

April 3, 2024
File: 165620305

**Attention: Ms. Madison Mantha – Project Lead
Ms. Cathy Capot-Nepzy – Manager of Waste Diversion**

Essex-Windsor Solid Waste Authority
360 Fairview Ave. W. Suite 211
Essex Ontario N8M 3G4

Dear Madison,

Reference: Technical Memorandum on the Opinion of Probable Cost for a Source Separated Organics Transfer Station at the Windsor Site

1.0: INTRODUCTION

At the request of the Essex-Windsor Solid Waste Authority (EWSWA), Stantec Consulting Ltd. (Stantec) is pleased to present the following technical memorandum (memo) regarding the Opinion of Probable Cost (OPC) for a Source Separated Organics Transfer Station (TS-SSO) at the Windsor Site located at 3560 North Service Road Windsor, ON. The TS-SSO is to receive SSO where it would be consolidated, loaded for haul, and hauled off-site for processing. All tipping, consolidating, and loading of transfer vehicles would take place within the new TS-SSO.

2.0: PROJECT BACKGROUND

Prior to the current feasibility study, the EWSWA retained EXP Services Inc. (EXP) to perform a review of the existing waste management logistics and transfer infrastructure to provide recommendations for an organic waste collection program. The resulting report, Logistics and Transfer of Regional Solid Waste and Source Separated Organics: Review and Strategic Plan (EXP Report), which is dated May 23rd, 2023, has a number of recommendations. One of the recommendations outlined in the EXP Report was to implement a TS-SSO at the existing Windsor Site. Further, it identified the following two options for this proposed TS-SSO:

- (1) Retrofit the existing Container Material Recovery Facility (MRF) (referred to as Alternative No. 1 in this memo); or
- (2) Construct a new TS-SSO at the Site (referred to as Alternative No. 2 in this memo).

The EWSWA has indicated that Alternative No.2 - constructing a new TS-SSO at the Windsor Site is not considered a feasible option due to technical and operational constraints. In the EXP Report (2023), the OPC for Alternative No. 1 - the conversion of the Container MRF was estimated to be \$0.67M.

In November 2023, the EWSWA retained Stantec to evaluate the feasibility of implementing a new TS-SSO within the existing Fibre MRF at the Site. Due to potential upcoming program changes, the EWSWA and the City of Windsor were interested to understand if this was a feasible option. The study included (i) review of background information; (ii) feasibility assessment of retrofitting the existing Fibre MRF to a TS-SSO; (iii) development of a conceptual design and drawings including conceptual operating procedure, TS-SSO layout, modification requirements, and implementation timeline; (iv) identification of TS-SSO permitting requirements or considerations; and (v) preliminary opinion of probable cost. A feasibility study report (Stantec Report) was prepared and submitted to the EWSWA in March 2024.

The conceptual design, which is outlined in the Stantec Report, is to assist the EWSWA in effective decision-making and provide supporting documents in order for the EWSWA to discuss with the Ministry of Environment, Conservation and Parks (MECP) the new TS-SSO. This Stantec Report outlines the following two options for the conversion of the Fibre MRF:

- (3) Retrofit the northern portion of the existing Fibre MRF (referred to as Alternative No. 3 in this memo as well as in the Stantec Report); or
- (4) Remove the existing tip floor, including the building expansion and maintenance shed, retrofit the existing Fibre MRF, and expand on the west side of the existing Fibre MRF for transfer and hauling of SSO (referred to as Alternative No. 4 in this memo and the Stantec Report).

The OPC for the conversion of the Fibre MRF was estimated to be \$3.3M and \$4.2M for Alternative No. 3 and 4, respectively.

3.0: DISCUSSION

The OPC for the conversion of the Fibre MRF documented in the Stantec Report was approximately \$2.66M (~397 %) to \$ 3.54 (~529 %) higher than that for the conversion of the Containers MRF presented in the EXP Report.

All of the TS-SSO Alternatives, from both the EXP and Stantec Reports, will require extensive building modifications, site work, engineering and contract administration services, and equipment requirements. These are considered common to all of the TS-SSO alternatives; therefore, these requirements are not a determining factor in the OPC difference between in the EXP Report and the Stantec Report.

It is considered that the difference between the OPC in the EXP Report and the Stantec Report is mostly attributed to the following factors:

- Throughout the feasibility study a number of additional controls, work, and equipment were identified for the conversion of the existing facilities (described in the Stantec Report). These items are not included in the EXP OPC for Alternative No.1 but should be taken into consideration when comparing with the Stantec OPC for Alternatives No.3 and No.4. A list of the additional controls, work, and equipment including a high-level estimate of their financial impact is summarized as follows:
 - Specialty Floor Coating or Sacrificial Floor Costing = \$ 300,000
 - Basic Climate Control, Air Handling Unit, and Accessories = \$ 100,000
 - Comprehensive Odour Control Unit = \$ 900,000
 - Leachate System (Trash Basket and Oil and Grit Separator) = \$ 80,000
 - Transfer Equipment (specialized front-end loader) = \$ 185,000
 - Total = \$ 1,565,000
- With consideration of the list above, the total construction cost for Alternative No.1 would be approximately \$ 2.2M.
- Another item which contributes to the higher cost for Alternatives No.3 and No.4 is the inclusion of a contingency allowance. A contingency allowance of 30% is included in the Stantec OPC to account for unforeseen circumstances (cost escalation, change of scope, additional work identified during detailed design). With the inclusion of a 30% contingency allowance the total construction cost for Alternative No.1 - the conversion of the Containers MRF would further increase to approximately \$ 2.9 M.
- In the EXP OPC a basic allowance was provided for the engineering / architecture design work and the contract fees. Based on the updated construction cost these values are expected to be greater and a high-level estimate of the predicted financial impact of these items is summarized as follows:
 - Engineering Design Allowance = \$ 100,000
 - Contract Administration Support = \$ 100,000
 - Total = \$ 200,000

With consideration of the additional fees outlined above, the OPC for the conversion of Alternative No.1 - the Containers MRF would be a minimum of \$ 3.1 M. The Stantec OPC for the conversion of the Fibre MRF was estimated to be \$3.3M and \$4.2M for Alternative No. 3 and 4, respectively. This minimum OPC for the Alternative No.1 - Container MRF results in a difference in price of \$ 0.22M (~7 %) or \$ 1.1M (~36 %) from that of Alternative No. 3 and 4, respectively.

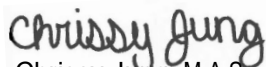
Based on the above results of the OPC analysis, it is our opinion that, if the OPC in the EXP Report were estimated on the similar basis as that in the Stantec Report, the cost for all alternatives would be within the similar range. The remaining difference in price among the alternatives may also be contributed to other factors including the extent of building modifications, inflation rates, and general estimating variances.

We hope this technical memo provides clarification on the factors causing the significant difference in OPC between the EXP Report and the Stantec Report.

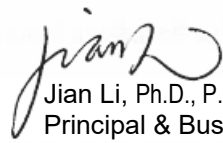
If you have any questions or require additional information, please contact the undersigned.

Sincerely yours,

STANTEC CONSULTING LTD.



Chrissy Jung, M.A.Sc., P.Eng.
Treatment Team Lead, Environmental Engineer
Phone: (519) 567-9537
Chrissy.jung@stantec.com



Jian Li, Ph.D., P. Eng., PE
Principal & Business Centre Practice Leader
Phone: (519) 562-7541
jian.li@stantec.com

- c. Cathy Copot-Nepszy – Waste Diversion Manager, EWSWA
Madison Mantha – Project Lead, EWSWA