

December 12, 2023
File: 165630238

Attention: Adam Weishar, C.E.T. – Director of Infrastructure and Development
Municipality of Kincardine
1475 Concession 5, Kincardine, ON
N2Z 2X6

**Reference: Municipality of Kincardine Water Supply Upgrades
Work Plan and Budget for Phase 2 Design**

Introduction

Stantec is pleased to present this work plan and budget for the Municipality's consideration with respect to undertaking the detailed design phase for the proposed Kincardine Water Supply Upgrades to service the Bruce Power site per the recommendations of the Schedule C Class Environmental Assessment (Class EA) which is currently out for the 30-day review period.

The proposed work plan as noted is intended to address the requirements of the next phase of works as generally described within the agreement between the Municipality and Bruce Power and referred to as the "Phase 2 Scope of Work".

Project Understanding & General Approach

The intent of this project is to undertake preliminary and detailed design including tender development of the proposed upgrades to the Kincardine Water Supply System as identified through the recent Schedule C Class EA and Conceptual Design Report. In general, the proposed works include the following main components:

- Kincardine Water Treatment Plant Expansion
 - Upgrades to low-lift pumping capacity;
 - Addition of Filter 5 to the treatment process;
 - Modifications to the ActiFlo system;
 - Addition of UV Disinfection;
 - Upgrades to the high-lift pumping capacity;
 - New Standby Generator to be located outside the building to allow for new electrical room.
- New Booster Pumping Station
 - In-line booster pumping facility;
 - Slab-on grade with pre-engineered concrete structure aesthetic finish to be approved by the Municipality;
 - Facility to include provision for future chlorine injection (area/room dedicated for storage and chemical pumps);
 - Outdoor standby generator;

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- Site grading and other works including connections to the existing 300mm watermain along Bruce Road 23.
- Watermain Extension and Termination
 - Approximate 1.2km watermain extension commencing near Alma Street and Albert Road to the termination at the Bruce Power site boundary near Tie Road and Concession Road 2;
 - Termination chamber consisting of flow meter, residual analyzer, backflow preventor and other control and manual valving;
 - Above-grade control and communication panel.

Based on the November 1, 2023 team meeting, Bruce Power is requesting a connection to the Kincardine Drinking Water System (DWS) as soon as possible and on the basis that their internal works will be completed to receive the new supply. In order to accommodate timelines associated with construction of the works, the targeted duration for design is approximately 9 months. Assuming a notice to proceed in December 2023, this would represent tender ready packages by September 2024. As noted, this assumes that the internal works within the Bruce Power site also proceed in a timely manner. We understand the urgency but also the importance of ensuring sufficient technical overview is provided to properly design the upgrades and to provide the Municipality with a long-term asset that meets their operational needs while providing a secure source of potable water to existing and future users, including the Bruce Power site.

Our general approach to the completion of the Phase 2 works will involve undertaking the following high-level tasks:

1. Project coordination with the Municipality's project team;
2. Completion of additional studies and investigations to support the detailed design and permit/approval requirements;
3. Agency/stakeholder consultation to address permit/approval needs and land acquisition related to the new BPS site;
4. Coordination with Bruce Power to confirm how both water systems will interact and communicate as part of the development of the control strategy for the new BPS and to mitigate excessive impacts on the Kincardine DWS;
5. Regular check-in points on project status including updated schedule of work versus baseline;
6. Updated water modeling to support selection of pump upgrades at the WTP and new pumps for the BPS;
7. Development of design submissions at 40%, 60%, 90% and tender-ready (100%) followed by review team meetings to discuss comments received and actionable items;
8. Development of staging/sequencing plans and review with Operations staff to ensure buy-in and other requirements;
9. Tender advertisement, bid meeting, assistance during tendering process, review of tender bid submissions, and recommendation of successful bidder(s).

Work Plan

We have developed our work plan and schedule to reflect what we believe are the core elements to the successful delivery of this project on-time and on-budget. In order to facilitate effective management and budgeting for the project, we have separated the work into several tasks, which are summarized in the sections that follow. Refer to **Appendix A** for our Time-Task Matrix which further defines the key tasks and level of effort.

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Project Management

With any project of this complexity, there will be inputs and interconnections between the work areas and the work streams, coordination of which will be the responsibility of the Project Manager. Specific project management related requirements for this project are as follows:

1. Attendance at Project Start-Up Meeting and completion of meeting notes;
2. Review and confirmation of schedule, work plan and budget with the Municipality's team;
3. Attendance at monthly project progress meetings and completion of meeting notes;
4. Bi-weekly check-ins (phone calls) between the Municipality's team, Bruce Power, and Stantec to ensure that key items are progressing in a timely manner between the project team to mitigate schedule impacts;
5. Development of draft risk register;
6. Provision of monthly project updates to be included with monthly invoicing;
7. Control of scope, budget and schedule.

The Project Manager will also be responsible for ensuring the technical deliverables undergo appropriate QA/QC review prior to submission to the Municipality. Our TTM in Appendix A includes individual QA/QC leads for each major discipline.

Pre-Design and Investigative Services

In general, the goal of this stage of work will be to build upon the Conceptual Design Report (CDR) for the proposed WTP upgrades and to define the key elements associated with the new BPS and watermain extension including termination chamber. Our work plan for this task includes the following:

1. Additional updates to the conceptual design drawings for the WTP upgrades to include modifications following the discipline site review.
2. Review of potential Bruce Power site demands based on current consumption and proposed future needs to assist in selection of pumps for the new BPS.
3. Additional hydraulic modeling to identify and update pump selection for the WTP and BPS.
4. Preparation of terms of reference (TOR) for topographic survey and geotechnical investigation (WTP for the genset location, new BPS site, and watermain extension), and potential additional studies based on the BPS site selection (Stage 1 and/or 2 archaeological, natural heritage, etc.).
5. Development of pre-design drawings for the new BPS (process flow diagram, general site layout) and watermain extension (general alignment, chamber PFD).
6. Updated capital cost estimate.
7. Pre-design review meeting with project team.
8. Pre-design report for the new BPS and watermain (CDR to be updated separately to a PDR for the WTP only).

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Key additional elements to be established as part of the WTP pre-design phase includes additional works that were identified as optional items in the CDR (replacement of pneumatic valves, gas scrubber, etc.).

Preliminary and Detailed Design

Based on input received on the pre-design for each major component, we will proceed to the 40% preliminary design phase of work which will further refine the major design elements and capital cost estimate. The detailed design phase will include design submissions at 60% and 90%, each including a review meeting with the Municipality's team to ensure that comments are properly addressed, and risks are identified and mitigated to the extent possible as the project proceeds. Subsequently, tender documents and drawings will be prepared for the WTP, BPS and watermain works. Our detailed work plan for this task includes the following:

1. Undertake consultation with the local electrical utility service provider to confirm potential service connections for proposed new works (BPS and termination chamber) and other utility providers;
2. Preparation of Equipment Log (40%) including updates at 60% and 90% phase;
3. Updated construction cost estimates (40%, 60%, 90% and tender);
4. Update to Preliminary Design Reports and final Design Reports;
5. Preliminary (40%) and detailed design (60%, 90%, 100%) drawing packages;
6. Updated project Risk Register;
7. Preparation and submission of permit and application packages (i.e., DWWP and MDWL amendment). It is assumed that the cost of the permits and approvals will be paid for by the Municipality;
8. Design review meetings following key submissions;
9. Recommendations for equipment pre-selection and pre-purchase for long-lead equipment;
10. Preparation of the Process Narrative (40%);
11. Preparation of traffic management plans;
12. Preparation of the draft and final Process Control Narrative (60% draft, 90% draft and final, assuming update to available PCN);
13. Draft and final specifications (90% draft, 100% final);
14. Preliminary/draft commissioning plans for addition to specifications to guide the contractor(s);
15. Preliminary and final staging/sequencing plans for review and input with Operations staff. Plans to consider how to minimize plant disruption at the WTP including potential impacts/requirements for staff;
16. Prepare tender documents and drawings for uploading on Bids and Tenders, attend test pits and pre-construction site visit, provide assistance to address tender questions and addendums, attend the tender opening, and provide review and recommendation of tenders submitted;
17. Preparation of draft tender advertisements (assume three separate tenders);
18. Submit tender documents for issuance;
19. Attend bid meetings;
20. Assist the Municipality in addressing questions during the bid processes, including preparation of addenda;

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21. Review of bids received;
22. Preparation of recommendation letters.

We have excluded any additional efforts associated with Phase 3 Construction, understanding that the actual level of effort may be impacted by final completion timelines, and the extent to which the three proposed construction tenders may overlap which could reduce overall construction administration efforts.

Schedule

Based on our understanding of the key project elements and extent of work completed to date, in addition to our teams experience with similar works, we would propose the following as a general schedule for key activities.

Phase	Anticipated Completion Date
Project Initiation	Week of Dec 18, 2023
PRE-DESIGN AND INVESTIGATIVE SERVICES	
Investigative Services	May 31, 2024
Pre-Design	March 1, 2024
40% PRELIMINARY DESIGN	
WTP Drawings	March 29, 2024
BPS Drawings	April 5, 2024
Watermain/Chamber Drawings	March 29, 2024
Construction Cost Estimate Update	April 19, 2024
Draft PDR	April 5, 2024
60% DETAILED DESIGN	
WTP Drawings	May 31, 2024
BPS Drawings	May 24, 2024
Watermain/Chamber Drawings	May 24, 2024
Construction Cost Estimate Update	June 7, 2024
Draft PCN	Aug 9, 2024
Updated Design Report	May 31, 2024
Commissioning Plan (Draft)	June 14, 2024
90% DETAILED DESIGN	
WTP Drawings	Aug 2, 2024
BPS Drawings	July 12, 2024
Watermain/Chamber Drawings	July 5, 2024
Construction Cost Estimate Update	Aug 16, 2024
Final Design Report	July 12, 2024
Final PCN	May 31, 2024
Approval Packages (DWWP, OBC, CA)	Aug 2, 2024
Final Specifications	Aug 16, 2024
100% PACKAGE/TENDERING	
3 Tenders (WTP, BPS, WM/Chamber)	Sept 30, 2024
Pre-Tender Meeting	Oct 16, 2024
Tender Recommendations	Nov 13, 2024

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We do recognize that the above schedule is aggressive and is subject to an extent on timelines associated with property identification and access permission for the new BPS and confirmation on the communication strategy and interconnection between the Bruce Power site and Kincardine DWS. In addition, the tendering timelines will be subject to confirmation that the construction cost estimate is approved by all parties and any applicable agreements are in place.

In relation to the tendering timelines, it is assumed that three (3) tenders will be issued, with the last tender issued late September 2024. In general, it is expected that the watermain/chamber works will be ready to be tendered first, followed by the BPS, then WTP upgrades, based on the general complexity of each project.

Fees

The estimated costs for the activities as noted in this workplan is \$1,252,616.72 excluding HST and allowances associated with field investigations and other works as summarized below. These additional allowances would only be accessible pending submission of an additional work plan for the Municipality's approval. Stantec would perform the works on a time and material to an upset fee (TMU) basis not to be exceeded without the Municipality's prior approval.

The following provides a general breakdown of key project tasks:

Item	Task	Fee
1	Project Management including Meetings	\$99,635.68
2	Investigative Services (Preparation of TOR and Coordination)	\$5,064.11
3	Pre-Design	\$121,657.75
4	40% Preliminary Design	\$217,289.64
5	60% Detailed Design	\$283,252.17
6	90% Detailed Design	\$407,036.72
7	100% Design and Tendering	\$118,680.65
	Subtotal (Base Scope)	\$1,252,616.72
8	Allowance	\$82,500.00
	Geotechnical/Hydrogeological Investigation	\$40,000
	Topographic Survey	\$17,500
	Natural Environment Studies (BPS)	\$15,000
	Stage 1 Archaeological (BPS)	\$10,000
	Total (excluding HST but including allowance)	\$1,335,116.72

In preparing this fee estimate, we have assumed the following:

- Any background information will be provided at no cost to Stantec, including access to LiDAR data, orthoimagery, etc.;
- Meetings will generally be virtual, with select in-person meetings to reduce overall costs as per the TTM;
- Costs exclude application fees to agencies. It is assumed that these costs will be paid for directly by the Municipality;
- We have assumed that the proposed BPS will be a pre-engineered concrete structure with aesthetic finish to be approved by the Municipality. Our design effort includes design of the slab/footing and potential false roof (above the concrete roof) for improved aesthetics.
- We have assumed that the above noted fees will be in addition to the approved Phase 1 fees to date. As this project would be on a TMU basis, this would provide additional contingency in the event of unknown issues during design or to

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address minor scope adjustments should the Municipality decide to implement some of the other suggested upgrades noted in the CDR. Stantec would only bill for actual effort required.

- We have assumed the preparation of three (3) separate tenders.
- We have not included efforts associated with preparation of pre-qualification documents for general contractors.

Closing

We appreciate the opportunity to provide this Phase 2 work plan and budget to the Municipality for your consideration. We understand the importance of this project and the aggressive timelines requested to meet the servicing needs for the Bruce Power site. In preparing this work plan, our team has met to discuss the core issues and elements, including staffing resources, that we will have in place to work towards meeting the schedule and budget requirements.

Regards,

Stantec Consulting Ltd.



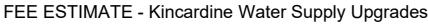
Nelson Oliveira P.Eng
Regional Business Leader, Water – Canada East
Phone: 519 494 7642
nelson.oliveira@stantec.com



Simon Horsley
North American Distribution System Water Quality Leader
Phone: 416 598 5282
simon.horsley@stantec.com

APPENDIX A

Time-Task Matrix

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