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June 26, 2023

Our Reference
Project No. 60706241

Robert Boswick P. Eng.
Environmental Engineer
Manitoba Environment and Climate
Environmental Approvals Branch
14 Fultz Blvd.
Winnipeg MB R3Y 0L6

RE: City of Selkirk Wastewater Treatment Facility (File # 140.40; Environment Act Licence No. 3273) – Minor Notice of Alteration

Dear Mr. Boswick,

On behalf of the City of Selkirk, and at the request of Manitoba Environment and Climate, AECOM Canada Ltd. is providing a Notice of Alteration regarding proposed minor alterations required for the City of Selkirk wastewater treatment facility (WWTF) to provide process water to the proposed Canadian Premium Sand Inc. (CPS) solar glass manufacturing facility (File # 6137.00) at a rate of approximately 32 to 40 m^3/hour.[1] The competed Notice of Alteration form is submitted concurrently and separately from this cover letter.

Proposed minor alterations to the existing WWTF will include construction and operation of the following:

- Process lift station and storage reservoir (not on CPS facility project property)
- Process water forcemain (to transport treated effluent approximately 1,600 m to the CPS solar glass manufacturing facility project property)

A detailed description of the works is provided in Attachment A.

The alteration works are proposed to be completed to accommodate the CPS solar glass manufacturing facility project proposed development schedule: i.e., construction of phase 1 of the CPS solar glass manufacturing facility project completed in Q1 2025 and commissioning for the phase 1 facility by mid-2025.

The proposed alterations works will be done in accordance with applicable federal, provincial and municipal regulations and by-laws. Standard City of Selkirk erosion and sedimentation control measures will be employed during construction activities. Disturbed areas will be revegetated, where needed, using City of Selkirk's standard seed mixture. Vegetation clearing that may be required, (e.g., disturbance of grasses within rights-of-way) will be done outside of the breeding bird season for this area (i.e., April 14 – August 24)[2].

In closing, our environmental review of the proposed alterations has determined that the revised design features described in this letter will not result in substantive residual environmental effects and will not substantially alter potential environmental effects of the licenced Selkirk WWTF.

If you have any questions regarding the proposed alteration works, please contact me at your earliest convenience.

[1] Note that the CPS Solar Glass Facility Environment Act Proposal states a process water rate requirement of 150 m^3/hour for the Phase 2 facility, which has since been revised to 32 to 40 m^3/hour.
[2] Breeding bird season for Zone B4 according to Government of Canada's general nesting periods of migratory birds (https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html#_03)

Yours sincerely,

Marlene Gifford
Biologist, Environmental Assessor
AECOM Canada Ltd.
T: 204-928-9210
E: marlene.gifford@aecom.com

cc: Daniel McDermid (City of Selkirk, Director of Operations)
Eshetu Beshada (Senior Environmental Engineer, Manitoba Environmental Approvals Branch)
Siobhan Burland Ross (Acting Director, Manitoba Environmental Approvals Branch)

Attachment and Enclosure:

Attachment A: Alteration Details Description

Enclosed:
Notice of Alteration Form (file: NoA Form_City of Selkirk WWTF File 140.40_2023-06-22-Signed.pdf)

AECOM

Attachment A

Alternation Design Description

Attachment A:
Alteration Details Description

1. INTRODUCTION

The City of Selkirk (the City) intends to provide treated secondary effluent water from the Selkirk wastewater treatment facility (Selkirk WWTF), to be used as process cooling water at Canadian Premium Sand's (CPS) proposed solar glass manufacturing facility (CPS Facility) in Selkirk.

CPS' plan for the solar glass facility is to construct Phase 1 which will be operational in Q4 2025 then some time afterwards construct Phase 2. Given that the design and construction timeline for a solar glass plant is approximately two years, Phase 2 is unlikely to be operational before 2027.

Conceptual design for a new reservoir / lift station and forcemain to pump the secondary effluent from the Selkirk WWTF to the proposed CPS Facility has been completed and is described in Section 2.

2. DESIGN OVERVIEW

Treated wastewater from the secondary stream process will be taken from the Selkirk WWTF and reused as the process water in CPS Facility. The treated wastewater will typically have less than 3 mg/L of solids and will be taken from the existing 400 Ø HDPE SE effluent forcemain at the Selkirk WWTF. The tie-in will be located downstream of the Selkirk WWTF membrane treatment component, but upstream of the Selkirk WWTF ultraviolet (UV) disinfection component as indicated in **Figure 1**. Tie-in at this location will not impact the UV system, there would be no requirement to confirm the hydraulic profile downstream of the UV building. The configuration of the Selkirk WWTF has a plant overflow line located downstream of the UV treatment system, where periods of high flow bypass the Selkirk WWTF. To maintain a consistent quality of reuse water sent to the CPS Facility from the Selkirk WWTF, the CPS process water connection will be located at the line between the existing Selkirk WWTF membranes and WWTF UV disinfection system.

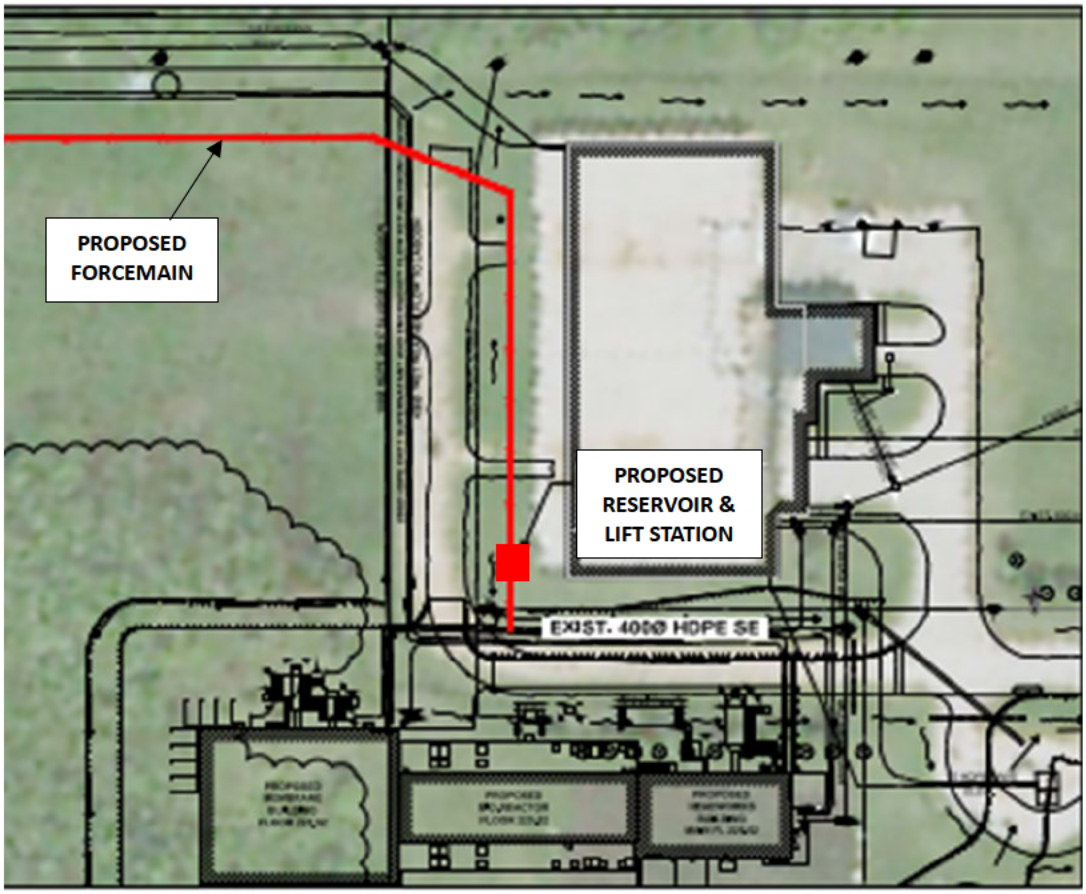

Figure 1: Proposed Treated Effluent Connection Point and Reservoir / Lift Station

A tee connection will direct the treated effluent water from the Selkirk WWTF through a control valve (in a chamber) to a new reservoir / lift station built for the distribution of treated water to the CPS Facility. This reservoir / lift station will contain two submersible pumps (duty and standby) to send flow through a new HDPE forcemain to the CPS Facility where it will be equalized in a holding tank for use. The distance from the lift station on the Selkirk WWFT property to the CPS holding tank on the CPS Facility property is approximately 1.6 km.

CPS's water demand flow rates are presented below:

Required flow rate in 2025 (Phase 1)	16-20 m^3/hr (384 to 480 m^3/day)
Flow Rate for first and second plants (Phase 2)	32-40 m^3/hr (768-960 m^3/day)

CPS's demand in 2025 is 16-20 m^3/hr (384 to 480 m^3/day); however, another glass plant is expected to be constructed in the future, resulting in a total demand of 32 to 40 m^3/hr (768m^3/day to 960 m^3/day) for both plants. The forcemain & reservoir / lift station for the plant will be designed to accommodate this future expansion.

The CPS Facility is expected to operate 24 hours a day, seven days per week, which is the same operational hours as the Selkirk WWTF.

The WWTF produces a daily average effluent flow of 2,631 m^3/day and a minimum average effluent flow at evenings of 691 m^3/day. This flowrate will increase when the CPS Facility is operational in 2025 (Phase 1) as it will discharge approximately 9 m^3/hr (216 m^3 per day) of facility wastewater to the Selkirk WWTF, rising to 18 m^3/hr (432 m^3/day) when Phase 2 is completed. This means that the Selkirk WWTF has sufficient flow to consistently meet the current and future process water flow demands for both phases of the CPS Facility.

Note that the City will have an Industrial Services Agreement in place with CPS for discharge of the CPS Facility wastewater. CPS will pre-treat its sewage before releasing it to the Selkirk WWTF to ensure that the requirements of the Industrial Services Agreement are met.

3. FORCEMAIN

The new forcemain will transport treated wastewater approximately 1.6 km from the Selkirk WWTF to the CPS Facility. Sizing of the forcemain is based on the ultimate water demand, and takes into consideration friction losses, cleansing speed and travel distance of the treated wastewater. The initial proposed alignment is shown in **Figure 2**. Installation of the forcemain is expected to use directional drilling to minimize interruptions to Selkirk WWTF operations. The forcemain will connect and discharge the treated wastewater into a storage tank on the CPS Facility property as shown in **Figure 3**.

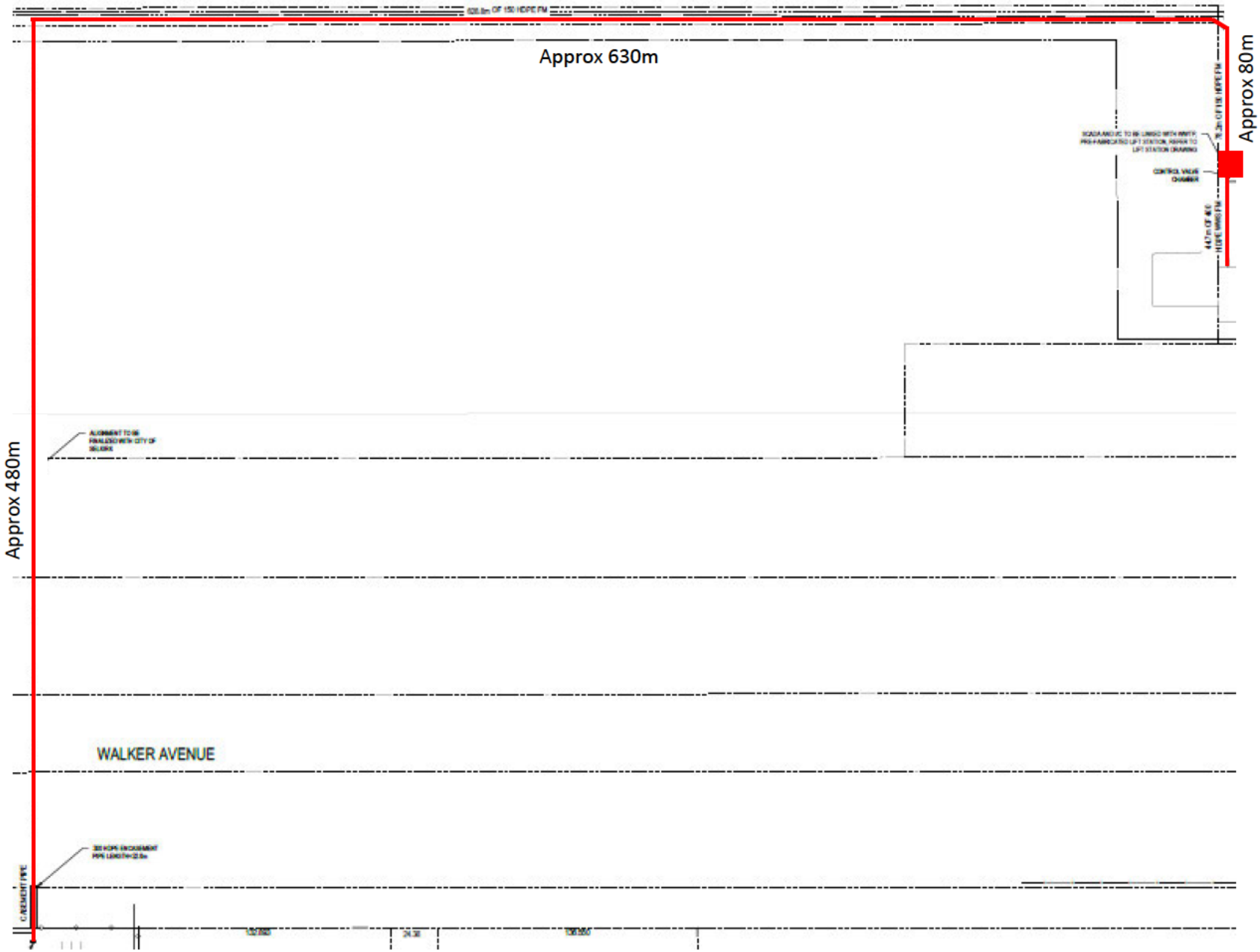

Figure 2: Proposed Forcemain Alignment

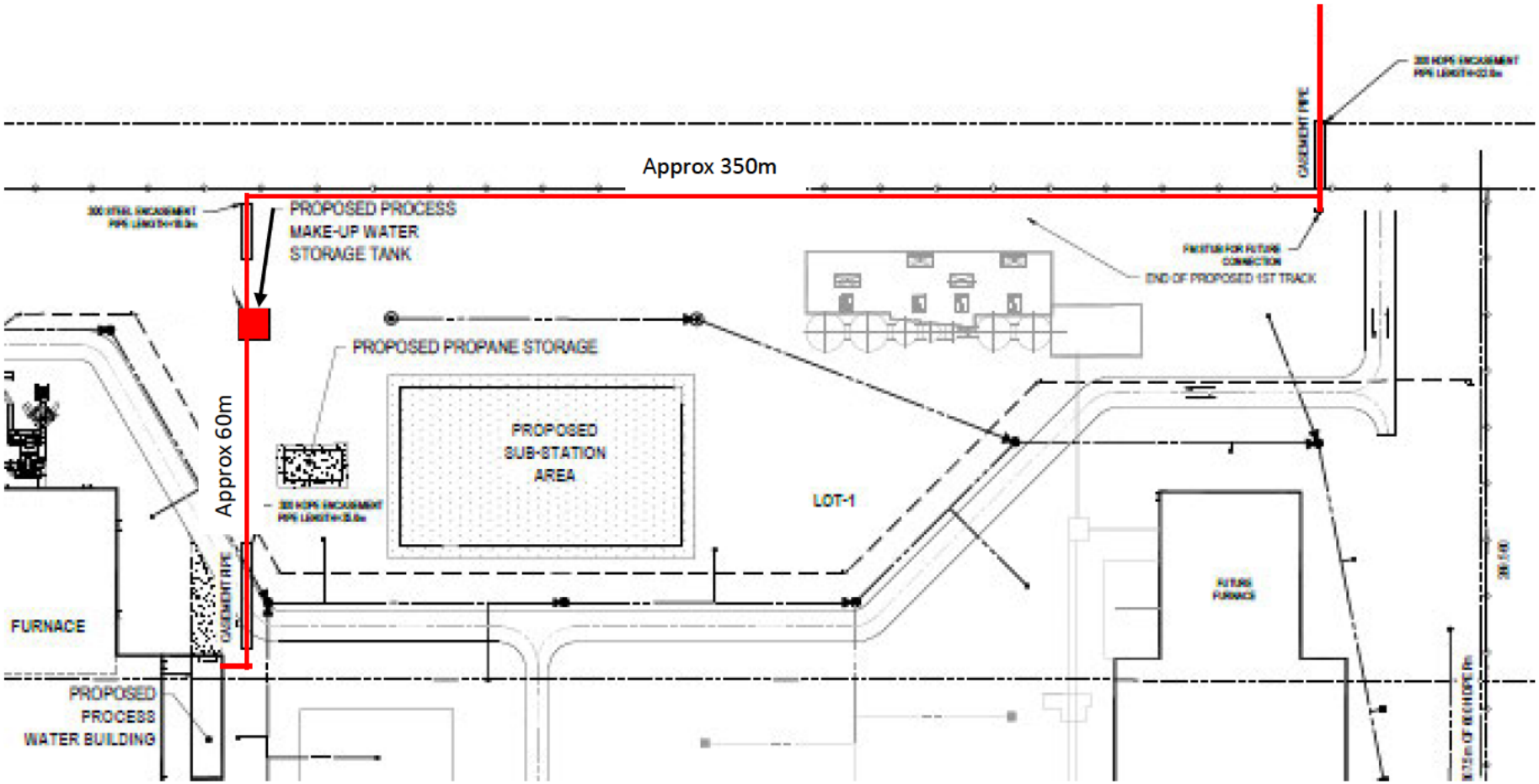

Figure 3: Approximate Location of The Water Storage Tank at CPS Facility

4. RESERVOIR / LIFT STATION

A reservoir / lift station will be designed to pump the treated effluent flow from the Selkirk WWTF to the CPS Facility through the new dedicated forcemain. The reservoir / lift station will be located in an accessible and low traffic area after the connection at the Selkirk WWTF on the 400 Ø HDPE SE effluent line located downstream from the membrane facility but before the UV disinfection system. This infrastructure will be on the lands of the Selkirk WWTF.

A lead-lag system will be used in the lift station, where the system has an extra pump as redundancy/ stand by. The lead pump usually runs until it reaches its capacity, then the lag pump runs until the demand is reached. The pumps can also alternate the role of the lead pump. This will increase the reliability, capacity and even out the load on the pumps. A typical submersible pump installation is shown in **Figure 4.**

Lift station characteristics will include:

- At-grade rim location approximately 5 m deep
- A wet well configuration
- Two submersible pumps
- Electrical and controls in a panel above grade
- National Electrical Manufacturer Association (NEMA) 3R control panel enclosure
- A lead-lag system
- An extra pump as redundancy/stand-by

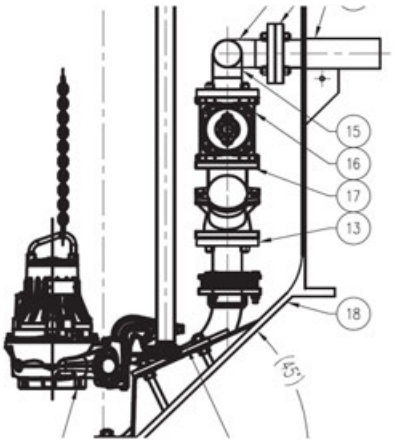

Figure 4: Typical Submersible Pump Station Installation

5. PROCSS CONTROL NARRATIVE

The operation of the pumps at the Selkirk WWTF, and subsequent discharge at the CPS Facility storage tank, will need a control strategy that maintains adequate flow for the CPS Facility to maintain operations. This section describes the initial control procedures considered with respect to this operation.

The control strategy will utilize the following equipment:

- Valve
- Level switches in the CPS storage tank and lift station
- Level transmitter in lift station
  Receiver station at the lift station
- Programmable Logic Controller (PLC) with a cellular, radio, or hard-wired link to send controls between the lift station and CPS storage tank

The process control programming is described below:

- Level switch in CPS tank is low – signal activated to pumps to transfer fluid from WWTP to CPS tank
- Level switch in CPS tank is high – signal shutdown lift station pump
- Level switch in CPS tank is high-high – critical alarm and shutdown lift station pump and close inlet valve to reservoir / lift station
- Level transmitter in reservoir / lift station on detecting a low level will open inlet valve and fill reservoir; on reaching a high level, the valve will close
- Level switch set at high-high in the reservoir will generate an alarm (high priority)
- Level switch set at low-low in the reservoir will generate an alarm (high priority) and prevent the pumps from operating and will open inlet valve to fill lift station chamber
- Once low-low level is satisfied, the inlet valve can be closed unless the system is calling for effluent transfer

6. CONSTRUCTION SEQUENCING

The reservoir / lift station and forcemain construction will be coordinated with the Selkirk WWTF to minimize disturbances. It is expected that the forcemain will be installed through directional drilling, thus minimizing open-cut installation and associated need for revegetation. The proposed reservoir / lift station is not located in a road and has been preliminarily accepted as an adequate location. (**Figure 1**). It is expected that the forcemain and reservoir / lift station would be installed, followed by connection of the electrical and controls, and then the tee connected to the existing 400 mm forcemain. Once connected, the system would then be commissioned.

Notice of Alteration Form

Manitoba
Environment, Climate and Parks

File No.: 140.40	Environment Act Licence No.: 3273

Legal name of the Licencee: City of Selkirk

Name of the development: Wastewater collection and treatment plant alteration

Category and Type of development per Classes of Development Regulation:

Waste Treatment and Storage — Wastewater treatment plants

Licencee Contact Person: Daniel McDermid, Director of Operations, City of Selkirk
Mailing address of the Licencee: 739 Sophia Street
City: Selkirk Province: Manitoba Postal Code: R1A 2M1
Phone Number: (204) 785-4932 Fax: Email: dmcdermid@cityofselkirk.com

Name of proponent contact person for purposes of the environmental assessment (e.g. consultant):
Marlene Gifford, M.Sc., P.Biol., R.P.Bio.

Phone: (204) 430-5633 Fax: (204) 248-2040	Mailing address: 99 Commerce Drive Winnipeg, MB R3P 0Y7

Email address: marlene.gifford@aecom.com

Short Description of Alteration *(max 90 characters):*
Construction of new forcemains, lift station and associated works.

Alteration fee attached: Yes: ☐ No: ☑

If No, please explain: NoA requested by Manitoba Environment and Climate to accommodate a new proposed solar glass manufacturing facility development

Date: June 22, 2023	Signature: [redacted] Printed name: Daniel McDermid

A complete Notice of Alteration **(NoA)** consists of the following components:

- ☑ **Cover letter**
- ☑ **Notice of Alteration Form**
- ☑ **1 hard copy and 1 electronic copy of the NoA detailed report** (see "Information Bulletin - Alteration to Developments with Environment Act Licences")
- ☐ **$500 Application fee, if applicable** (Cheque, payable to the Minister of Finance)

Submit the complete NoA to:
Director, Environmental Approvals Branch
Manitoba Environment, Climate and Parks
1007 Century Street
Winnipeg, Manitoba R3H 0W4
EABDirector@gov.mb.ca

For more information:
Phone: (204) 945-8321 Fax: (204) 945-5229
https://www.gov.mb.ca/sd/permits_licenses_approvals/eal/licence/index.html

Note: Per Section 14(3) of the Environment Act, Major Notices of Alteration must be filed through submission of an Environment Act Proposal Form (see "Information Bulletin – Environment Act Proposal Report Guidelines")