shall be submitted. See D6.2.3.

E13. GEOTECHNICAL WORK ALLOWANCE

E13.1 The Geotechnical Allowance is to be used during the Preliminary Design Phase of the Work for specific geotechnical engineering studies to validate the constructability of solutions, as required.

E13.2 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) preparation of a Geodetic Base Line Report (GBR);
- (i) preparation of a Geodetic Data Report (GDR);
- (j) preparation of a Geotechnical Engineering Study;
- (k) riverbank stability analysis, including riverbank stability analysis report;
- (l) conducting Topographic Land Surveys, including preparation of a Topographic Land Survey Report;
- (m) conducting Geophysical Surveys, including preparation of a Geophysical Survey Report; and
- (n) any other activities necessary to characterize the geotechnical condition of the subsurface soils/bedrock and groundwater levels.

E13.3 When conditions arise that require the completion of the Geotechnical work listed in E13.2, the Consultant will prepare a concise scope of work and cost proposal, following requirements as defined in D6.6, in collaboration with the Project Manager. The proposal shall be submitted to the Project Manager for final approval.

E13.4 No work shall start prior to the approval stated in E13.3.

E14. ADDITIONAL WORK ALLOWANCE

E14.1 The Additional Work Allowance is to be used during the Conceptual And Preliminary Design Phases of the Work to be used for additional engineering, testing, public engagement, and design services that arise due to unforeseen conditions.

E14.2 When such unforeseen conditions arise, the Consultant will prepare a concise scope of work and cost proposal, following requirements as defined in D6.7, in collaboration with the Project Manager. The proposal shall be submitted to the Project Manager for final approval.

E14.3 No work shall start prior to the approval stated in E14.2.

E15. AVAILABLE FUNDS

E15.1 The funds available for this Contract are \$1,200,000.00.

E15.2 The total available funds stated in E15.1 include an Additional Work Allowance of \$50,000 and a Geotechnical Work Allowance of \$250,000.

E15.3 Of the total funds available for this Contract, a recommended maximum of \$300,000 should be allocated to cumulative costs of work items E4, E5, E6, E7 and E8.