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West Capital Airpark
Phase 2 Business Park

Servicing Report

Prepared for: West Capital Developments

West Capiral Airpark – Phase 2 Business Park

1500 Thomas Argue Road

Ottawa, Ontario

Servicing Report

Prepared By:

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November 20, 2024
Revised November 14, 2025

Novatech File: 102085-14
Ref: R-2024-131

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November 14, 2025

City of Ottawa
Planning & Growth Management Department
10 Laurier Avenue West
4th Floor Infrastructure Approvals Division
Ottawa, ON K1P 1J1

Attention: **Kevin Hall, C.E.T. Project Manager**

Reference: **West Capital Airpark – Phase 2 Business Park**
Site Servicing Report
Our File No.: 102085-14

Please find enclosed the Servicing Report, dated November 14, 2025, prepared for the Phase 2 Business Park of the West Capital Airpark development to address conditions of Draft Plan Approval. This report has been revised based on comments received from the City of Ottawa in an email dated April 14, 2025 and MVCA comments received May 20, 2025.

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

Yours truly,

NOVATECH

Alex McAuley, P.Eng.
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1.0 INTRODUCTION

1.1 Background

Novatech has been retained to provide design services for the proposed West Capital Airpark (residential development and business park) located at Carp Airport. The Carp Airport property is described as Part of Lots 12, 13, 14 and 15 Concession 3, Part of Lots 13 and 14 Concession 4 and part of the Road Allowance between Concession 3 & 4 in the former Township of West Carleton (Huntley Ward)—now the City of Ottawa. Refer to **Figure 1** (Key Plan) for the site location. Refer to **Figure 2** (Existing Conditions) for the existing conditions.

This report has been revised based on comments received from the City of Ottawa in an email dated April 14, 2025 and MVCA comments received May 20, 2025.

1.2 Purpose

This Servicing Report has been prepared for the Phase 2 Business Park of the West Capital Airpark development to address conditions of Draft Plan Approval. Refer to **Appendix A** for an excerpt of the Draft Plan conditions.

This report outlines the detailed servicing design for the proposed Phase 2 Business Park with respect to water distribution, sanitary servicing, and storm drainage. Stormwater management is addressed in the separate Stormwater Management Report.

The City of Ottawa Development Servicing Study Checklist has been included in **Appendix E.**

1.3 Proposed Development

The proposed Phase 2 Business Park consists of 21 blocks intended for industrial / commercial use. The development will include four new private streets connecting to existing Thomas Argue Road, Russ Bradley Road, and Carp Road. Refer to the **Concept Plan** (102085-CP3) for the proposed block and right of way configuration.

1.4 Reference Documents

The following reference documents are to be read in conjunction with this report.

<u>City of Ottawa Documents</u>

- Village of Carp Class Environmental Assessment for Water and Wastewater Infrastructure Upgrade/Expansion (1634-00693) dated May 2008, by Stantec.
- Carp River Watershed/Subwatershed Study, dated December 2004, by City of Ottawa.

<u>Existing Approved West Capital Airpark Documents</u>

- Hydraulic Network Analysis and Water Storage Facility Design Report (R-2015-118) dated July 2015, by Novatech.
- Phase 1B-2 Residential Servicing Report (R-2023-015) dated July 2023, by Novatech.
- Wastewater Treatment System Report (No. 14-1125-0011), dated January 2015, by Golder Associates

Phase 2 Business Park Documents

- Geotechnical Investigation and Slope Stability Assessment (100011.049), dated November 4, 2025 by Gemtec
- Environmental Impact Statement (100011.049), dated October 9, 2025 by Gemtec
- Phase 2 Business Park – SBS Sanitary Collection Design Brief dated November 2024, by Clearford
- Hydraulic Network Analysis Design Brief, dated November 18, 2024, by Novatech
- Sanitary Pump Station Design Brief, dated November 20, 2024, by Novatech
- Phase 2 Business Park Stormwater Management Report (R-2024-125) dated November 14, 2025, by Novatech

1.5 Ownership, Operation and Maintenance of Proposed Servicing

The Phase 2 Business Park will be developed as a condominium corporation with common elements. However, in accordance with the Municipal Capital Facility Development Agreement (MCFDA) that is in place for the project, the City of Ottawa would be responsible for maintenance, repair, and replacement of the surface works that include roadways, roadside ditches and stormwater management facilities, and streetlights.

The sanitary and water servicing would be private communal systems owned, operated, and maintained by a condominium corporation as common elements. Some existing sanitary and water servicing has already been constructed and is currently being maintained by Clearford Water Systems Inc.

Details are included in Schedule I of the Subdivision Agreement for Phase 1 Residential (refer to **Appendix A**). The same approach is proposed for the Phase 2 Business Park.

2.0 ROAD DESIGN

The proposed roadways for Phase 2 Business Park would consist of 20m right-of-way, 6.0m asphalt width with 1.5m granular shoulders and roadside ditches. Due to the servicing and stormwater requirements, there is variation in the ditch bottom widths and servicing offsets. Sanitary and water servicing would be constructed outside of the paved areas.

The proposed right-of-way cross sections are shown on the Notes and Details Plans (**102085-BPND1, 102085-BPND2, 102085-BPND3).**

A Geotechnical Investigation report (Gemtec, November 2025) was prepared for the development of the Phase 2 Business Park and provides recommendations for pavement structure, servicing, and foundations. For the commercial use roadways within the Phase 2 Business Park the recommended pavement structure is outlined in **Table 2** below.

Table 1: Recommended Pavement Structure (from Geotechnical Investigation Report)

Pavement Material Description	Layer Thickness (mm)
Asphalt Wear Course (Superpave 12.5)	50
Asphalt Base Course (Superpave 19.0)	70
Granular A Base	150
Geogrid	BX1200 or equivalent
Granular B -Type II Subbase	400

3.0 SITE SERVICING OVERVIEW

The objective of the servicing design is to provide suitable water supply for domestic use and fire protection, and adequate sanitary and storm servicing systems for the proposed Phase 2 Business Park development.

The following works would be constructed as part of Phase 2 Business Park:

- Phase 2 Business Park right of ways, including roads and roadside ditches and culverts, potable watermain, fire protection watermain, hydrants and backflow preventers, sanitary sewers, including pump station and forcemain sewer, and utilities, including transformers and streetlights.
- Water and sanitary service stubs for the individual blocks
- Stormwater Management Facilities (Dry Ponds), including Oil Grit Separators (OGS), and outlets to the Northeast Tributary.
- Stormwater Management Facilities (Linear Dry Ponds), including outlets to Southeast Tributary (Carp Road roadside ditch).
- Upgrades to the existing Water and Wastewater Treatment Facility, including
    - Construction of one additional wastewater treatment module.
    - Construction of additional equalizer storage tank(s) if required based on flow monitoring
- Drainage swale to capture runoff from the Core Airport Lands, which would outlet to the Northeast Tributary.
- 12.0m open space buffers would be provided north of Street 15 and east of Street 17.

The following works were constructed as part of Phase 1A Residential Subdivision and would service Phase 2 Business Park:

- Watermain feed from the Village of Carp
- Water Storage and Treatment Facility
- Domestic and Fire Protection watermains along part of Street 15
- Wastewater Treatment Facility

Refer to **Figure 1 (Key Plan)** for the approximate location of the Water Storage Facility and Wastewater Treatment Facility.

Ministry of the Environment Conservation and Parks (MECP) approvals have been received for the Wastewater Treatment Facility. Refer to **Appendix F** for a copy of the MECP Environmental Compliance Approval (ECA).

In support of the Draft Plan of Subdivision application for the Phase 2 Business Park, the water allocation to the Carp Airport Development was reviewed in the memo – Phase 2 Business Park Water Allocation Framework (Novatech, March 2023), included in **Appendix B**. That review is discussed further in the sections below.

4.0 WATER SUPPLY AND DISTRIBUTION

The watermain system for the West Capital Airpark development is connected to the existing Village of Carp municipal watermain which supplies maximum day demand to the private watermain system within the Carp Airport. The existing water storage facility and the water distribution system are private communal systems owned, operated, and maintained by a condominium corporation as common elements.

A 200mm watermain was constructed along the shoulder of Carp Road, from Rivington Street in the Village of Carp to the east end of future Street 15. The 200mm watermain connects to a 300mm watermain within the development which connects to the water storage facility. The water storage facility is used to re-chlorinate, accommodate peak flows and provide fire protection in accordance with the approved Hydraulic Network Analysis (Novatech, July 2015). Refer to **Figure 3 (Watermain System Layout)** for an overview of the Carp Airport water distribution system.

A Hydraulic Network Analysis Design Brief has been prepared to reflect the detailed design revisions as part of the Phase 2 Business Park, and is included in **Appendix B.**

Two separate water distribution networks would be provided (one domestic, one fire protection) to service the Phase 2 Business Park. Both distribution networks would draw water from the existing water storage facility, which currently includes one existing water storage tank.

Domestic water is distributed from the water storage facility through the private water distribution network. Refer to **Figure 4** (Watermain Servicing) for an overview of the proposed Phase 2 Business Park watermains.

4.1 Water Availability

The Village of Carp EA accounts for the draft approved lands, which includes the Phase 2 Business Park, with regards to supplying the long-term water demands of 1.457ML/day (maximum day). Refer to excerpt in **Appendix B**.

The City of Ottawa has confirmed that a maximum day flow of 0.5ML/day is currently available to the Carp Airport. The City of Ottawa has also indicated that short term upgrades in the Village of Carp are underway which would provide an additional maximum day flow of 0.2ML/day for a total of 0.7ML/day. As indicated in the Phase 1B-2 Residential Servicing Report (Novatech, June 28, 2024), the existing residential phases (Phase 1A, 2A, 1B-1, 1B-2) currently account for all of the available 0.5ML/day flow.

The rate of flow is controlled by the flow restrictor installed in the existing water meter chamber at Carp Road and Rivington Street. When the short term upgrades to the water supply at the Village of Carp have been completed, the flow restrictor would be replaced with one sized for the maximum day flow of 0.7ML/day.

Refer to **Appendix B** for an excerpt from the Phase 1B-2 Residential Servicing Report (Novatech, July 2023), which provides a summary of the monitored flow data of the existing residential phases (Phase 1A, 2A, 1B-1, 1B-2).

The design for the Phase 2 Business Park discussed in this report is on the basis of the additional 0.2ML/day being available (i.e. Village of Carp short-term upgrades completed) to the Carp Airport Subdivision. The servicing of the Phase 2 Business Park would depend on the timing of the City's short-term upgrades.

A preliminary timeline of the Village of Carp short term upgrades and the Phase 2 Business Park servicing/approvals process is provided in the Development Approvals and Carp Village Short Term Servicing Upgrades Memorandum (Novatech, August 21, 2024), included in **Appendix B**. Included in the memo is an email from the City of Ottawa which provides a status update on the Village of Carp upgrades.

Based on discussion with the City of Ottawa, the approvals process for the Phase 2 Business Pak can proceed concurrently with the short-term upgrades. The City indicated that building permits would be restricted until such time that the short-term upgrades are completed. Refer to **Appendix B** for correspondence.

4.2 Water Demands

The allocation of a maximum day demand of 200,000L (0.2ML) would allow for approximately 1,777 employees, or a maximum daily demand of approximately 6,240L/day per net developable hectare. The Water Demand Scenarios summary (October 31, 2024), provided in **Appendix B** shows the water use of various commercial / industrial use scenarios, demonstrating that 0.2ML of maximum day flow would be sufficient to service the Phase 2 Business Park.

The individual blocks within the Phase 2 Business Park would each be allocated a maximum daily flow. Developers/purchasers of the individual blocks would be required to limit domestic water demands to meet their daily allocated flow. Individual blocks could also use storage tanks similar to a trickle feed system, provided that allocated maximum daily flows are met.

Due to the potential uses as permitted by zoning, higher water users may be allocated additional water provided that the overall daily water demand for the Phase 2 Business Park is maintained within the allocation provided by the City of Ottawa.

As the development has an existing communal drinking water treatment and distribution system, water demands would be monitored as each block develops.

4.3 Fire Flows

Fire protection for the West Capital Airpark was developed with Ottawa Fire Services on the basis of providing 63.08L/s for 30 minutes within the private rights-of-way. The system for providing fire protection, including the pumps and storage of water was constructed on the above basis.

Fire protection for the Phase 2 Business Park would be provided by a separate fire protection watermain. This approach is consistent with the existing approved Phase 1 Business Park fire protection watermain.

At the time of site plan, individual block developments may need to provide supplementary fire protection to meet Ontario Building Code (OBC) requirements. Fire protection watermains would not be extended into individual blocks.

4.4 Water Distribution

Water distribution for the Phase 2 Business Park would consist of two separate networks, a 150mm diameter watermain for distribution of potable water, and a 300mm diameter watermain for fire protection. The proposed 150mm diameter watermain would connect to the existing watermain on Street 15, which was constructed as part of Phase 1A Residential works.

The proposed 300mm diameter fire protection watermains would connect to the existing 200mm and 300mm diameter watermain supply from the Village of Carp, constructed as part of Phase 1A Residential. Backflow preventers would be installed between the supply from the Village of Carp and the 300mm diameter fire protection watermains.

The fire protection watermain and potable watermain on Street 16 and Street 18 would be extended and capped to allow for future connections to the Core Airport Lands. Refer to the **Figure 3 (**Watermain Servicing) for the proposed watermain layout.

EPA NET modeling was completed to confirm that the fire flows and peak hour flows could be adequately delivered with the watermain sizes proposed. The model results satisfy the following pressure conditions at all locations within the development.

- Pressures less than 56m (80psi) during the high pressure (average day) condition
- Pressures greater than 28m (40psi) during the low pressure (peak hour) condition
- Pressures greater than 14m (20psi) during the fire flow condition.

The hydraulic model and watermain design are consistent with the recommendations outlined in the Hydraulic Network Analysis and Water Storage Facility Design Report (Novatech, July 2015). The Phase 2 Business Park Hydraulic Network Analysis Design Brief (Novatech, November 2024) summarizes the Phase 2 Business Park modelling results and is included in **Appendix B.**

4.5 Water Storage Facility

The Water Storage Facility constructed with the Phase 1A Residential subdivision uses an onsite water storage tank to accommodate peak hour flows and provide fire protection in accordance with the approved Water Storage Facility Design Report (Novatech, July 2015). The Water Storage Facility currently has one operational water storage tank that was constructed as part of

the Phase 1A works with a capacity of 352,000L. A second water storage tank would be added if required based on demands.

Equalization and Emergency Storage requirements are provided by the water storage tank. Based on the review conducted as part of the Phase 1B-2 Residential Subdivision Servicing Report (Novatech, July 2023) there would be 54,295L of remaining storage in the existing water storage tank. This volume equates to a maximum day demand of 0.18ML/day, which is consistent with the Water Demand Scenarios summary (Novatech, October 2024)

The capacity of the existing water storage tank was reviewed as part of the Phase 2 Business Park Servicing Capacity Review (Novatech, November 2024), included in **Appendix B**. Water demands would be monitored as the Phase 2 Business Park develops to confirm when the additional water storage tank would be required.

5.0 SANITARY SEWAGE COLLECTION AND TREATMENT

Sanitary servicing will be by means of small-bore gravity sewers and has been designed by Clearford Industries Inc. The small-bore sewer system will outlet to a private sanitary pump station and forcemain that will outlet to the existing wastewater treatment facility. The entire collection system including pump station, will be owned, operated and maintained by the condominium corporation. The individual blocks would each require an on-site clarifier tank to pre-treat sanitary flows before outletting to the small-bore sewers within the right-of-way.

5.1 Sanitary Collection

Based on the review of the water demands for the subdivision, the expected sanitary flows would be similar with the Water Demand Scenarios summary (Novatech, October 2024) provided in **Appendix B**

The small-bore sewer system would include a clarifier tank installed on each block. The clarifier tank is a septic tank fitted with Clearford proprietary components. The outlet from the clarifier tank will connect to a small-bore sewer collection system, located within the right-of-way. System access point cleanout structures would be installed at about 90m spacing within the right-of-ways.

The sanitary sewer system from Streets 17 and 18 would cross under the Northeast Tributary by means of an inverted siphon as described in Clearford's design report (Clearford, November 2024). The small-bore sewers would connect to a sanitary pump station located in the northeast corner of the site, adjacent to Stormwater Management Facility A.

The design of the small-bore sewer system is discussed in the SBS Sanitary Collection System – Phase 2 Business Park Design Report (Clearford, November 2024)

The proposed servicing layout for the sanitary system is shown on **Figure 4 (Sanitary Servicing).**

5.2 Sanitary Pump Station

The communal sanitary pump station would be located in the northeast corner of the site, adjacent to the inlet for Stormwater Management Facility 'A'. Access would be provided by means of a private driveway located at the end of Street 15.

The pump station would include an inlet manhole, wet well complete with pumps, external valve chamber for the forcemain, external control panel and backup generator. An emergency overflow would outlet directly to the Stormwater Management Facility above the 1:100-year water elevation. Refer to the Sanitary Pump Station Design Brief (Novatech, November 2024), included in **Appendix C** for details on the pump station design.

A dual sanitary forcemain along Street 15 and Thomas Argue Road would connect the pump station to the existing wastewater treatment facility. The pump station controls would be integrated into the controls of the existing wastewater treatment facility.

5.3 Future Sanitary Flows

A sanitary sewer stub would be constructed within the Street 15 ROW to the existing 6.0m servicing easement on Block 13 to allow for a future connection from the Core Airport Lands, should the area be developed. The sanitary sewer on Street 16 would be capped at the cul-de-sac to allow for a future connection from the Core Airport Lands.

The gravity sanitary sewer downstream of these future connections have been designed to allow for potential future flows. The design of the pump station would accommodate potential future flows if required.

5.4 Sanitary Treatment

The wastewater treatment facility (WWTF) has been designed to be constructed in phases. Two treatment modules are currently operational; One module was constructed with Phase 1A Residential, and one with Phase 1B-1 Residential. The WWTF has been designed for a total of 5 treatment modules (i.e. construction of an additional 3 modules). Each module has a rated average day capacity of 186m3/day.

MECP ECA approval is currently in place for a rated capacity of 372m3/day with the two constructed modules. The capacity of the existing WWTF was reviewed as part of the Phase 2 Business Park Servicing Capacity Review (Novatech, November 2024), included in **Appendix B.**

Based on that review, it is proposed to install a third treatment module to expand the capacity of the WWTF to a rated total capacity of 558m^3/day. A new MECP ECA would be required for the expansion of the WWTF as part of the Phase 2 Business Park works.

6.0 STORM DRAINAGE

The development area generally slopes from west to east, and outlets to either the Northeast or Southeast Tributaries. A portion of the Southeast Tributary forms part of the Carp Road roadside ditch. Both tributaries cross under Carp Road and connect to the Carp River.

Both tributaries are considered fish habitat, so the overall drainage design is intended to generally maintain the existing drainage split between the two tributaries. The proposed works are setback from the fish habitats and are not intended to replace or provide fish habitat.

Fish habitat along with setbacks from fish habitat are shown on the **Constraints Plan** (102085-CON)

6.1 Business Park Blocks and Rights-of-way

The Phase 2 Business Park will be serviced by roadside ditches which will outlet to the proposed Stormwater Management (SWM) Facilities. Five SWM Facilities are proposed to provide quantity and quality control of runoff to pre-development levels for the development blocks and rights-of-ways.

The roadside ditches are sized for the 1:100-year storm event and would convey both minor and major flows to the SWM Facilities. Culverts located at driveways, hydrants, and transformers, would be sized for the 1:5-year storm event and road crossing culverts sized for the 1:10 year storm event. The proposed storm drainage system is shown on **Figure 5** (Storm Servicing).

Two SWM Facilities would outlet to the Northeast Tributary and would accommodate runoff from Streets 15, 16, 18, and part of Street 17.

With the requirement to balance the stormwater runoff based on fish habitat requirements, it is proposed to use the open space block between Carp Road and Street 17 for stormwater management. The Draft Plan requirement for 12m of open space between Carp Road and Street 17 limits the potential volume for stormwater management. Three linear type SWM Facilities are proposed and would outlet to the Southeast Tributary to accommodate runoff from part of Street 17.

The Phase 2 Business Park Stormwater Management design is discussed further in the Stormwater Management Report (Novatech, November 2025)

6.2 Core Airport

A portion of the Core Airport lands currently drains through the proposed Phase 2 Business Park Lands. A perimeter drainage ditch would be constructed within the Core Airport Lands along the boundary of the Phase 2 Business Park (Blocks 3 to 13), to capture Core Airport stormwater runoff. The drainage ditch would outlet to a branch of the Northeast Tributary.

A section of the ditch, adjacent to the existing hangers, would be located within the Phase 2 Business Park, within a drainage easement located along the rear of Blocks 6 and 7.

7.0 WATER BALANCE (INFILTRATION)

The West Capital Airpark Development is within the Carp River Watershed. The Carp River Watershed / Subwatershed Study (City of Ottawa, December 2004) discusses the various soil types within the Carp River Watershed and their groundwater recharge and discharge potential. Refer to Figure 3.5.5 included in **Appendix D**. The Phase 2 Business Park is underlain by clay soil, which is categorized as moderate infiltration potential (Table 8.3.11) with an annual infiltration of 104mm.

The Geotechnical Investigation and Slope Stability Assessment (Gemtec, October 2024), provides further discussion on the subsurface conditions, confirming a soil profile of silty clay to clayey silt, overlain by silt and sand. Refer to **Appendix D** for an excerpt from the Geotechnical Investigation and Slope Stability Assessment.

In accordance with City of Ottawa Technical Bulletin IWSTB-2024-04, due to the presence of silty clay soils, infiltration type low impact design (LID) measures are not permitted and are therefore not proposed for the Phase 2 Business Park development. While not quantified as part of this report, Best Management Practices (BMPs) including grassed swales within the development blocks, roadside ditches, and dry SWM facilities would promote infiltration. The roadside ditches have been designed with reduced longitudinal slope and flat bottoms to reduce velocities and promote infiltration where possible. Refer to **Appendix D** for an excerpt from City of Ottawa Technical Bulletin IWSTB-2024-04.

Additional discussion including calculations is provide in the Stormwater Management Report (Novatech, November 2025).

8.0 EROSION AND SEDIMENT CONTROL

The following erosion and sediment control measures are to be implemented during construction in accordance with the "Guidelines on Erosion and Sediment Control for Urban Construction Sites" (Government of Ontario, May 1987) and "Construction Specification for Temporary Erosion and Sediment Control Measures" (OPSS 805).

These temporary measures are to be implemented prior to construction and remain in place throughout each phase of construction; and are to be inspected regularly.

Erosion and sediment control measures are shown on the Erosion and Sediment Control Plan (Drawing **102085-ESC4**).

Construction Measures - General

- A qualified inspector should conduct daily visits during construction to ensure that the contractor is working in accordance with the design drawings and that mitigation measures are being implemented as specified.
- Silt fencing is to be installed along the upland edge of all fish habitat corridors according to OPSS 1860, Table 3 to isolate all work areas from the adjacent aquatic habitat.
- Rock flow check dams are to be installed at the outlets to roadside ditches and woven with Class II geotextile according to OPSS 1860. The rocks used shall be according to OPSS 1004 requirements for rip-rap and gabion stone.
- Catchbasin Inlet inserts are to be placed under all catchbasins and storm manhole covers, checked daily and cleaned out once 50% full.
- Mud mats are to be installed at designated truck entrances to ensure that minimal material is tracked off-site.
- After complete build-out, all sewers are to be inspected and cleaned and all sediment and construction fencing is to be removed.

Construction Measures – Outlets to Watercourses

Under Ontario Regulation 174/06, the proposed outlets to watercourses considered as aquatic habitat will require an application under Section 28 of the Conservation Authorities Act - Alterations to Waterways.

Mitigation measures to ensure a minimal amount of disturbance to the affected watercourses will be developed in conjunction with MVCA at the time of the permit application. These measures should include:

- Operation of machinery outside of the water in a manner that minimizes disturbance to the banks of the watercourse.
- All materials and equipment must be used in a manner that prevents any deleterious substance (e.g. Petroleum, silt, debris, etc.) from entering the watercourse.
- Stockpiling of material and maintenance of equipment must be at least 30 meters from the existing watercourse.
- All material used in the construction of the outlet should be clean and free of fines.
- Access should be confined to a single-entry point at each outlet location in order to minimize removal and/or destruction of adjacent riparian vegetation along the shoreline.
- No in-stream works are permitted between March 15 and July 1 of any given year to protect local fish populations during their spawning and nursery time periods.
- No in-water work shall be conducted at times when flows are elevated due to local rain events or seasonal floods.
- Storm drainage outlets are to be stabilized, as required, before the discharge points become operational.
- Additional stream bank stabilization methods, if necessary, include the addition of rip-rap, live stakes, live fascine and joint planting of rock and live stakes.

Construction Measures – Culvert Installation

The contractor is to implement the required erosion protection measures prior to culvert installation.

9.0 BLOCK DEVELOPMENT CRITERIA

Each block would be developed independently through the site plan control process. The servicing criteria discussed in the sections above are summarized below.

Water
Each block would be limited to a maximum daily demand of 6,240L/ha/day per net developable hectare for the domestic water. This is based on 4,166L/ha/day for an average day. The developer may increase/reduce individual lot allocation based on potential individual block requirements provided the overall subdivision allocation is not exceeded.

A maximum fire flow of 63.08L/s is available for 30 minutes from the fire protection watermain system within the right-of-way. Additional water for fire fighting may need to be provided on each block if required based on the individual block development plans.

Sanitary
Each block would be limited to a maximum daily sanitary flow of 6,240L/ha/day per net developable hectare. This is based on 4,166L/ha/day for an average day. The developer may increase/reduce individual lot allocation based on potential individual block requirements.

Each block would be required to provide a clarifier tank which meets the requirements of the small-bore sewer system design. The clarifier tanks are designed to perform at-source solids separation, clarification, solids retention and primary treatment. Refer to the Phase 2 Business Park Development SBS Sanitary Collection Design Brief (Clearford, November 2024) for further details.

Stormwater

On-site stormwater quantity control would not be required unless the runoff coefficients in **Table 2** are exceeded. As long as the block runoff coefficient is less than shown, then all storm events up and including the 1:100 year can flow uncontrolled to the roadside ditches.

If the block runoff coefficient exceeds that indicated in **Table 2** below, then onsite storage is required to control the release rate to the equivalent of the maximum runoff coefficient as indicated, for all storm events up to and including the 1:100-year event.

Blocks would be required to promote infiltration by means of low slope surface drainage, including flatbottomed grassed swales. Driveway culverts would be required, as indicated on the detailed design drawings.

On-site stormwater quality control would be required to be provided for the 25mm water quality event.

Block owners would be responsible for the maintenance and operation of their onsite stormwater management systems including private swales.

Table 2: Design Runoff Coefficients

Block Number	Design Runoff Coefficient
Blocks 1 to 15	C=0.70 or 71.4% impervious
Blocks 16 to 21	C=0.65 or 64.3% impervious

10.0 CONCLUSIONS

This report has been prepared to address servicing related conditions of Draft Plan Approval for the proposed West Capital Airpark Phase 2 Business Park Subdivision.

The conclusions are as follows:

- The sanitary and water servicing—including the sanitary collection system, sewage treatment and disposal, the water storage facility, and the water distribution system—will be private communal systems owned, operated, and maintained by a condominium corporation as common elements.
- The City of Ottawa would be responsible for maintenance, repairs, and replacement of the surface works, including roadways, roadside ditches and stormwater management facilities, and streetlights.

- The proposed watermain for potable water would connect to the existing 150mm watermain on Street 15. The proposed fire protection watermain would connect to the existing 200mm and 300mm watermain on Street 15.
- The water storage facility is currently operational with one water storage tank which meets the needs of the Phase 2 Business Park.
- Servicing of the Phase 2 Business Park with water is dependant on completion of short-term upgrades to the existing water distribution system within the Village of Carp. Once short-term upgrades are complete, the Phase 2 Business Park would have an allocated flow of 0.2ML/day which would provide sufficient capacity.
- Developers/purchasers of the individual blocks within the Phase 2 Business Park would be required to limit their domestic water demands to their allocated flow.
- Sanitary servicing would be by means of small-bore sewer system consisting of a clarifier tank to be installed on each block connected to a small-bore sewer collection system, which includes gravity sewers, a pump station, and dual forcemains. The pump station and forcemains would convey the sanitary flow to the existing Wastewater Treatment Facility (WWTF).
- The WWTF is currently operational and would require the next phase of the WWTF design capacity to be implemented to service the Phase 2 Business Park.
- The proposed roadside ditches are sized for the 1:100-year storm event and would convey both minor and major flows to the Stormwater Management Facilities.
- Five SWM Facilities are proposed to provide quantity and quality control of runoff to pre-development levels for the development blocks and rights-of-ways.
- Erosion and sediment control measures would be implemented during construction.

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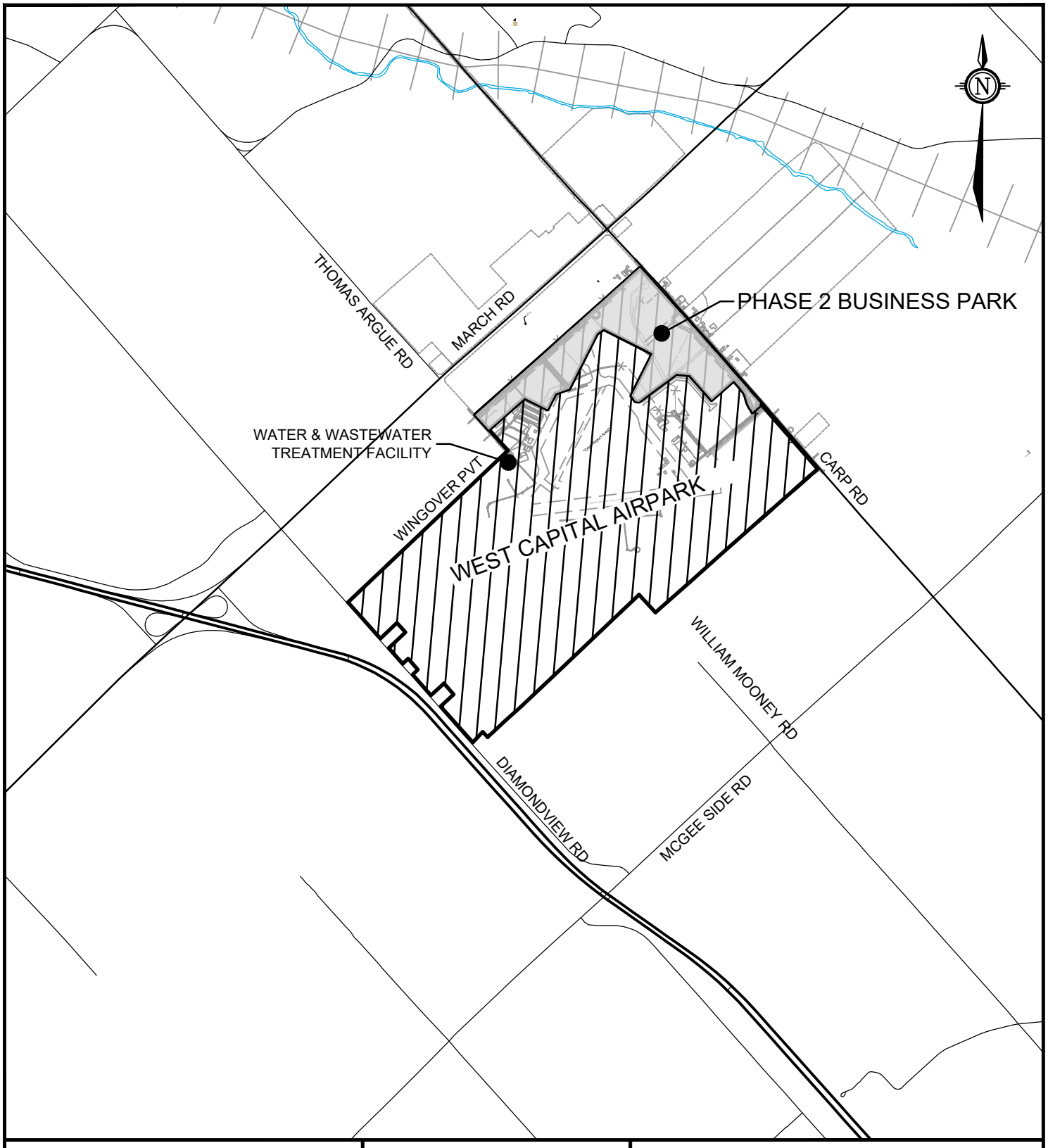
Alex McAuley, P.Eng.
Senior Project Manager | Land Development Engineering



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Facsimile (613) 254-5867
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WEST CAPITAL AIRPARK - PHASE 2 BUSINESS PARK

KEY PLAN

DATE	JOB	FIGURE
OCT 2024	102085	1

SHT8X11.DWG - 216mmx279mm

M:\2002\102085\CAD_BUSINESS PARK PH2\Civil\Figures\102085-2BP-KP.dwg, 8x11 Keyplan, Oct 02, 2024 - 11:58am, mparker

LEGEND

PROPERTY BOUNDARY

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CARP AIRPORT PHASE 2 BUSINESS PARK

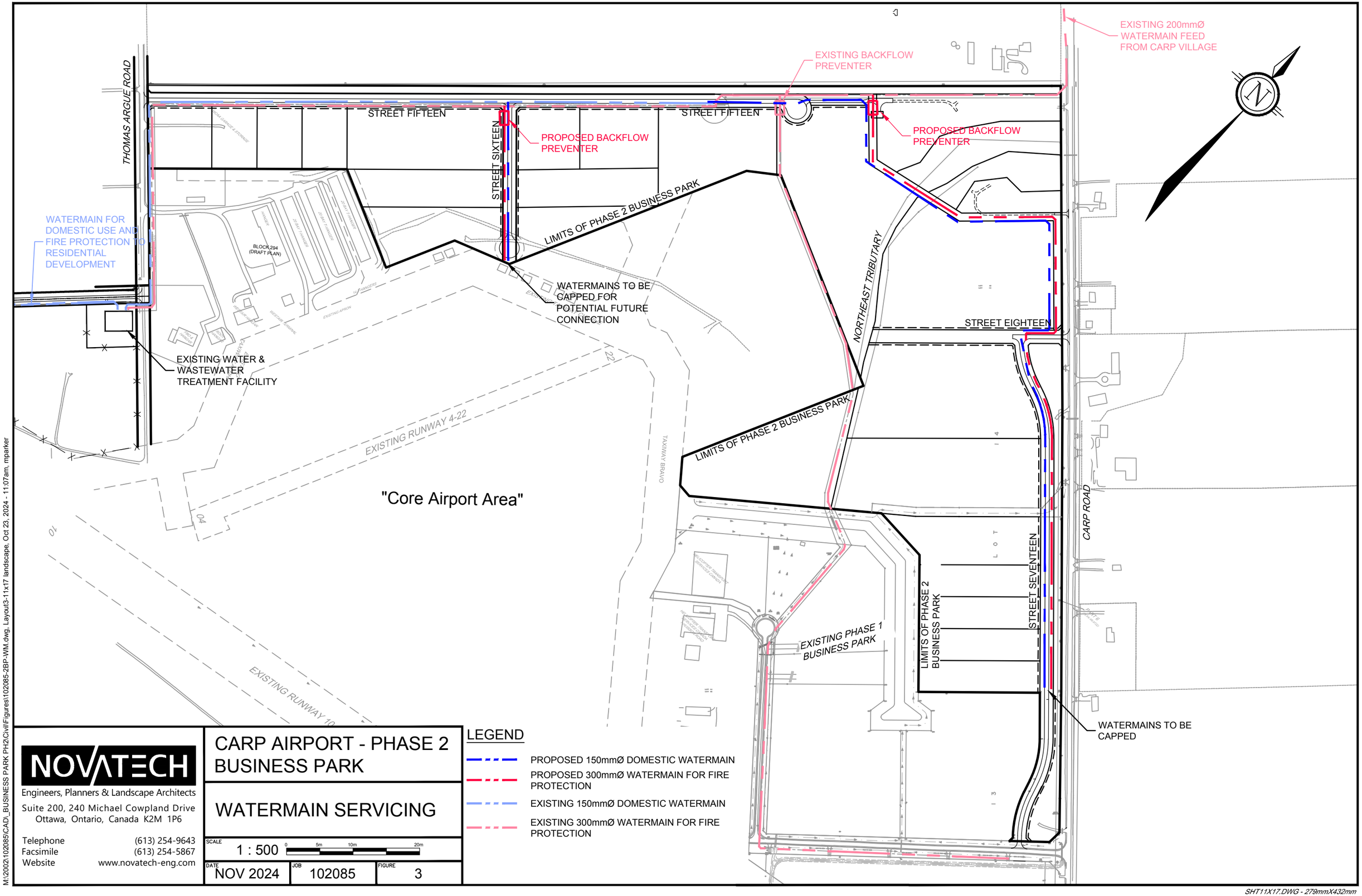
EXISTING CONDITIONS

SCALE 1 : 5000 (0, 50, 100, 150, 200)

DATE NOV 2024 | JOB 102085 | FIGURE 2

SHT11X17.DWG - 279mmX432mm

M:\2002\102085\CAD_BUSINESS PARK PH2\Civil\Figures\102085-2BP-EX.dwg, 11x17 landscape, Nov 12, 2024 - 11:23am, mparker



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CARP AIRPORT - PHASE 2 BUSINESS PARK

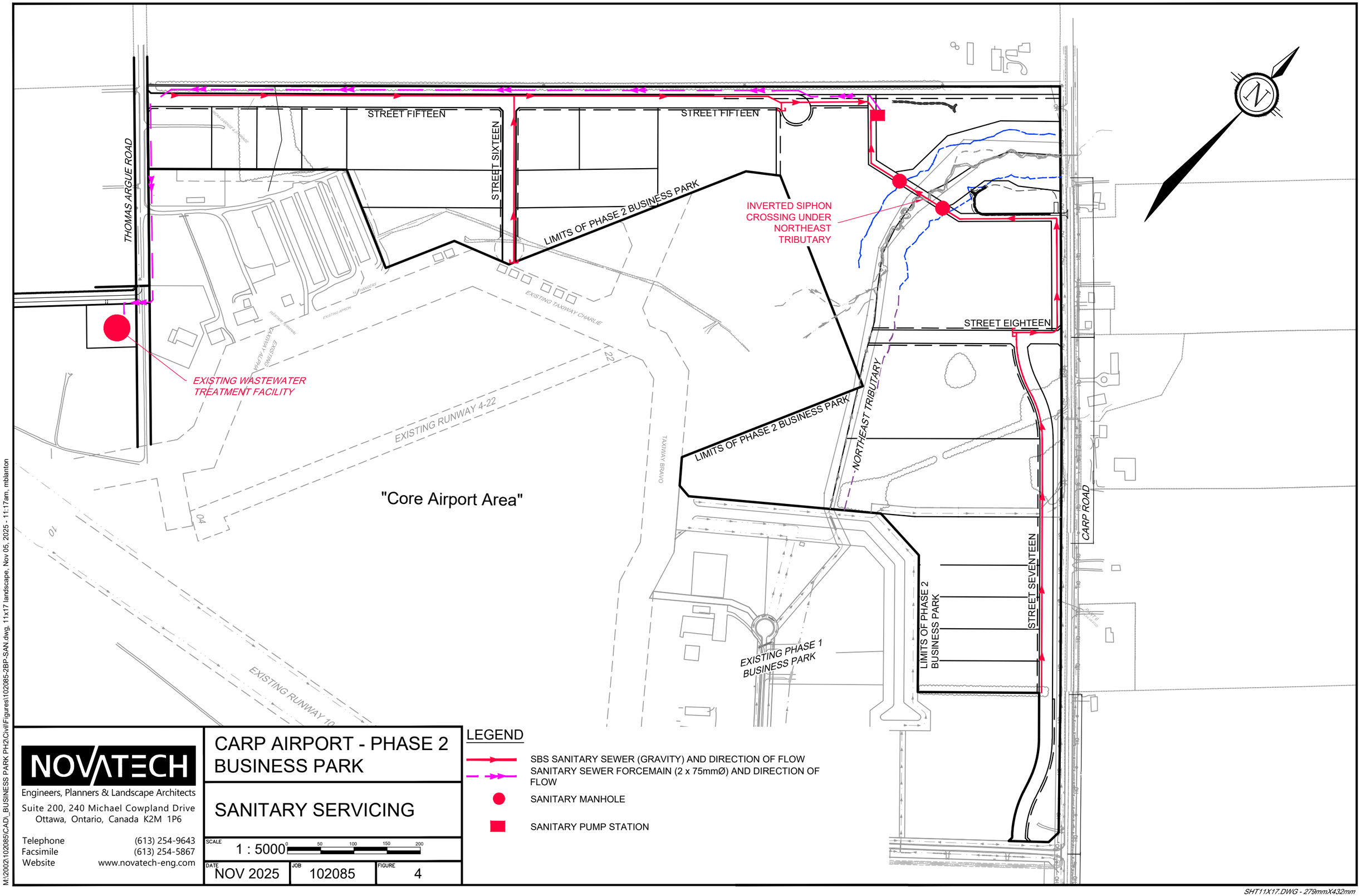
WATERMAIN SERVICING

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE	JOB	FIGURE
NOV 2024	102085	3

LEGEND

- PROPOSED 150mmØ DOMESTIC WATERMAIN
- PROPOSED 300mmØ WATERMAIN FOR FIRE PROTECTION
- EXISTING 150mmØ DOMESTIC WATERMAIN
- EXISTING 300mmØ WATERMAIN FOR FIRE PROTECTION



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CARP AIRPORT - PHASE 2 BUSINESS PARK

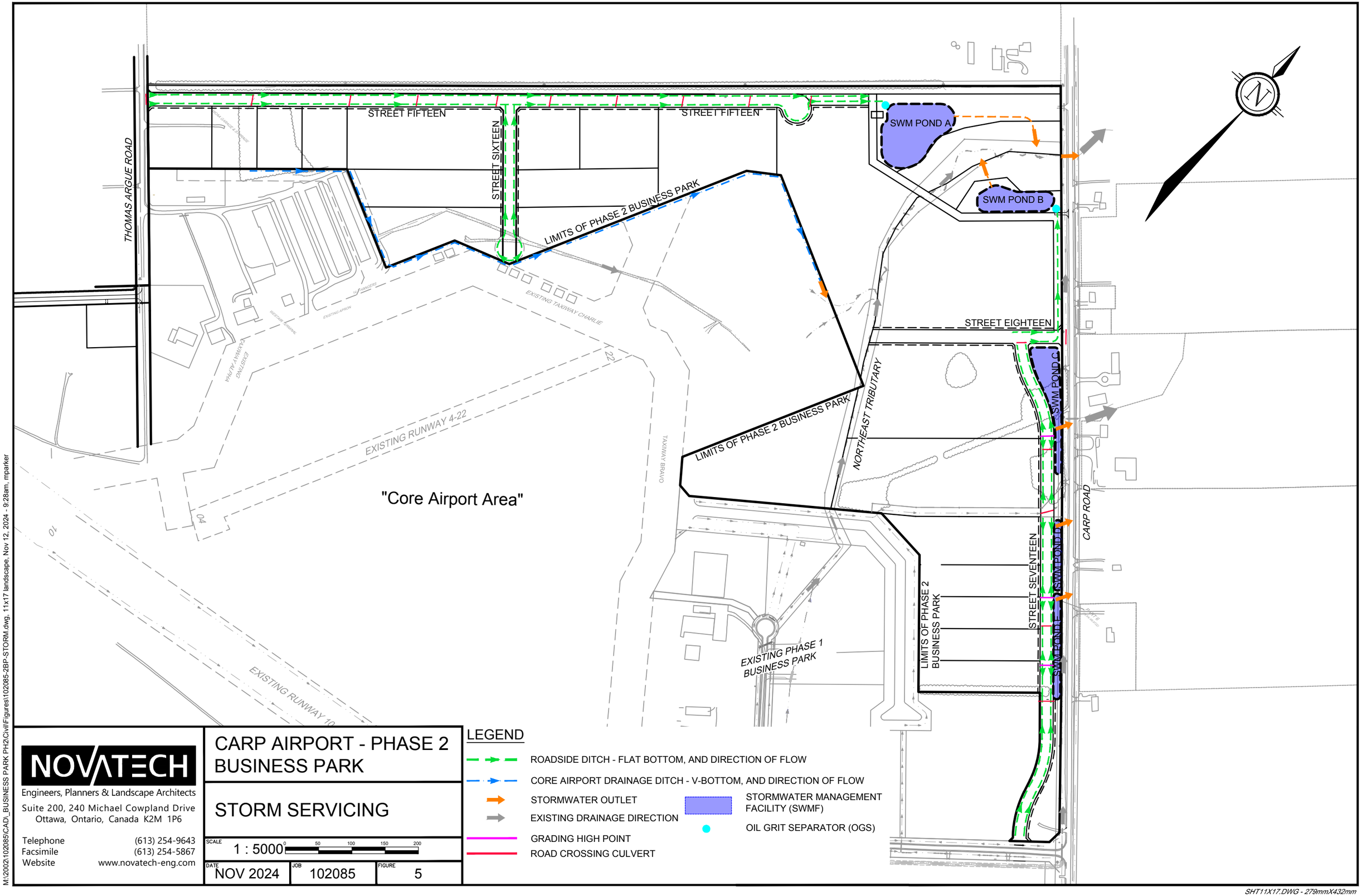
SANITARY SERVICING

SCALE 1 : 5000 (0 50 100 150 200)

DATE NOV 2025 | JOB 102085 | FIGURE 4

LEGEND

- SBS SANITARY SEWER (GRAVITY) AND DIRECTION OF FLOW
- SANITARY SEWER FORCEMAIN (2 x 75mmØ) AND DIRECTION OF FLOW
- SANITARY MANHOLE
- SANITARY PUMP STATION



LEGEND

- ROADSIDE DITCH - FLAT BOTTOM, AND DIRECTION OF FLOW
- CORE AIRPORT DRAINAGE DITCH - V-BOTTOM, AND DIRECTION OF FLOW
- STORMWATER OUTLET
- EXISTING DRAINAGE DIRECTION
- GRADING HIGH POINT
- ROAD CROSSING CULVERT
- STORMWATER MANAGEMENT FACILITY (SWMF)
- OIL GRIT SEPARATOR (OGS)

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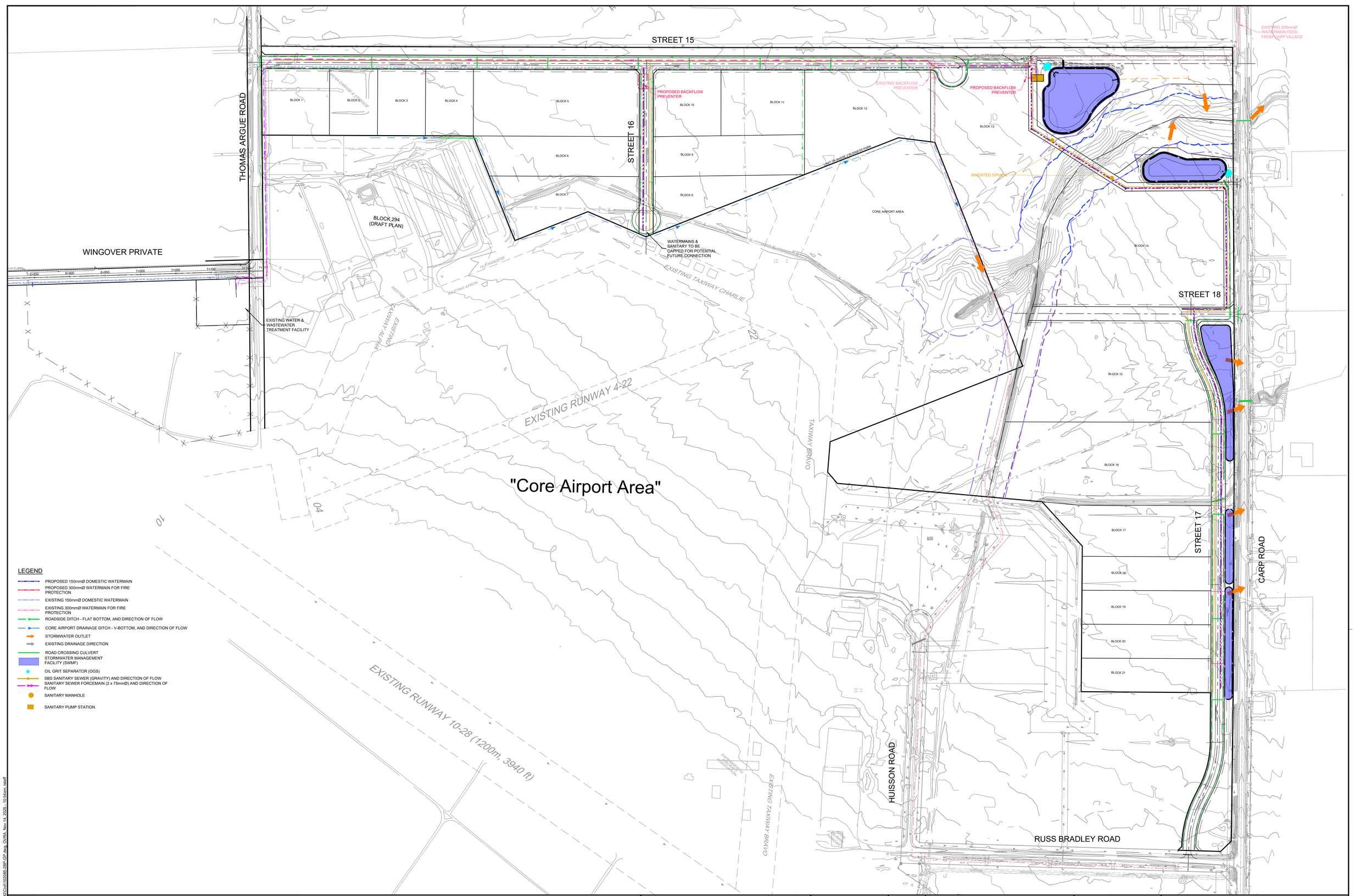
CARP AIRPORT - PHASE 2 BUSINESS PARK

STORM SERVICING

SCALE 1 : 5000 (0, 50, 100, 150, 200)

DATE	JOB	FIGURE
NOV 2024	102085	5



LEGEND

- PROPOSED 150mmØ DOMESTIC WATERMAIN
- PROPOSED 300mmØ WATERMAIN FOR FIRE PROTECTION
- EXISTING 150mmØ DOMESTIC WATERMAIN
- EXISTING 300mmØ WATERMAIN FOR FIRE PROTECTION
- ROADSIDE DITCH - FLAT BOTTOM, AND DIRECTION OF FLOW
- CORE AIRPORT DRAINAGE DITCH - V-BOTTOM, AND DIRECTION OF FLOW
- STORMWATER OUTLET
- EXISTING DRAINAGE DIRECTION
- ROAD CROSSING CULVERT
- STORMWATER MANAGEMENT FACILITY (SWMF)
- OIL GRIT SEPARATOR (OGS)
- SBS SANITARY SEWER (GRAVITY) AND DIRECTION OF FLOW
- SANITARY SEWER FORCEMAIN (2 x 75mmØ) AND DIRECTION OF FLOW
- SANITARY MANHOLE
- SANITARY PUMP STATION

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
1.	REVISED PER COMMENTS (NEW DRAWING)	NOV 14/25	ARM

SCALE
1:2000
1:2000
0 20 40 60 80

DESIGN MJB
CHECKED TGS
DRAWN MJB
CHECKED TGS
APPROVED ARM

FOR REVIEW ONLY

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Facsimile (613) 254-5867
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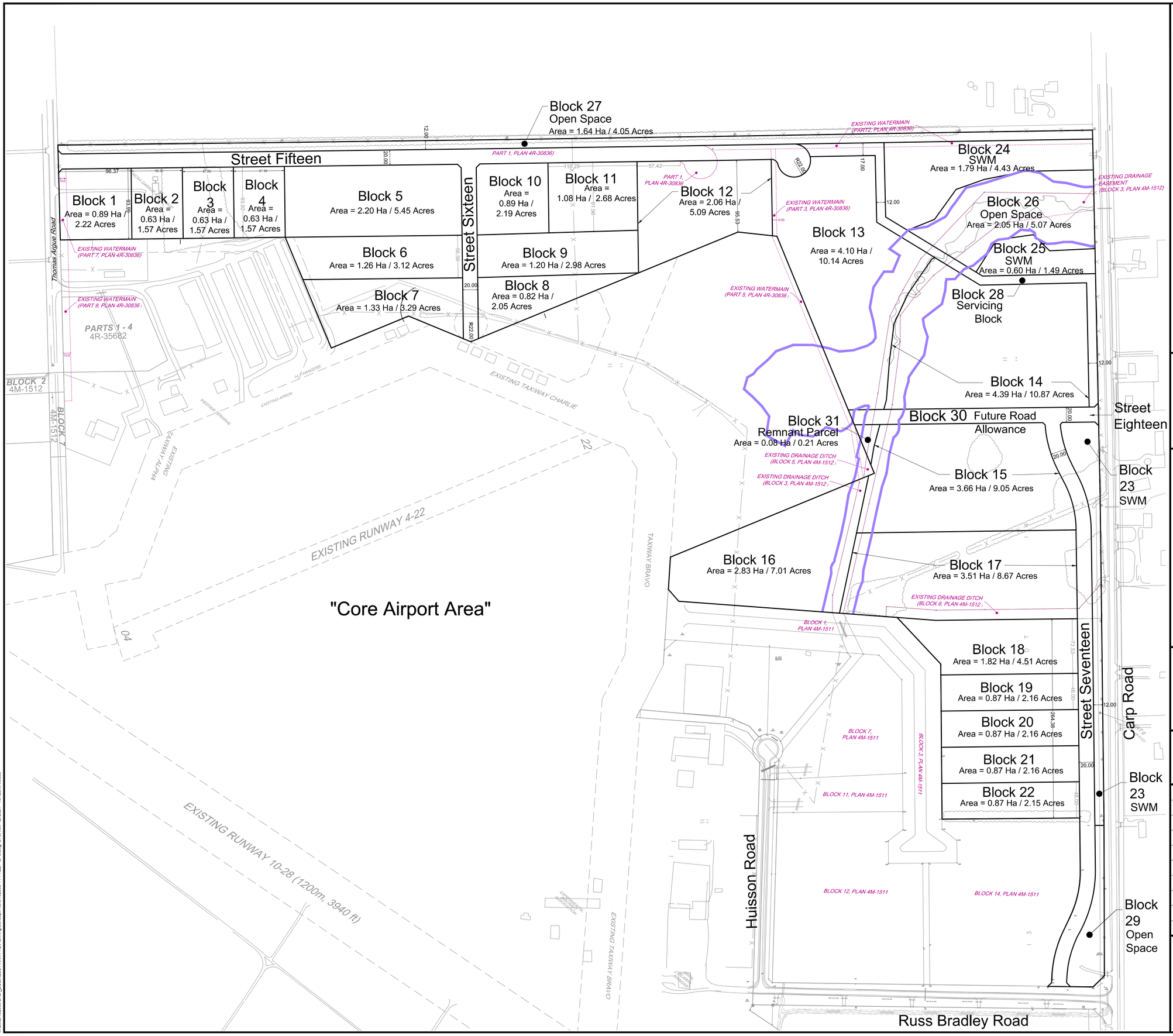
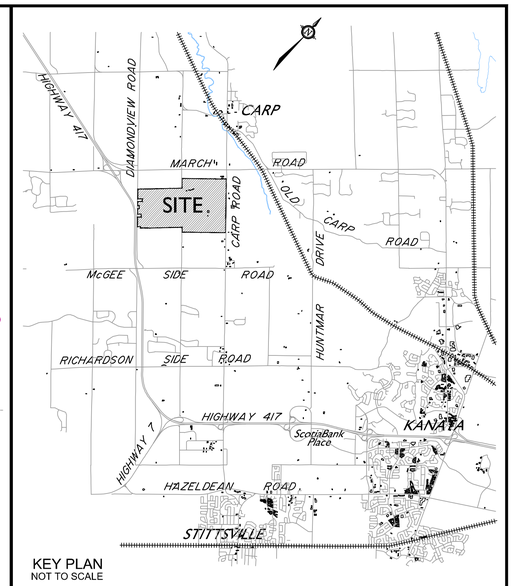
LOCATION
CITY OF OTTAWA
WEST CAPITAL AIRPARK

DRAWING NAME
OVERALL SERVICING FIGURE

PROJECT No. 102085-14
REV REV # 1
DRAWING No. 102085-2BP-GP-OVR





KEY PLAN
NOT TO SCALE

WEST CAPITAL AIRPARK

PHASE 2 BUSINESS PARK CONCEPT PLAN 3

CONCEPTUAL LOTTING

WEST CAPITAL Developments

SCALE

1 : 2000 (0, 40, 80, 120, 160)

No.	REVISION	DATE	BY
6.	UPDATED PER DETAILED DESIGN	NOV 11/24	MV
5.	REVISED PER COMMENTS	FEB 22/24	ARM
4.	REVISED PER COMMENTS	NOV 13/23	MV
3.	ISSUED TO CITY	NOV 08/22	EP
2.	UPDATED PER CLIENT COMMENTS	OCT 20/22	EP
1.	ISSUED FOR DISCUSSION	OCT 18/22	EP

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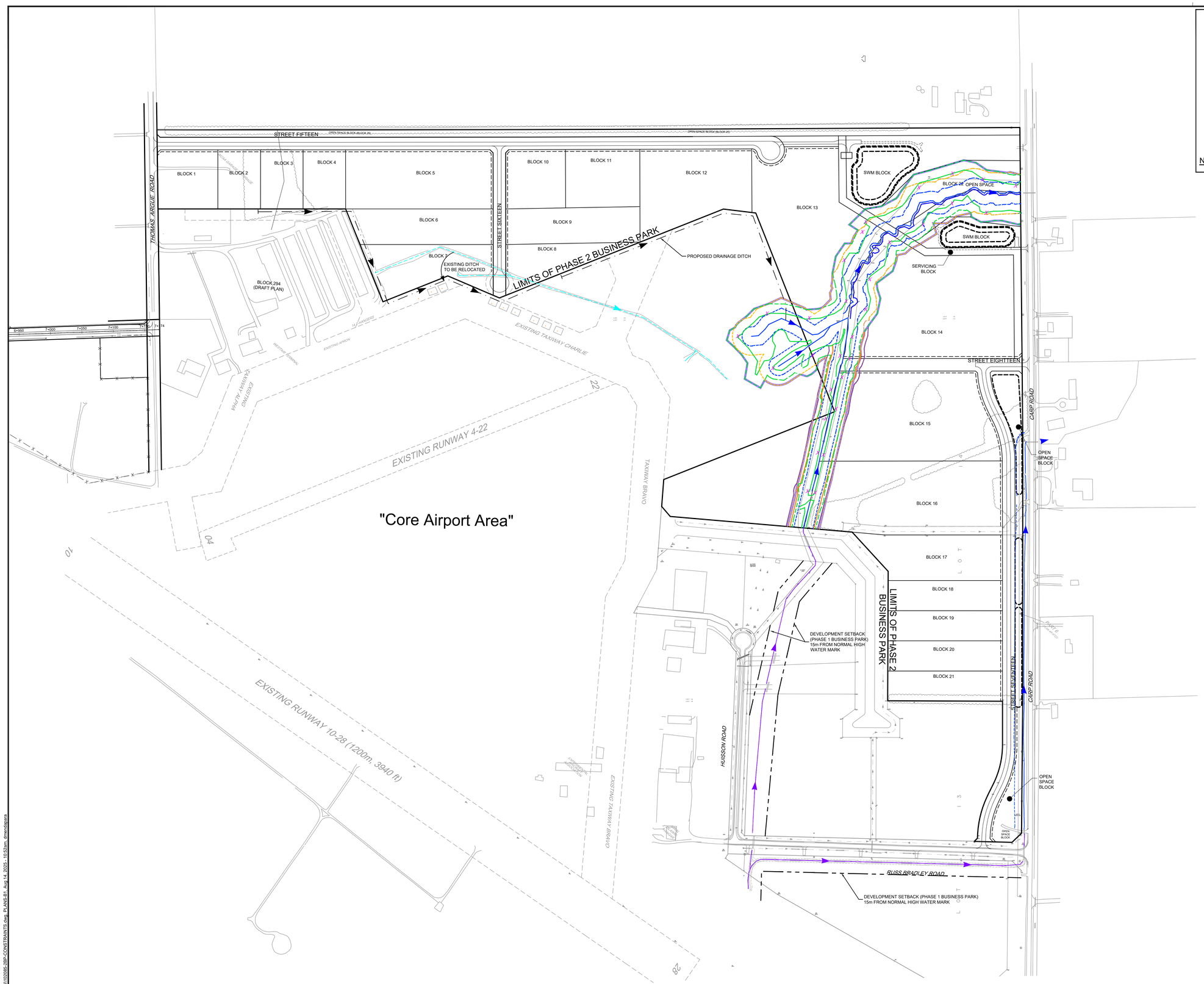
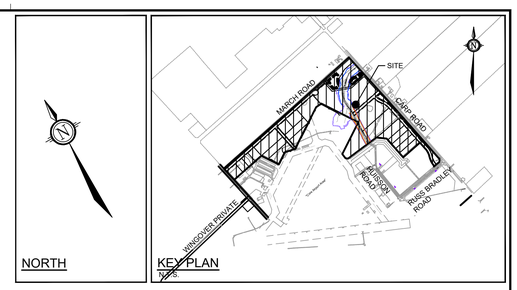
DATE
NOVEMBER, 2024

PROJECT No.
102085

DRAWING No.
102085-14-PH2BP-CP3

M:\2024\102085\CAD_BUSINESS PARK PH2\Planning\Concept Plans\102085-14-PH2BP-CP3.dwg CP3, Nov 12, 2024 - 10:42am, wdoss





LEGEND

- SURVEYED TOP OF BANK (FMW); FISH HABITAT (CIMA+)
- 15.0m SETBACK FROM FMW SURVEYED TOP OF BANK
- 25.0m SETBACK FROM FMW SURVEYED TOP OF BANK
- 30.0m SETBACK FROM FMW SURVEYED TOP OF BANK
- SURVEYED TOP OF SLOPE (FMW)
- 15.0m SETBACK FROM FMW SURVEYED TOP OF SLOPE
- APPROXIMATE LIMIT OF HAZARD LANDS (GEMTEC)
- EROSION ACCESS ALLOWANCE (GEMTEC)
- STAKED STABLE TOP OF SLOPE (GEMTEC)
- CONTRIBUTING TO FISH HABITAT (CIMA+), SURVEYED LOCATION (FMW)
- UPSTREAM TRIBUTARIES (PREVIOUSLY APPROVED SUBDIVISION)
- LIMIT OF DEVELOPMENT / NO TOUCH

SOURCE REFERENCE:
TOPOGRAPHIC SURVEYS:
- *FAIRHALL, MOFFAT & WOODLAND TOPOGRAPHIC SURVEY - November 15, 2023.*
- *GEMTEC TOPOGRAPHIC SLOPE RECONNAISSANCE SURVEY - JANUARY 30, 2024*

NOTE:
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No.	REVISION	DATE	BY
3.	ISSUED FOR REVIEW	AUG 14/25	ARM
2.	ISSUED FOR COORDINATION	OCT 22/24	ARM
1.	ISSUED FOR COORDINATION	AUG 29/24	ARM

SCALE

DESIGN MNP
CHECKED ARM
DRAWN MNP
CHECKED ARM
APPROVED

FOR REVIEW ONLY

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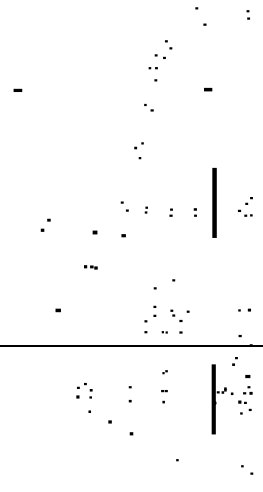
LOCATION
CITY OF OTTAWA
WEST CAPITAL AIRPARK

DRAWING NAME
PHASE 2 BUSINESS PARK
CONSTRAINTS PLAN

PROJECT No. 102085-14
REV REV # 3
DRAWING No. 102085-CON

M:\2025\102085\CAD\...\BUSINESS PARK PH2\Con\102085-2BP-CONSTRAINTS.dwg, PLANS B1, Aug 14, 2025 - 10:53am, dmendasara

Appendix A



File: D07-16-22-0012

CONDITIONS FOR FINAL APPROVAL
1514947 ONTARIO INC.
CARP AIRPORT SUBDIVISION

DRAFT APPROVED AUG 16, 2007
DRAFT APPROVAL EXTENDED FROM AUG. 16, 2010 TO NOV. 16, 2010
DRAFT APPROVAL EXTENDED FROM NOV. 16, 2010 TO NOV.16, 2013
DRAFT APPROVAL EXTENDED FROM NOV. 16, 2013 TO MAY 31, 2014
DRAFT APPROVAL EXTENDED FROM MAY 31, 2014 TO NOV. 16, 2016
DRAFT APPROVED EXTENDED FROM NOV. 16, 2016 TO NOV. 16, 2019
DRAFT APPROVAL EXTENDED FROM NOV. 16, 2019 TO NOV. 16, 2022
DRAFT APPROVAL EXTENDED FROM NOV.16, 2022 TO MAY 16, 2023
DRAFT APPROVAL EXTENDED FROM MAY 16, 2023 TO NOV. 16, 2023
DRAFT APPROVAL EXTENDED FROM NOV. 16, 2023 TO NOV 16, 2026

The City of Ottawa's conditions applying to the approval of the final plan for registration of 1514947 Ontario Inc. (Formerly West Capital Developments) Carp Airport Community (1500 Thomas Argue Road) Subdivision are as follows:

		Agency to Clear
	General	
1.	This approval applies to the draft plan certified by, David W. Woodland, Ontario Land Surveyor, dated December, 2005, revised March 2007 (Sheet 1 and 2) showing 270 single detached lots, 4 townhouse blocks, 3 park blocks, 4 stormwater pond blocks, 9 industrial blocks, 3 conservation blocks, walkways blocks, taxiway blocks, street blocks and blocks for general aviation airport.	
2.	The Owner agrees, by entering into subdivision agreements, to satisfy all requirements, financial and otherwise, of the City of Ottawa, including but not limited to, the provision of roads, installation of services and utilities, and drainage in accordance with City or Ministry of Environment Standards and Specifications all to the satisfaction of the City.	**OTTAWA (Planning)**
3.	Any residential blocks on the final plan shall be configured to ensure that there will generally be no more than 25 units per block.	**OTTAWA (Planning)**
4.	That the Owner acknowledges and agrees that all reports and/or studies required as a result of the approval of the Plan of Subdivision shall be implemented to the satisfaction of the City at the sole expense of the	**OTTAWA (Planning)**

Owner. Further, that the City may require certification by the Owner's Professional consultants that the works have been designed and constructed in accordance with the approved reports, studies, standards, specifications and plans to the satisfaction of the City.

5. Upon approval of the Draft Plan of Subdivision by the City, municipal and private services within the Plan of Subdivision may be installed provided appropriate approvals have been provided financial security, insurance, and a letter of indemnity are posted to the satisfaction of the City. **OTTAWA (Planning)**

6. Prior to any further division of lots or blocks, the City of Ottawa may require an additional agreement to address any new or amended conditions. **OTTAWA (Planning)**

7. The Owner acknowledges and agrees that materials used for marketing purposes shall identify the locations of all applicable collector roads, collector roads designed to transit standards, walkways, parkland, and postal lay-bys. The owner further agrees to inform all prospective purchasers of the locations identified for potential community mailboxes and any associated lay-bys. **OTTAWA (Planning)**

8. The Owner must demonstrate through a detailed phasing plan that the ratio of fifteen (15) units per Communal Hangar will be met. The development of the communal hangars, should they be outside of the core airport area, are subject to Site Plan Approval. The detailed phasing plan shall set forth, in a summary manner, the anticipated timing of the provision of the communal hangars and shall contain a sketch indicating the anticipated locations for such communal hangars. **OTTAWA (Planning)**

9. The Owner agrees that the final design of the communal hangar blocks may, as a result of the Owner's determination, require more land outside of the core airport area in order to meet the 15:1 unit/hangar ratio. If the lands for the communal hangars need to be expanded outside of the core airport area, the Owner agrees that additional lands will be provided within the development area as identified in the plan of subdivision to the satisfaction of the General Manager, Planning and Growth Management. **OTTAWA (Planning)**

10. The Owner acknowledges that development of Block 273 and 293 will be subject to the completion of an aggregate impact study, demonstrating to the satisfaction of the Director of Planning and Infrastructure Approvals, that development of the proposed townhouses will not have any detrimental effect on the ability to remove the sand **OTTAWA (Planning)**

and gravel resource from the licensed pit located adjacent to the development south of Block 293.

11. The Owner acknowledges that prior to registration of the plan of subdivision, the City of Ottawa shall be satisfied that the Municipal Capital Facilities Agreement (MCFA), for both the Residential and Business Park components of the development, has been signed and the development is proceeding in accordance with MCFA to the satisfaction of the director of CREO. **OTTAWA (Planning) (CREO)**

12. Prior to registration the Owner agrees to prepare a fire protection plan to the satisfaction of Fire Protection Services. **Ottawa (Fire)**

Zoning

13. Prior to registration of the plan of subdivision, the City of Ottawa shall be satisfied that the proposed plan of subdivision conforms with the applicable official plan and complies with the applicable zoning by-law approved under the requirements of the Planning Act, with all possibility of appeal to the Ontario Municipal Board exhausted. **OTTAWA (Planning)**

Schools

14. The Owner is required to inform prospective purchasers that school accommodation problems exist in the Ottawa-Carleton District School Board schools designated to serve this development and that at the present time this problem is being addressed by the utilization of portable classrooms and/or by directing students to schools outside their community. **OCDSB**

Highways/Roads

15. The design of all road cross sections, road intersections, including geometric, intersection spacing, grades, the conveyance of the necessary sight triangles and required 0.3 m reserves necessary for lot access control, shall be to the satisfaction of the City of Ottawa. The northern boulevard of Streets 6 and 15, where they abut lands owned by others, will be 12m in width, protecting existing vegetation. **OTTAWA (Planning)**

16. The Owner shall undertake any additional Traffic and Transportation studies subsequent to the Transportation Impact Study submitted with the Draft Plan of Subdivision application as required by the City in order to provide approval for future phases of development within the draft plan of subdivision. **OTTAWA (Planning)**

17.	Any additional Traffic and Transportation studies shall be undertaken by a Professional Engineer with expertise in traffic analysis and shall comply with the City of Ottawa's Transportation Impact Assessment Guidelines (2017). .	**OTTAWA (Planning)**
18.	All streets shall be named to the satisfaction of the City of Ottawa.	**OTTAWA (Planning)**
19.	The Owner agrees that it shall construct streets in accordance with the approved construction phasing plan.	**OTTAWA (Planning)**
20.	The Owner agrees that it shall upgrade Diamondview Road at his sole cost, from the entrance to the subdivision north to March Road as part of the first phase of development to the satisfaction of the City of Ottawa.	**OTTAWA (Planning)**
21.	The Owner shall pay all expenses including but not limited to land acquisition, contract drawings preparation, utility relocations, advertising, road work, construction supervision, as built drawings preparation, and other engineering and administrative costs for the construction of any intersections as recommended by the approved study(s).	**OTTAWA (Planning)**
22.	The Owner agrees to provide access for emergency vehicles at all times by way of providing two (2) separate and distinct accesses to the Subdivision(s); one access may be temporary during construction.	**OTTAWA (Planning)**
23.	The Owner acknowledges and agrees that all construction traffic shall enter the site primarily from Carp Road and where required Thomas Argue Road. Diamondview Road will not be used as a construction access. The Owner further agrees to post signs at appropriate locations on Diamondview Road to indicate that the road is not a construction access route and that all construction traffic should access the subdivision lands from Carp Road (or Thomas Argue as appropriate). The Owner further acknowledges and agrees that he will repair any damage caused to Thomas Argue Road as a result of construction traffic associated with this development.	**OTTAWA (Planning)**
24.	The Owner shall provide temporary turnarounds for all streets terminating at the edge of any construction phase of development, prior to registration, to the satisfaction of the City of Ottawa.	**OTTAWA (Planning)**
25.	The Owner shall be responsible for 100% of the cost and installation of all permanent and temporary street name signs, caution signs and traffic signs that may be required in accordance with City specifications. All signs shall	**OTTAWA (Planning)**

be installed and located to the satisfaction of the City and installed prior to the City's acceptance of the roads within the subdivision.

Sidewalks, Walkways, and Fencing

26.	The Owner shall construct a sidewalk on one side of Street 1, Street 9, and Street 6 and provide a pedestrian link along the north side of Street 6 to connect to the park block subject to the provisions of the MCFA.	**OTTAWA (Planning)**
27.	The Owner shall provide a 1.5 metre high black vinyl coated chain link fence along the rear and side property lines of all lots adjacent to the conservation lands (Blocks 283 and 284) to clearly indicate property limits while minimizing vegetation damage and/or loss. The fence shall be situated within the private lots, 0.3 metres from the property line.	**OTTAWA (Planning)**
28.	The Owner shall submit a Streetscape Planting Plan to the satisfaction of the Director of Planning and Infrastructure Approvals, prior to registration. Such plan shall include as a minimum the provision of one tree per interior lot and two trees per exterior lot. Non-native invasive species shall not be included in the planting plan. Locally appropriate native species are preferred. The Streetscape Planting Plan approval will be subject to Transport Canada regulations.	**OTTAWA (Planning)**
29.	The Owner(s) agree to construct a 1.8 m wide paved pathway on all pathway blocks and to install a fence and a cedar hedge within the pathway block 0.3 metres from the property line.	**OTTAWA (Planning)**
30.	The Owner(s) agree to construct a 1.8 m wide paved pathway through Block 279 to connect Street Five and Street Six.	**OTTAWA**
31.	A pathway block will be introduced between Lots 96 and 97 to connect the pathway within Block 284 (Carp Creek corridor) to Street Eight if appropriate.	**OTTAWA (Planning)**
32.	A pathway will be incorporated into the landscape design of the stormwater management block, Block 330 to connect Block 292 to the pedestrian link to one side of Street Six..	**OTTAWA (Planning)**
33.	Appropriate security fencing (example 2.4M chain link) shall be installed by the Owner as per the MCFA Clause 7.4 j & k.	**OTTAWA (Planning) (CREO)**

34. The owner shall provide environmentally appropriate pathways along the periphery of the Carp Creek corridor adjacent to residential lots. The alignment and design will be determined in consultation with Environmental Sustainability and Parks and Recreation Planning staff, confirmed in the field and be shown on the final landscaping/ streetscaping plan. **OTTAWA (Planning)**

Land/Streetscaping

35. The Owner shall provide 15 metre landscape buffer and fencing to provide screening of the subdivision from Diamondview Road. A landscaped buffer strip with a minimum width of 7 metres and fencing shall be provided behind Lots 151 to 155 to screen the subdivision from the adjacent residence. A landscaped buffer strip with a minimum width of 12 metres and fencing shall be provided behind Lots 5 to 20 and lot 23 and along the northern boundary of the Airport Business Park from the east limit of Street 15 to the west limit of the storm water pond to screen the subdivision from the adjacent agricultural lands. **OTTAWA (Planning)**

36. The Owner shall provide a 12 metre landscape buffer in Block 305 to provide screening of the subdivision from Carp Road. **OTTAWA (Planning)**

37. The Owner acknowledges and agrees to have prepared by a qualified landscape architect such streetscaping and landscaping plans as are necessary to provide locations and details of the following; (All streetscaping and landscaping plans will be subject to Transport Canada regulations. **OTTAWA (Planning)**

1. Perimeter security fencing requirements
2. Fencing and buffer landscaping along Diamondview and Carp Road
3. Fencing along rear and side lots abutting conservation lands
4. All asphalt pathways and associated fencing and hedging requirements
5. One tree per interior lot and two trees per exterior lot on private property (native species preferred, no non-native invasive species allowed).
6. Landscaping of entrance/gatehouse at street one and Diamondview Road
7. Trees/shrubs proposed to be preserved and/or planted to fulfill the requirement for a Final Tree Preservation and Planting Plan (only locally appropriate native species will be accepted in or adjacent to natural areas).
8. Landscaping of the stormwater management block
9. Streetscape lighting design and location.
10. Location of pathways along the periphery of the Carp Creek corridor.

11. Fencing and buffer landscaping between lots 5 to 20, and lot 23 and the adjacent lands to the north, owned by others and will consist of native conifer tree species such as White Spruce or Norway Spruce, and will be planted with appropriate spacing to provide reasonable buffering/screening as required - but will generally be 3 rows staggered in the order of 7 feet on centre.
12. Tree preservation and screening of the boulevard of the north side of street six in the area north of Block 332. Planting will consist of native conifer tree species such as White Spruce, Norway Spruce and Sumac, and will be planted with appropriate spacing to provide reasonable buffering/screening as required.
13. Tree preservation and landscaping of the boulevard on the north side of Street 15 and in the buffer strip along the northern boundary of the Airport Business Park from the east limit of Street 15 to the west limit of the storm water pond adjacent to lands owned by others. Planting will consist of existing trees and planting of native tree and bush species such as White Spruce or Norway Spruce, Ash, Maple, Sumac, Lilac and will be planted with appropriate spacing to provide reasonable buffering/screening as required - but will generally be 3 rows staggered in the order of 7 feet on centre.
14. Conifer trees used to landscape the buffer areas adjacent to lots 5 to 20, and lot 23 and in the boulevard areas adjacent to the soccer fields will generally be nursery stock a minimum of 5ft. tall.
15. Additional landscaped screening will be provided in the 12m wide boulevard in the area of the proposed soccer fields and will consist of native conifer tree species such as White Spruce or Norway Spruce, and will be planted with appropriate spacing to provide reasonable buffering/screening as required - but will generally be 3 rows staggered in the order of 7 feet on centre.

38. The Owner agrees to have prepared by a qualified landscape architect a landscape plan for the Stormwater Management block. Proposed plantings will be subject to Transport Canada regulations and should consist of locally appropriate native species only. **OTTAWA (Planning)**

Parks

39. Block 285 shall be dedicated to the City for parkland purposes as per the MCFA and to the satisfaction of the Corporate Real Estate Office (CREO). The Owners shall grade areas of parkland, where necessary, to match approved adjacent grades, so as to provide a uniform, surface free of debris with sufficient topsoil and grass seed necessary to establish a clean and maintainable surface. No storage of building materials, including granular and topsoil, will be permitted on the park block. A 1.5 **OTTAWA (CREO) (Planning) (Parks)**

metre high black vinyl coated chain link fence shall be constructed along the boundary lines to the satisfaction of the Parks and Recreation Branch.

40. That the Owner acknowledges and agrees that should the dedication of Block 285 not fulfill the requirements of the Planning Act for the dedication of parkland, cash-in-lieu for the balance of parkland dedication will be required at the time of registration. **OTTAWA (Planning) (Parks)**

41. The Owner shall, as part of the required works, and at no cost to the City, provide storm, water, and sanitary services and hydro service to the property line of all park blocks. **OTTAWA (Planning) (Parks)**

42. Pedestrian Access Subject to the approval of the Condominium Corporation, the Owner shall provide a pedestrian access easement along Blocks 163, 182, 184, 186 and 193, Plan 4M-1593 and Block 83 on Draft Plan (1B-2) for the purposes of connecting the residential lots to Block 1, Plan 4M-1512. A stone dust pathway shall be designed (1.8m to satisfy the city's accessibility guidelines) and constructed to the approval of the General Manager, Planning, Real Estate and Economic Development. **OTTAWA (Planning) (Parks)**

43. Public Park Access Subject to the approval of the Condominium Corporation, the Owner shall provide a public access easement for the purpose of accessing the park at Block 1, Plan 4M-1512. The location of the public access easement shall be over Block 2, Plan 4M-1512. Accordingly, the park shall be designed to permit vehicular access from Block 2, Plan 4M-1512 only. No public access to the park shall be permitted along private roads, and the Owner shall erect signs to this effect. **OTTAWA (Planning) (Parks)**

Environmental Constraints

44. The Owner acknowledges and agrees that the implementation of the subdivision shall be in accordance with the recommendations found in the report "Integrated Environmental Review", (Muncaster Environmental Planning, as Revised January, 2007). **OTTAWA (Planning)**

45. The Owner(s) shall implement the mitigation and monitoring measures stated in the report "Integrated Environmental Review", (Muncaster Environmental Planning Inc., as Revised January, 2007) and any addendums to this report to the satisfaction of the City which include but are not limited to: **OTTAWA (Planning)**

- The limits of the natural areas and buffers will be clearly delineated with silt and construction fencing prior to any grading or other site alterations;

- Removal of woody vegetation will not occur between April 1st and August 15th to protect breeding birds (unless otherwise directed in writing by Environment Canada, Transport Canada, OR unless a breeding bird survey, conducted within 5 days of removal, indicates no breeding birds are present);
- No in-stream works within the watercourse will occur between March 15th and June 30th;
- Protection of trees and root system during blasting.
- Monitoring of mitigation measures for the construction and the post-construction operation periods.

46. The Owner(s) shall prepare to the satisfaction of the City, a Conservation Handbook describing the natural attributes of the subdivision and the importance of good stewardship practices to ensure the long-term health and sustainability of Carp Creek and the retained woodlands. Topics to be discussed include but are not limited to reducing environmental impacts from common household activities, (e.g., water conservation, merits of minimizing impervious surfaces, yard waste disposal, chemical use and storage, etc.), activities specific to this subdivision (ie airplane storage)avoiding human-wildlife conflicts, and recommendations of locally appropriate native species for landscaping. The Handbook shall be distributed to all new homeowners. **OTTAWA (Planning)**

47. The Owner shall provide interpretative signs for the trails within the "Carp Creek corridor" to indicate the sensitive nature of the creek and woodlands in the subdivision. The signage will indicate that motorized vehicles will not be permitted in the natural areas or passive parklands. Content and locations of signs will be to the approval of the City. **OTTAWA (Planning)**

48. The Owner shall dedicate at no cost to the City Blocks 283, 284 and 333 in healthy and restored condition to the City as "conservation lands". The Owner shall pay the land transfer tax associated with the dedication of these lands if applicable. **OTTAWA (Planning)**

49. The Owner(s) shall undertake to protect all existing vegetation on site; subject to the provisions of Transport Canada; until such time as a "Detailed Tree Planting and Conservation Plan" is approved by the City and the vegetation communities and specimen trees which are to be conserved are appropriately marked with snow fencing on-site. Particular attention shall be paid to the preservation of the hedgerow within business park development blocks 300, 301 and 302. The "Detailed Tree Planting and Conservation Plan" shall be prepared by a qualified landscape architect and shall be integrated with the "Grading and Drainage Plan", the "Integrated Environmental Review", and the **OTTAWA (Planning)**

"Stormwater Site Management Plan and Erosion and Sediment Control Plan".

50. All proposed landscape plantings for the site shall consist of locally appropriate native species where possible. Only native species shall be planted in or adjacent to natural areas. Non-native invasive species (including but not limited to Norway Maple, Amur Maple, Black Locust, Scots Pine and all non-native Honeysuckles) shall not be included in the planting plan. **OTTAWA (Planning)**

51. At the completion of each construction phase of the development, and prior to the commencement of each subsequent construction phase, the Owner shall ensure that these conditions of approval and associated mitigation measures as described in the IER have been implemented to the satisfaction of the City of Ottawa. Any necessary amendments to these conditions or mitigation measures, based on observed effectiveness or opportunities for improvement, shall be documented and approved by the City of Ottawa. **OTTAWA (Planning)**

52. The developer acknowledges that development within any watercourse or stream valley may require a Development, Interference with Wetlands, and Alteration to Shorelines and Watercourses permit (O.Reg.153/06) from Mississippi Valley Conservation prior to construction. **MVC**

53. For Carp Creek, the minimum setback to development shall be the greater of: 15m from top of bank; 30m from normal high water; a 3:1 slope up from a 15m erosion allowance from the edge of the main channel of the watercourse. These setbacks shall be shown on a Grading Plan, and can not extend into the lot limits. **OTTAWA (Planning)**

54. For watercourses where fish habitat is present as described in the Integrated Environmental Review, dated January 2007, with the exception of Carp Creek, the setback to development shall be 15m from the existing top of bank. The final plan for registration shall show a block comprised of the tributary in the north-east corner and the above noted 15 m setback to be dedicated to the City for conservation purposes. **OTTAWA (Planning)**

55. Subject to Transport Canada rules and regulations, the non-vegetated riparian corridors are to be restored to a vegetated state per the Carp River Watershed - Subwatershed Study, Section 8.2.3.1. Within the required Tree Preservation and Planting Plan provide a planting plan for each phase of work, showing the plantings that are to be undertaken adjacent to or within each phase of development of the site. **OTTAWA (Planning)**

Archaeology

56. The Owner shall adhere to the procedures of the "Contingency Plan for the Protection of Archaeological Resources in Urgent Situations" as approved by the Ministry of Citizenship, Culture and Recreation in the Archaeological Resource Potential Mapping Study of the City of Ottawa. **OTTAWA (Planning)**

Geotechnical

57. The Owner shall submit a geotechnical report prepared by a qualified Geotechnical Engineer, licensed in the Province of Ontario, containing detailed information on Geotechnical matters and recommendations pertaining to, but not limited to the following: **OTTAWA (Planning)**

- the existing sub-surface soils and groundwater conditions,
- slope stability and erosion protection, in addition to any building construction requirements adjacent to unstable slopes,
- design and construction of underground services,
- design and construction of internal roadways,
- design and construction of any retaining walls or slope protection,
- design and construction of engineered fill,
- design and construction of building foundations, and
- site dewatering

58. The Owner shall retain the services of the previously referred to Geotechnical Engineer to ensure that the recommendations of the report are fully implemented. The owner shall provide the Director, Infrastructure Services, with certificates of compliance issued by the engineer with respect to each of the matters referred to in the preceding condition. **OTTAWA (Planning)**

Stormwater Management

59. Prior to the commencement of any construction phase of this subdivision (roads, utilities, any off site work, etc.) the owner shall: **OTTAWA (Planning)**

- have an Erosion and Sediment Control Plan prepared by a Professional Engineer in accordance with Current Best Management Practices,
- have such a plan approved by the City of Ottawa, and
- provide certification to the City of Ottawa through a Professional Engineer that the plan has been implemented.

60. Prior to registration, or prior to an application for a Certificate of Approval for any stormwater works (whichever comes first), the Owner shall prepare a Stormwater Site Management Plan in accordance with **OTTAWA (Planning) MVC**

the details of the report Conceptual Stormwater Management Plan (revised February 2007, Novatech Engineering) and any addendums to this report to the satisfaction of the City. The Stormwater Site Management Plan shall identify the sequence of its implementation in relation to the construction of the subdivision and shall be to the satisfaction of the City of Ottawa and the Mississippi Valley Conservation Authority.

61. On completion of all stormwater works, the Owner agrees to provide certification to the City of Ottawa through a Professional Engineer that all measures have been implemented in conformity with the Stormwater Site Management Plan. **OTTAWA (Planning)**

62. That the Owner acknowledges and agrees that no work shall commence within any construction phase of the Plan of Subdivision until such time as the storm water management measures and plan to implement the measures has been approved by the City and any other approval agency. **OTTAWA (Planning)**

63. The owner shall monitor water quality (including temperature) of the stormwater facility per the Ministry of Environment Certificate of Approval requirements and as outlined in the Stormwater Site Management Plan to the satisfaction of the City of Ottawa as required. The monitoring strategy should incorporate details of location of the sampling, type of sampling, frequency and a parameter list consistent with the needs of the receiving aquatic environment. Tests shall be completed by an independent and approved laboratory and the results shall be made available in an approved format and timing acceptable to the City of Ottawa and Mississippi Valley Conservation Authority as required. **OTTAWA (Planning)**

64. The Owner shall design, and construct the stormwater management facility(s) at its sole cost. The Owner agrees that the stormwater management ponds will be, maintained and operated by the city per the Municipal Capital Facilities Agreement. The storm sewer system will be maintained and operated by the city per the Municipal Capital Facilities Agreement. Private underground services and other utilities will be located outside the travelled portion of the road. The cross-section for the roadways will be designed to the satisfaction of the Director of Planning and Infrastructure Approvals. **OTTAWA (Planning)**

65. The Owner agrees to undertake testing of all existing wells in an area of influence from the development to establish a baseline for existing water quality and quantity for each well. The testing and recommendations will be provided by a professional engineer with expertise in this area. Testing will take place before, during and after the completion of each phase of development. The Owner also agrees **OTTAWA (Planning)**

that if results indicate a negative impact on the well due this development , then the Owner agrees to take required steps to provide the impacted landowner with water quality and quantity of equal or greater quality and quantity. Copies of the results of all testing will be provided to the City.

66. That the Owner agrees to grade, landscape and install erosion control measures on any portion of the proposed lots or adjacent lands in the possession of the Owner which have been filled or where the natural vegetation has been disturbed which, in the opinion of the City, is creating a nuisance, hazard and/or eyesore. **OTTAWA (Planning) MVC**

67. The stormwater outlet(s) shall be designed and constructed to ensure minimal amount of disturbance to Carp Creek. The mitigation measures should be clearly documented in the Stormwater Site Management Plan to be prepared for the subdivision. **OTTAWA (Planning) MVC**

68. The targets set in the Carp River Watershed - Subwatershed Study for Aquatic Habitat (Table 8.2.2) for Type 2 Fish Communities shall be met for Carp Creek and the south-east tributary of the Carp River (up stream of the Carp Road ditch), including 25C maximum water temperature. The targets for Type 3 Fish Communities shall be met for the north-east tributary of the Carp River, including 30C maximum water temperature. In addition, discharge to any of the stream corridors requires 70% TSS removal, per MOE Stormwater Management Planning and Design Manual. Pre-development flow rates off of the site shall not be exceeded by post-development flow rates. A detailed Stormwater Management Plan, including the design and expected performance of all required stormwater management facilities, shall be provided for approval. **OTTAWA (Planning)**

Fisheries

69. Wording shall be included in the subdivision agreement and in all offers of purchase and sale for Lots adjacent to watercourses informing the owners that the purpose of the setbacks is to protect fish habitat and that the natural vegetation within the setback be retained. **OTTAWA (Planning)**

70. The developer acknowledges that Carp Creek and the tributary to the Carp River in the north east of the property and the tributary to the Carp River in the south west corner of the property are fish habitat. As such, any Harmful Alteration, Disturbance, or Destruction of Fish Habitat will require an Authorization from the Department of Fisheries and Oceans. This would include, but is not limited to, culvert placement, open cut service crossings, and channel realignment.

71. Any modifications required to the subdivision design and/or layout will be at the sole expense of the proponent. **OTTAWA (Planning) MVC**

Urban Servicing

72. The Owner shall prepare a development phasing and a construction phasing plan to the satisfaction of the General Manager, Planning and Growth Management. These phasing plans shall also setout appropriate phasing for water, sanitary and stormwater facilities. **OTTAWA (Planning)**

73. The Owner shall be responsible for the provisions of the following private services, at its cost, to the satisfaction of the City, and/or the Province; **OTTAWA (Planning)**

1. Watermains
2. Sanitary Sewers
3. Storm Sewers
4. Roads
5. Street Lights
6. Sidewalks
7. Landscaping
8. Street name, traffic and caution signs
9. Stormwater management facilities
10. Pump Station (water servicing)
11. Sanitary Treatment Facility

74. The Owner shall, prior to connecting additional businesses to the existing low volume non-residential water supply, submit an Existing Conditions Assessment Report to the satisfaction of the General Manager, Planning and Growth Management. **OTTAWA (Planning)**

75. The Owner shall, prior to providing new services to businesses on the Airport Lands currently using existing privately-owned sanitary services and/or the low volume non-residential water supply, submit a Decommissioning Plan for the existing services of that business to the satisfaction of the General Manager, Planning and Growth Management. **OTTAWA (Planning)**

76. The Owner shall submit detailed servicing plans, prepared by a Civil Engineer licensed in the Province of Ontario, to the Director of Planning and Infrastructure Approvals. All servicing designs will be to the satisfaction of the Director of Planning and Infrastructure Approvals. **OTTAWA (Planning)**

77. The Owner shall submit detailed grading and drainage plans for this subdivision, prepared by a Civil Engineer licensed in the Province of Ontario, to the Director of Planning and Infrastructure Approvals. **OTTAWA (Planning)**

78. The Owner shall have competent professional engineering inspection personnel on site at all times during the period of construction to supervise the Works and the Director, Infrastructure Services shall have the right at all times to inspect the installation of the Works. Should it be found in the sole opinion of the Director, Infrastructure Services that such personnel are not on site or are incompetent in the performance of their duties, or that the said Works are not being carried out in accordance with approved plans or specifications and in accordance with good engineering practice, then the Director, Infrastructure Services may order all work in the project to be stopped. **OTTAWA (Planning)**

79. The Owner shall obtain such permits as may be required from Municipal, or Provincial authorities and shall file copies thereof with the Director of Planning and Infrastructure Approvals. **OTTAWA (Planning)**

80. The Owner shall prepare, entirely at his cost, a hydraulic network analysis of the proposed water plant within the plan of subdivision and as it relates to the existing infrastructure. Said report shall be submitted to the City of Ottawa for review and approval as part of the water plant design submission. **OTTAWA (Planning)**

81. The Owner shall prepare a design report that reflects the phasing of water needs and the impact on the Carp Village Water Plant. The design of the water service along Carp Road must be consistent with this design report. This design must be prepared to the satisfaction of the Director of Planning and Infrastructure Approvals. Capacity beyond Phase 1 is subject to the approval of the Director of the Planning, Real Estate, and Economic Development Department. **OTTAWA (Planning)**

82. The Owner acknowledges and agrees If the Carp Airport development is to be served by a communal water system utilizing the water supply system in the Village of Carp as a source, then the communal water system will include the watermain from the Village to the limit of the Carp Airport as part of the MCFA for the Airport or under such other agreement as the City may require. **OTTAWA (Planning)**

83. The Owner shall enter into a Responsibility Agreement for operation and maintenance of the Sanitary Treatment Facility, and Water treatment and/or Pump Station. **OTTAWA (Planning)**

84. The plan shall be revised to include a block for the sanitary treatment facility once the land requirements are known. **OTTAWA (Planning)**

Building Permits

85. The Owner shall not demand of the City to issue, nor shall anyone claiming title from it or under its authority, demand of the City to issue, **OTTAWA (Planning)**

one or more building permits to construct any building or other structure on any lot or block on the Site until:

- applicable roads in the Subdivision have been connected to a public street;
- the Municipal Capital Facilities Agreement (MCFA) and a Responsibility Agreement for both the Residential and Business Park components of the Development has been signed and the Development is proceeding in accordance with the MCFA and Responsibility Agreement;
- a fire protection plan has been approved by Fire Protection Services and access for fire fighting equipment has been provided to each building by means of a street or private roadway, which shall be designated and posted to the satisfaction of the General Manager, Planning and Growth Management and the Emergency and Protective Services Department;
- the access route has been surfaced with concrete, asphalt, or Granular "A" base capable of permitting accessibility under all climatic conditions and is continuously maintained so as to be immediately ready for use by the Emergency and Protective Services Department vehicles or any other vehicles in the event of an emergency;
- the City has approved, where applicable, a site plan, a grading plan and a design plan for the proposed building or structure and;
- the water distribution system has received all applicable Certificates of Approval from MOE;
- the Sanitary Waste Treatment Facility has received all applicable Certificates of Approval from MOE;
- Storm Water Management Pond has received all applicable Certificates of Approval from MOE;
- a development phasing plan and a construction phasing plan have been approved by the Director of Planning and Infrastructure approvals and securities consistant with the phasing plan have been posted with the City of Ottawa to the satisfaction of the Director of Planning and Infrastructure approvals.

Utilities

86. Such easements and maintenance agreements which may be required for electrical, gas, water, sewer, telephone and cablevision facilities, shall be provided and agreed to by the Owner, to the satisfaction of the appropriate authority; and that the Owner shall ensure that these

Rogers Cable TV, Bell Canada, Enbridge Consumers

easement documents are registered on title immediately following registration of the final plan; and the affected agencies are duly notified. **Gas, Hydro One Networks**

87. Where the relocation or removal of any existing on-site/adjacent utility facility, including water, sewer, electrical, gas, telephone and cablevision, is required as a direct result of the development, the Owner shall pay the actual cost associated therewith to the satisfaction of the appropriate utility authority. **Rogers Cable TV, Bell Canada, Enbridge Consumers Gas, Hydro One Networks**

88. The Owner shall coordinate the preparation of an overall utility distribution plan showing the location (shared or otherwise) and installation, timing and phasing of all required utilities (on-grade, below-grade or above-grade), including on-site drainage facilities and streetscaping)--such location plan shall be to the satisfaction of all affected authorities and shall consider their respective standards and specification manuals, where applicable. **Rogers Cable TV, Bell Canada, Enbridge Consumers Gas, Hydro One Networks**

Purchase and Sale Agreements and Covenants on Title

89. A warning clause will be inserted into the subdivision agreement and in all offer of purchase and sale agreement, to read as follows: **OTTAWA (Planning)**

- The Purchaser acknowledges the sensitive environmental nature of Carp Creek, and adjacent woodlands , the importance of good stewardship practices to ensure the health and sustainability of these natural features and that it is the City's intent to protect the Carp Creek corridor and woodlots and leave them in a natural state for the long term.

- The Purchaser undertakes and agrees that composters, garden plots, yard waste pile or other disturbances will not occur on City owned land.

- The Purchaser undertakes and agrees that all roof leaders will be directed to pervious areas such as lawns to enhance ground water recharge.

- The Purchaser acknowledges that occupancy cannot be permitted until sanitary water and storm services are in operation to the satisfaction of the City

- The Purchasers acknowledge that the lots are located in an agricultural area and may therefore be subjected to noise, dust, odours and other activities associated with an agricultural area.

- The Purchasers acknowledge that they are purchasing land that is part of an active airport and as owners of land in an active airport they are subject to Transport Canada rules and regulations established for the operation of the Airport and will develop, and operate and contribute to the life cycle and operational costs of the Airport as per the terms of the MCF Agreement.

- The Purchasers acknowledge that they must enter into a Common Elements Agreement for all commonly owned components of the subdivision as described in the Common Elements Condominium Agreement. The City, through the Municipal Capital Facilities Agreement, will maintain surface facilities within the Right Of Way including and limited to the pavement, curbs, sidewalks, signage and street lights.

90. Any person who, prior to draft approval, entered into a purchase and sale agreement with respect to lots or blocks created by this subdivision, shall be permitted to withdraw from such agreement without penalty and with full refund of any deposit paid, up until the acknowledgment noted below. The owner shall provide the City of Ottawa Legal Services Branch an acknowledgment from those purchasers who signed before the plan was draft approved, that the plan had not received draft approval by the City of Ottawa. The owner agrees that the purchase and sale agreements signed prior to draft approval shall be amended to contain a clause to notify purchasers of this fact. **OTTAWA (Planning) OTTAWA (Legal)**

Financial Requirements

91. The Owner acknowledges that some of the works of the Subdivision are eligible for financial contributions from the City's Development Charge Reserve Fund pursuant to the Development Charge Bylaw. Such contributions are to be determined and agreed to by the City, prior to the commencement of the associated works or as agreed to by the City. The Owner agrees to enter into any agreements that may be required pursuant to the Development Charge Bylaw. **OTTAWA (Planning)**

92. The Owner shall pay all expenses including but not limited to land acquisition, contract drawings preparation, utility relocations, advertising, road work, traffic signal lights installation, construction supervision, as built drawings preparation, and other engineering and **OTTAWA (Planning)**

administrative costs for the modification of the intersection(s) and installation of an additional traffic lane(s) along the affected roads as per the updated Transportation Impact Study and shall provide financial security in the amount of 100% of the cost of implementing the required works.

93. Prior to registration of the plan of subdivision, the City of Ottawa shall be satisfied that the processing fee has been paid in full. **OTTAWA (Planning)**

94. Prior to registration, the Owner acknowledges and agrees that a charge to recover a contribution towards that portion of the water system in the Village of Carp that would serve the Carp Airport and not greater than the cost to service lands in the village will apply, to the satisfaction of the Director of Planning and Infrastructure Approvals. **OTTAWA (Planning)**

Survey Requirements

95. The plan of subdivision shall be referenced, where possible, to the Horizontal Control Network, in accordance with the City requirements and guidelines for referencing legal surveys. **OTTAWA (Surveys)**

Closing Conditions

96. The owner shall inform the purchaser after registration of each lot or block of the development charges that have been paid or which are still applicable to the lot or block. The applicable development charges shall be as stated as of the time of the conveyance of the relevant lot or block and the statement shall be provided at the time of the conveyance. The statement of the owner of the applicable development charges shall also contain the statement that the development charges are subject to changes in accordance with the *Development Charges Act, 1997* and the *Education Development Charges Act.* **OTTAWA (Legal)**

97. At any time prior to final approval of this plan for registration, the City of Ottawa may, in accordance with Section 51 (44) of the Planning Act, R.S.O. 1990, amend, delete or add to the conditions and this may include the need for amended or new studies. **OTTAWA (Legal)**

98. The City of Ottawa Subdivision Agreement shall state that the conditions run with the land and are binding on the owner's, heirs, successors and assigns. **OTTAWA (Legal)**

99. Prior to registration of the plan of subdivision, the City of Ottawa is to be satisfied that Conditions 1 to 102 have been fulfilled. **OTTAWA (Planning)**

100. If the plan of subdivision has not been registered by November 16, 2026 the draft approval shall lapse pursuant to Section 51 (32) of the Planning Act, 1990. Extensions may only be granted under the provisions of Section 51 (33) of said Planning Act prior to the lapsing date. **OTTAWA (Planning)**

SCHEDULE "I"

MAINTENANCE OF WORKS/FACILITIES

West Capital Airpark (Carp Airport)
Residential – Phase 1

In accordance with Section 7.6 of the Carp Airport Municipal Capital Facility and Development Agreement, the City is responsible for maintenance, repair and replacement of the works/facilities listed below:

1) **Roads including roadside ditches, grassed boulevards, sidewalks, curbs, culverts, streetlights, line painting, street name signs and traffic control signs:** Blocks 172 and 175 (Albert Boyd Private), Block 173 (Sopwith Private), Blocks 174, 180, 181 and 182 (Wingover Private), Blocks 159 and 176 (Chandelle Private) (from the cul-de-sac to Block 178 (Tailslide Private) and Block 178 (Tailslide Private).

2) **Storm Sewer Network including storm sewers, ICD's, road catchbasins, storm manholes):** Along Blocks 160, 169, 170, 171, 185, 197 and 201; Blocks 172 and 175 (Albert Boyd Private), Block 173 (Sopwith Private), Blocks 174, 180, 181 and 182 (Wingover Private), Blocks 159 and 176 (Chandelle Private) and Block 178 (Tailslide Private)

3) **Rearyard catachbasins and leads:**
   - Parts of Lots 1 and 2 being Parts 2, 3, 4 and 5 on an approved draft reference plan
   - Parts of Lots 5 and 6 being Parts 10, 11, 12 and 13 on an approved draft reference plan
   - Parts of Lots 45 and 46 being Parts 71, 72, 73 and 74 on an approved draft reference plan
   - Parts of Lots 33 and 34 being Parts 55, 56, 57 and 58 on an approved draft reference plan
   - Parts of Lots 25 and 26 being Parts 39, 40, 41 and 42 on an approved draft reference plan
   - Parts of Lots 22 and 23 being Parts 32, 33, 34 and 35 on an approved draft reference plan
   - Parts of Lots 69 and 70 being Parts 99, 100, 101 and 102 on an approved draft reference plan
   - Parts of Lots 74 and 75 being Parts 108, 109, 110 and 111 on an approved draft reference plan
   - Parts of Lots 31 and 32 being Parts 49, 50, 51 and 52 on an approved draft reference plan
   - Part of Lot 28 being Parts 114 and 115 on an approved draft reference plan

4) **Stormwater Management Pond:**
   - Block 157 - Stormwater Management Pond East
   - Block 156 - Stormwater Management Pond West

5) **Outlet Ditches:**
   - Blocks 163, 184, 186 and 193

6) **Stone Trench:** Beneath roadside ditches in Block 178 (Tailslide Private).

7) **Asphalt Walkways (including culverts, grassed areas and fence):**
   - Blocks 161, 162, 164, 165 and 170

8) **Stonedust Pathways including culverts:**
   - Along Blocks 174, 180, 181 and 182 (Wingover Private) from the west limit of the park to the bend in the road
   - Through Blocks 166, 167, 168 and 199

The City will be maintaining the roads in the Residential Phase 1 to the Class 5A standard as described in the City of Ottawa Maintenance Quality Standards for Roadway, Sidewalks and Pathways approved by Council and any future amendments.

Appendix B

NOVATECH
Engineers, Planners & Landscape Architects

M E M O R A N D U M

DATE: **MARCH 3, 2023**

TO: **ADAM BROWN, JEFF OSTAFICHUK, KEVIN HALL**

FROM: **SUSAN GORDON**

RE: **CARP AIRPORT – PHASE 2 BUSINESS PARK**
WATER ALLOCATION FRAMEWORK
NOVATECH FILE: 102085-14

CC: **JOHN RIDDELL, GREG WINTERS – NOVATECH**
ASHLEY MAKSIMOVIC – BLG
ANDREW WILDEBOER, JOSH BLOKHUIS - WEST CAPITAL DEVELOPMENTS

This memo has been prepared in response to the City's request to provide a water allocation framework, for water supply from the Village of Carp, to support the detailed design and registration of the Phase 2 Business Park. These lands have been Draft Approved.

The following provides background information and a high-level summary of the various agreements and mechanisms that could be put in place, which Novatech has prepared with input from Borden Ladner Gervais, for West Capital Developments

1.0 Background

The original allocation of water supply to West Capital Developments for the Carp Airport development is 1.0ML/day, as indicated in the Municipal Responsibility Agreement (MRA). Based on the Class Environmental Assessment (2008, Stantec EA) and Novatech's Hydraulic Network Analysis (Report R-2014-172, November 2015), this suggests that the 1ML/day allocated in the MRA is for the average day, not the maximum day.

Payment is being made for this allocation and the expectation is that the full 1.0ML/day will be made available to West Capital, in time. Payment is collected by the City at each residential building permit, and is in addition to the City water bill that is paid for water usage. Payment for the water supply allocation started with the first building permit application and continues.

The 2008 Stantec EA was prepared to consider the upgrades to the existing water system required to support the projected growth within the Village of Carp and at the Carp Airport. For development at the Carp Airport, a maximum day demand of 1.46 ML is allocated in the 2008 EA.

Currently 0.5ML of maximum day flow is being made available to the development. Previous analysis submitted to the City (with the Draft Plan revision application for Phase 1B-2 residential) shows that this amount is sufficient for the residential draft approved lands.

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

The City has indicated that an additional 0.2ML of maximum day flow would be made available when the short term upgrades to the water supply system in the Village are complete. This amount would be suitable for the Phase 2 Business Park needs, as discussed below.

There would be a total of 0.70ML of maximum day flow available for the Carp Airport private water system. This will serve both residential and commercial demands.

Water supply from the Village is controlled via a flow restrictor located in an underground chamber at Carp Road and Rivington Street in the Village of Carp. It is currently set to supply 0.5ML maximum day flow. The flow restrictor would be adjusted to the higher 0.7ML total maximum day flow when the planned short term upgrades to water supply system in the Village are complete.

2.0 Agreements

Subdivision Agreements, Site Plan Agreements and Notices on Title:

- Given that the City would not be involved in the monitoring of the water allocation, the Subdivision Agreement could include language confirming that the City is not responsible for the specific allocations to each of the blocks and that if the quantity/allocation becomes deficient in the future the City will bear no responsibility for such deficiencies (similar to current water quantity/quality clauses in connection with private wells).
- To ensure that purchasers and owners are aware of the water allocation limitations, separate notices would be registered on title confirming that the City takes no responsibility for the water being allocated to each of the commercial blocks and any future deficiencies in the quantity of water being supplied to individual blocks.

Municipal Responsibility Agreement

- The current MRA provides for a maximum of 1 ML average day flow being allocated to the private supply system, which is more than would be required to service the Draft Approved lands.

Common Elements Condominium Agreement

- The proposed arrangement would be outlined and identified in the Condominium Agreement to ensure that the condominium corporation would be fully responsible for such measures and that they would be carried forward into the Declaration on registration.

Condominium Disclosure/Declaration:

- The condominium documents would specify that the consumption of water by the commercial owners would be metered and would need to detail how the metering and usage would operate (i.e. whether the corporation would perform meter readings or a separate third party meter reading company would be engaged).
- The condominium documents would also outline the specific water allocation restrictions that would be imposed on the phase of development and that consumption on a per block basis would be monitored by the condominium.

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Agreements of Purchase and Sale:

- West Capital would identify the maximum allocation with each of the purchasers contractually through their Agreements of Purchase and Sale. This would be the subject of negotiation with purchasers to determine and agree upon the specific allocation for each block, with the cumulative allocation to the purchasers not to exceed to overall maximum water allocation.

3.0 Mechanisms

Water Supply Allocation:

- Currently 0.5ML of maximum day flow is being allocated to the residential units (Phases 1A, 1B, 2A and 2B) and 0.2ML of maximum day flow for the Phase 2 Business Park. Phase 1 of the Business Park is on individual private wells.
- The allocation for each commercial unit would be assigned with each Purchase and Sale Agreement, as described above.
- The attached Water Demand Scenarios summary (December 6, 2022) shows the water use for various commercial use Scenarios, demonstrating that 0.2ML of maximum day flow would be sufficient to service the Phase 2 Business Park.

Water Supply Control:

- Water supply from the City is controlled via a flow restrictor located in an underground chamber at Carp Road and Rivington Street in the Village of Carp. It is currently set to supply 0.5ML of maximum day flow.
- The flow restrictor would be adjusted to the higher 0.7ML total maximum day flow when the planned short-term upgrades to water supply system in the Village are complete.
- Distribution of water to users within the development is the responsibility of the Common Elements Condominium Corporation.

Water Use Monitoring:

- The Drinking Water System Operator regularly monitors the bulk water storage tank flows (inflow and outflow), which would be blended residential and commercial.
- Individual private water meter readings for the residential units are currently conducted by a third party on behalf of the condominium corporation. The condominium corporation pays the bulk water bill then in turn charges the individual residential units. The condominium corporation, therefore, has individual use data and can identify excess water use.
- Similarly, the condominium corporation would monitor the individual water use in the Business Park via individual water meter readings. Given that commercial water use can be more variable than residential, the condominium corporation would regularly compare the water use to the allocated amount.

Water Use Reporting:

- West Capital would notify the City of the amount of water allocated to each Block, along with a tracking of the cumulative amount allocated. This would be provided to the City as each Purchase and Sale agreement is executed.
- Regular reporting of water use would be provided to the City and would include the following.
    - The bulk water draw from the City (the total residential use and the total business park use): Bulk water draw would be the amount recorded at the meter (at the connection in the Village), by the City, and noted on the water bill the City issues to the condominium corporation.

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- Residential water use: Residential water use would be the amount metered, presented as a combined residential value, compared to the 0.5ML maximum day allocation, on a percentage occupancy basis. This would provide the City with transparency with regard to the actual water demand versus the expected use.
- Business Park water use: Business Park water use would be the amount metered individually, compared to the individual allocation, totaled, and compared to the 0.2ML maximum day allocation.

4.0 Summary

In summary

- The 0.2ML/day additional water supply that has been allocated to the Carp Airport Development, when the short-term upgrades are completed to the Village of Carp water supply system, would be sufficient to service the Phase 2 Business Park.
- Agreements and mechanisms could be put in place to address water allocation.

Attachment:
Water Demand Scenarios summary (Novatech, December 6, 2022)

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Novatech Project #: 102085
Project Name: Carp Airport - Phase 2 Business Park
Date: 6-Dec-22

Engineers, Planners & Landscape Architects

Water Allocation and Monitoring Framework
Water Demand Scenarios

Available Allocation from Village of Carp after short term upgrades by City		
Max Day	**0.2**	**ML/day**
Average Day Based on 1.5 Max Day factor	0.1333	ML/day
Average Day Based on 1.5 Max Day factor	**133,333**	L/day

Total Development Block Area	40.5	ha
Prorated Average Day Allocation per hectare	3292	L/ha/day

	Estimated Design Demand						Remaining Allocation	
	Employee Based Demand [1]			Other Demand			Average Day	
	Area (ha)	# of Employees	SubTotal (L/day)	Area (ha)	Unit [2] (L/day)	SubTotal (L/day)	Total (L/day)	% of Available
Scenario 1								
20 employees/ha	40.5	810	60,750				**72,583**	**54%**
Scenario 2								
30 employees/ha	40.5	1,215	91,125				**42,208**	**32%**
Scenario 3								
40 employees/ha	40.5	1,620	121,500				**11,833**	**9%**
Scenario 4								
20 employees/ha	39.5	790	59,250					
200 Guest Hotel [3]				1.0	225	45,000	**29,083**	**22%**
Scenario 5								
20 employees/ha	40.5	810	60,750					
50 Restaurant Seats					125	6,250	**66,333**	**50%**
Scenario 6								
20 employees/ha	32.5	650	48,750					
50 Restaurant Seats					125	6,250		
800 Office workers	8.0	75	60,000				**24,583**	**18%**

Notes:

[1] Assumes typical use having large warehouse/storage areas, low number of employees onsite and no process water.

[2] Unit Demand based on the following:

225 L/day per hotel guest [3]
125 L/day per restaurant seat
75 L/day per employee

[3] Existing hotel room review: Sandman Airport 201 rooms, Brookstreet 276, Hilton downtown 175, Hilton Kanata 101

West Capital Airpark, Carp, ON
Phase 2 Business Park
Novatech File#: 102085

November 18, 2024

Phase 2 Business Park Hydraulic Network Analysis Design Brief

Reference Documents/Information:

- Hydraulic Network Analysis and Water Storage Facility Design Report [Novatech, R-2015-118, revised July 16, 2015]

Introduction

This Hydraulic Network Analysis Design Brief has been prepared in support of the Draft Approval Plan of Subdivision for the proposed Phase 2 Business Park. The hydraulic analysis uses EPA NET modelling software to confirm that the proposed water distribution networks at West Capital Airpark can provide the domestic and fire flow demands required to service the Phase 2 Business Park. This approach is consistent with the Hydraulic Network Analysis and Water Storage Facility Design Report (Novatech, 2015).

The watermain network for the West Capital Airpark development is connected to the existing Village of Carp municipal watermain which supplies maximum day demand to the private watermain system. The private water system consists of an existing water storage facility and existing watermains which are private communal systems owned, operated, and maintained by a condominium corporation as common elements.

Water Availability

The Carp Airport Subdivision currently receives a maximum day flow of 0.5ML/day from the Village of Carp. The existing residential subdivision (Phase 1A, 2A, 1B-1, and 1B-2) currently accounts for all of the 0.5ML/day flow. The City of Ottawa has indicated that upon completion of short-term upgrades to the Village of Carp water system, which are underway, the West Capital Airpark would receive an additional maximum day flow of 0.2ML/day, for a total of 0.7ML/day.

The additional maximum day flow of 0.2ML/day would be allocated to the Phase 2 Business Park. This would allow for approximately 1,777 employees, or a maximum day demand of approximately 6,240L/day per net developable hectare. The Water Demand Scenarios summary (October 31, 2024), attached, shows the water use of various commercial use scenarios, demonstrating that 0.2ML of maximum day flow would be sufficient to service the Phase 2 Business Park.

Proposed Development

The proposed Phase 2 Business Park consists of 21 blocks intended for industrial / commercial use. The individual blocks within the Phase 2 Business Park would each be allocated a maximum daily flow. Developers/purchasers of the individual blocks would be required to limit domestic water demands to meet their allocated flow.

Water Distribution Network

The water distribution network used in this hydraulic analysis model consists of a reservoir at the existing water storage facility and a watermain network with 150mm diameter pipes for domestic use and 300mm diameter pipes for fire protection. The Overall Watermain System Drawing (102085-WMSYS) is included as an attachment for reference.

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Hydraulic Analysis

The hydraulic analysis for the two watermain distribution networks (one domestic, one fire protection) were done separately since the systems would operate independently and do not connect to one another. Both distribution networks would draw water from the existing water storage facility, which currently includes one existing water storage tank. The existing water storage tank provides peak hour storage and the required fire protection volume (63.08 L/s for 30 minutes).

Based on the allocated flow of 0.2 ML/day to the Phase 2 Business Park, a preliminary allocated flow on an area basis for each block is shown in **Table 1** below.

Table 1: Preliminary Allocated Flows

Block Number	Net Developable Area (ha)	Preliminary Allocated Flow (L/day)
1	0.90	5,620
2	0.64	3,996
3	0.64	3,996
4	0.64	3,996
5	2.21	13,800
6	1.26	7,868
7	1.37	8,554
8	0.87	5,432
9	1.21	7,555
10	0.89	5,557
11	1.09	6,806
12	2.06	12,863
13	2.99	18,670
14	3.64	22,729
15	3.35	20,918
16	3.29	20,543
17	1.48	9,241
18	0.87	5,432
19	0.88	5,495
20	0.88	5,495
21	0.87	5,432
Total	**32.00**	**200,000**

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The following design parameters outline in **Table 2** were used in the development of the hydraulic model.

Table 2: Model Design Parameters

Parameter	Design Value
Maximum Day Domestic Demand (Allocated from Village of Carp)	200,000 L/day
Average Day Domestic Demand (Max Day / 1.5)	133,333 L/day
Peak Hour Domestic Demand (Avg Day * 2.7)	4.17 L/s
Fire Flow Demand (1)	63.08 L/s
Hydraulic Head at Reservoir (2)	141m to 168m

Notes:

(1) The fire flow of 63.08 L/s is consistent with the original Hydraulic Network Analysis (Novatech, 2014).

(2) The hydraulic head at the water storage tank (tank elevation + pump head), will vary in each scenario, summarized below.
   a. Average Day Demand:
      i. 141m – represents the minimum hydraulic head required at the storage tank to maintain a minimum pipe pressure of 40psi.
      ii. 160m – represents the maximum allowable hydraulic head at the storage tank to maintain maximum pipe pressure of 80psi.
   b. Peak Hour Demand: 141m – represents the minimum hydraulic head required at the storage tank to maintain a minimum pipe pressure of 40psi.
   c. Fire Flow Demand: 168m – Based on the fire flow parameters used in the original Hydraulic Network Analysis (Novatech, 2014).

A Water Demand Summary is attached which outlines the domestic demands assigned to each node in the model.

The following scenarios were modelled to ensure that the required pressures were met at each node.

1) Average Day Demand (High Pressure) Scenario – Pressure at each node to be less than 56m (80psi) when average day demand is assigned to each node.
2) Peak Hour Demand (Low Pressure) Scenario – Pressure at each node to be greater than 28m (40psi) when peak hour demand is assigned to each node.
3) Maximum Day Demand Plus Fire Flow (Lowest Pressure) Scenario – Pressure at each node to be greater than 14m (20psi). (1)

   Note (1): Since the domestic use watermain and fire protection supply watermain are separate networks, the standard maximum day plus fire flow scenario does not apply. To represent the lowest pressure scenario in the hydraulic model, the fire flow demand of 63.08 L/s was applied at the farthest node in the system.

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Modelling Results

The modelling results are summarized in **Table 3** below for the three pressure condition scenarios.

Table 3: Model Results Summary

Scenario	City of Ottawa Pressure Requirement	Pressure Provided
Average Day Demand (High Pressure)	Less than 56m	55.30m
Peak Hour Demand (Low Pressure)	Greater than 28m	28.59m
Fire Flow Demand (1)	Greater than 14m	46.46m

Notes:
(1) As mentioned in the previous section, the fire flow demand, applied to the farthest node of the fire protection supply watermain, represents the lowest pressure scenario in the hydraulic model.

The modelling results confirm that the required pressures are achieved in each scenario. The modelling results tables are attached for reference.

Conclusion

The existing water storage facility and the proposed water distribution networks can provide adequate domestic and fire flow demands to the Phase 2 Business Park of the Carp Airport development.

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Attachments

1. EPA NET Model Schematic (October 2024)
2. Water Demand Summary (October 2024)
3. EPA NET Modelling Results (October 2024)
4. Water Demand Scenarios (November 2024)
5. Watermain System Sketch (102085-WMSYS, November 2024)

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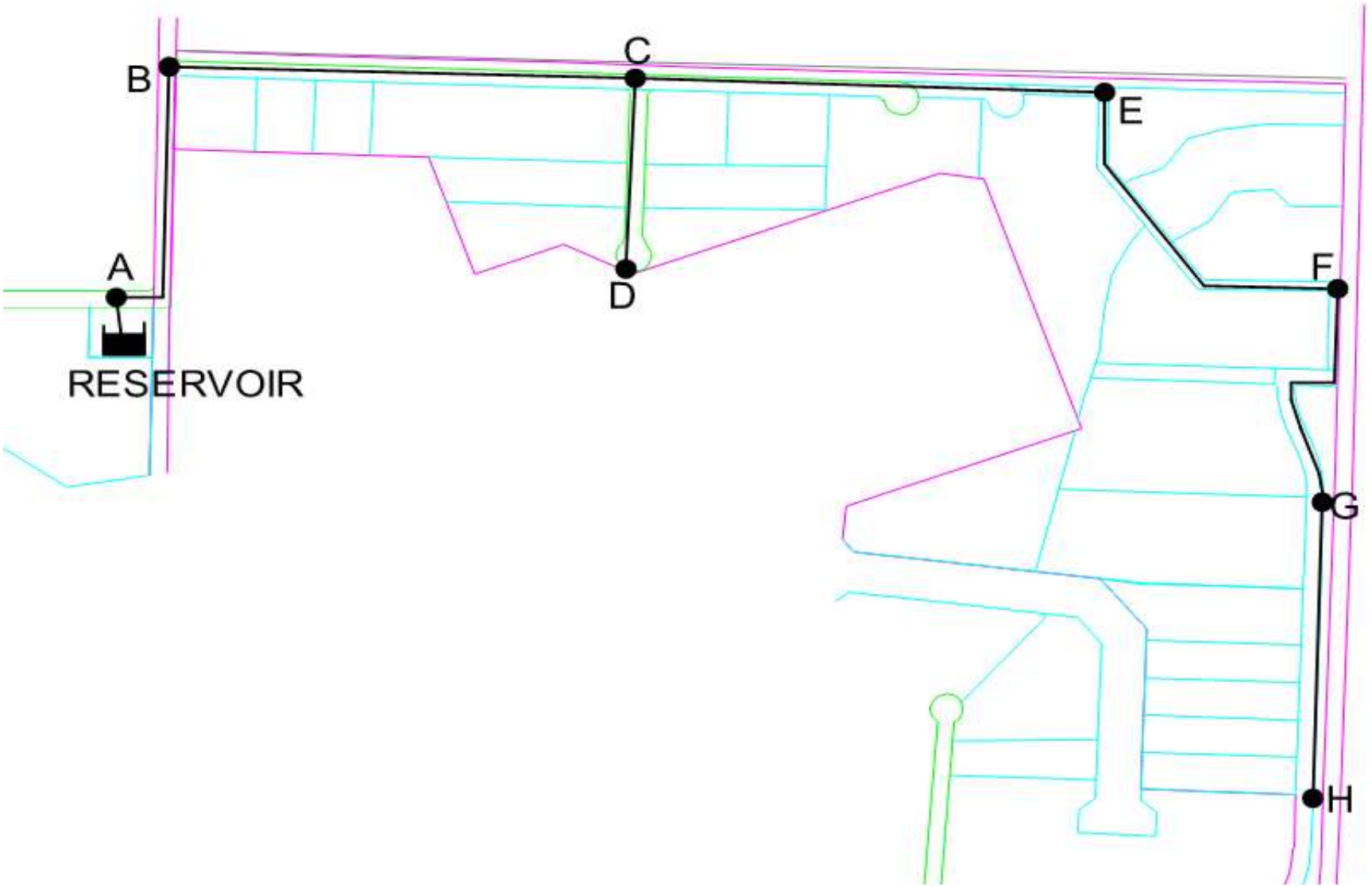
CARP AIRPORT
PHASE 2 BUSINESS PARK
EPA NET MODEL SCHEMATIC

JOB NO. 102085
DATE: NOVEMBER 2024



Water Demand Design Sheet

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 102085
Project Name: Carp Airport - Phase 2 Business Park
Date: 10/29/2024
Input By: MNP
Reviewed By: ARM
Drawing Reference: 102085-GP7,102085-GP8, 102085-GP9

Legend: Input by User | No Input Required | Calculated Cells →

Reference: Ottawa Design Guidelines - Water Distribution (2010 and TBs)
MOE Design Guidelines for Drinking-Water Systems (2008)
Fire Underwriter's Survey Guideline (2020)
Ontario Building Code, Part 3 (2012)

all System = NO

Location	Total Water Demand												
Node	Industrial / Commercial / Institutional (ICI) Input & Average Demand						Maximum Day & Peak Hour Demand						
	Indust. Area		Comm. Area	Inst. Area	Other Area	ICI Average Day Flow Demand	Maximum Day Demand			Peak Hour Demand			
	Light (ha.)	Heavy (ha.)	(ha.)	(ha.)	(m^2)	(L/s)	Res. Peaking Factor	ICI Peaking Factor	Max Day Flow Demand (L/s)	Res. Peaking Factor	ICI Peaking Factor	Peak Hour Flow Demand (L/s)	
JUNC A			0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	
JUNC B			0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	
JUNC C			5.03			0.24	0.00	0.00	0.37	0.00	0.00	0.66	
JUNC D			5.60			0.27	0.00	0.00	0.41	0.00	0.00	0.74	
JUNC E			6.14			0.30	0.00	0.00	0.45	0.00	0.00	0.81	
JUNC F			3.64			0.18	0.00	0.00	0.27	0.00	0.00	0.48	
JUNC G			3.35			0.16	0.00	0.00	0.24	0.00	0.00	0.44	
JUNC H			8.27			0.40	0.00	0.00	0.60	0.00	0.00	1.09	
Totals	**0.00**	**0.00**	**32.03**	**0.00**	**0.00**	**1.56**	**0.00**	**0.00**	**2.34**	**0.00**	**0.00**	**4.21**	

Demand Parameters

Institutional / Commercial / Industrial				
Indust.		Comm.	Inst.	Other Use
Light	Heavy			
L/gross ha/day				L/m^2/day
35,000	55,000	28,000	28,000	5
10,000	17,000	17,000	17,000	3

ICI Peaking Factors	Max Day (x Avg Day)	Peak Hour (x Avg Day)
	1.50	2.70

Water Demand Design Sheet

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Engineers, Planners & Landscape Architects

Minimum Pressure During Average Day (AVDY) Conditions

Novatech Project #: 102085
Project Name: Carp Airport - Phase 2 Business Park
Date: 10/29/2024
Input By: MNP
Reviewed By: ARM
Drawing Reference: 102085-GP7,102085-GP8, 102085-GP9

Legend:	
Input by User	No Input Required
Acceptable (40psi - 80psi)	
Acceptable w/ PRV (81psi - 100psi)	
Unacceptable (< 40psi or > 100psi)	

Note: Hydraulic modelling completed using EPANET 2.0.

Node	Elevation (m)	Demand (L/s)	Total Head (m)	Pressure (m)	Pressure (psi)
Resvr 1	141.00	-1.55	141.00	0.00	0
Junc A	112.30	0.00	140.98	28.68	40.8
Junc B	111.00	0.00	140.88	29.88	42.5
Junc C	109.60	0.24	140.72	31.12	44.3
Junc D	110.60	0.27	140.72	30.12	42.8
Junc E	106.70	0.30	140.64	33.95	48.3
Junc F	104.30	0.18	140.61	36.32	51.6
Junc G	107.80	0.16	140.59	32.80	46.6
Junc H	109.80	0.40	140.58	30.79	43.8

Water Demand Design Sheet

NOVATECH
Engineers, Planners & Landscape Architects

Maximum Pressure During Average Day (AVDY) Conditions

Novatech Project #: 102085
Project Name: Carp Airport - Phase 2 Business Park
Date: 10/29/2024
Input By: MNP
Reviewed By: ARM
Drawing Reference: 102085-GP7,102085-GP8, 102085-GP9

Legend:	
Input by User	No Input Required
Acceptable (40psi - 80psi)	
Acceptable w/ PRV (81psi - 100psi)	
Unacceptable (< 40psi or > 100psi)	

Note: Hydraulic modelling completed using EPANET 2.0.

Node	Elevation (m)	Demand (L/s)	Total Head (m)	Pressure (m)	Pressure (psi)
Resvr 1	160.00	-1.55	160.00	0.00	0
Junc A	112.30	0.00	159.98	47.68	67.8
Junc B	111.00	0.00	159.87	48.87	69.5
Junc C	109.60	0.24	159.71	50.11	71.3
Junc D	110.60	0.27	159.71	49.11	69.8
Junc E	106.70	0.30	159.63	55.30	78.6
Junc F	104.30	0.18	159.60	55.30	78.6
Junc G	107.80	0.16	159.59	51.79	73.6
Junc H	109.80	0.40	159.58	49.78	70.8

Water Demand Design Sheet

Engineers, Planners & Landscape Architects

Minimum Pressure During Peak Hour (PKHR) Conditions

Novatech Project #: 102085
Project Name: Carp Airport - Phase 2 Business Park
Date: 10/29/2024
Input By: MNP
Reviewed By: ARM
Drawing Reference: 102085-GP7,102085-GP8, 102085-GP9

Legend: Input by User | No Input Required | Acceptable (=> 40psi) | Unacceptable (< 40psi)

Note: Hydraulic modelling completed using EPANET 2.0.

Node	Elevation (m)	Demand (L/s)	Total Head (m)	Pressure (m)	Pressure (psi)
Resvr 1	141.00	-4.20	141.00	0.00	0
Junc A	112.30	0.00	140.89	28.59	40.7
Junc B	111.00	0.00	140.25	29.23	41.6
Junc C	109.60	0.66	139.25	29.65	42.2
Junc D	110.60	0.73	139.23	28.64	40.7
Junc E	106.70	0.80	138.77	32.09	45.6
Junc F	104.30	0.48	138.59	34.31	48.8
Junc G	107.80	0.44	138.48	30.71	43.7
Junc H	109.80	1.09	138.42	28.66	40.8

Water Demand Design Sheet

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Minimum Pressure During Fire Flow Condition

Novatech Project #: 102085
Project Name: Carp Airport - Phase 2 Business Park
Date: 10/29/2024
Input By: MNP
Reviewed By: ARM
Drawing Reference: 102085-GP7,102085-GP8, 102085-GP9

Legend: Input by User | No Input Required | Acceptable (=> 20psi) | Unacceptable (< 20psi)

Note: Hydraulic modelling completed using EPANET 2.0.

Node	Elevation (m)	Demand (L/s)	Total Head (m)	Pressure (m)	Pressure (psi)
Resvr 1	168.00	-63.09	168.00	0.00	0
Junc A	112.30	0.00	167.85	55.55	79.0
Junc B	112.30	0.00	166.74	55.74	79.3
Junc C	111.00	0.00	164.98	55.38	78.7
Junc D	110.60	0.00	164.98	54.38	77.3
Junc E	107.90	0.00	159.97	53.97	76.7
Junc F	104.30	0.00	157.46	54.40	77.4
Junc G	107.80	0.00	157.46	49.66	70.6
Junc H	109.80	63.09	156.26	46.46	66.1

Novatech Project #: 102085
Project Name: Carp Airport - Phase 2 Business Park
Date: December 6, 2022
Revised: December 13, 2022
Revised: October 9, 2024
Revised: October 31, 2024

Water Allocation and Monitoring Framework
Water Demand Scenarios

Available Allocation from Village of Carp after short term upgrades by City		
	Max Day	**0.2 ML/day**
Average Day Based on 1.5 Max Day factor	0.1333	ML/day
Average Day Based on 1.5 Max Day factor	**133,333**	L/day

Total Net Development Area (approx)	32.0	ha
Prorated Average Day Allocation per hectare	4167	L/ha/day

	Estimated Design Demand						**Remaining Allocation**	
	Employee Based Demand [1]			**Other Demand**			**Average Day**	
	Area (ha)	**# of Employees**	**SubTotal (L/day)**	**Area (ha)**	**Unit [2] (L/day)**	**SubTotal (L/day)**	**Total (L/day)**	**% of Available**
Scenario 1 20 employees/ha	32.0	640	48,000				**85,333**	**64%**
Scenario 2 30 employees/ha	32.0	960	72,000				**61,333**	**46%**
Scenario 3 40 employees/ha	32.0	1,280	96,000				**37,333**	**28%**
Scenario 4 20 employees/ha 200 Room Hotel [3]	31.0	620	46,500	1.0	250	50,000	**36,833**	**28%**
Scenario 5 20 employees/ha 50 Restaurant Seats	32.0	640	48,000		125	6,250	**79,083**	**59%**
Scenario 6 20 employees/ha 50 Restaurant Seats 800 Office workers	24.0 8.0	480 75	36,000 60,000		125	6,250	**37,333**	**28%**

Notes:
[1] Assumes typical use having large warehouse/storage areas, low number of employees onsite and no process water.
[2] Unit Demand based on the following:
250 L/day per hotel room [3]
125 L/day per restaurant seat
75 L/day per employee
[3] Existing hotel room review: Sandman Airport 201 rooms, Brookstreet 276, Hilton downtown 175, Hilton Kanata 101
[4] Net Development Area is subject to confirmation of the Tributary setbacks and City approval of the revised Draft Plan.

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

WEST CAPITAL Developments

No.	REVISION	DATE	BY
3	UPDATED FOR PHASE 2 BUSINESS PARK	NOV 18/24	ARM
2	ISSUED FOR DISCUSSION	MAY 10/22	ARM
1	ISSUED FOR DISCUSSION	AUG 17/21	ARM

SCALE

DESIGN MNP
CHECKED ARM
DRAWN MNP
CHECKED ARM
APPROVED SMG

FOR REVIEW ONLY

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CITY OF OTTAWA
WEST CAPITAL AIRPARK

WATERMAIN SYSTEM SKETCH

PROJECT No. 102085-01
REV REV # 2
DRAWING No. 102085-WMSYS

4.2.2 Carp Airport

The projected water demands for the Carp Airport were provided in the Evaluation Report prepared on behalf of the Carp Airport development group. The report recommended that a "trickle-feed" water system be implemented to supply the airport with potable water. This generally consists of a more or less constant flow from the Village of Carp system with peak demands and other diurnal demand variations being supplied from a reservoir within the airport boundaries. This limits the highest flow requirements to the airport to the calculated maximum day demand, and there is no peaking factor required to meet peak hour flows. Fire flows will be provided by a local system, so there is no need to provide high fire flows from the Village of Carp to the airport.

The resulting water demands to supply the airport are as follows (amended March 3, 2008):

	Draft Plan	Total Development
• Average Day	1.054 ML/d	2.121 ML/d
• Maximum Day	1.457 ML/d	2.940 ML/d
• Peak Hour	1.457 ML/d	2.940 ML/d

4.2.3 Carp Road Corridor

As discussed previously, there is a potential that water servicing could be provided to the proposed development along the Carp Road Corridor. Projected water demands for this development have been developed based on City of Ottawa Guidelines and discussions with City staff. It is noted that these demands will not be considered to be supplied from the Village of Carp system, but only from an extension of the City's central water system from Stittsville, as it is not expected to be feasible to supply this amount of water from the Carp communal system.

The water demand projections for the Carp Road Corridor are based on the follow unit demand rates (L/ha/d):

	Ave Day	Max Day	Peak Hour (Day)	Peak Hour (Evening)
Heavy Industrial	2,000	3,000	5,400	3,000 L/ha/d
Light Industrial	2,000	3,000	5,400	3,000
Commercial	10,000	15,000	27,000	15,000
Solid Waste	0	0	0	0

These result in the following overall water demand projections for the Carp Road Corridor only:

- Average Day 3.79 ML/d
- Maximum Day 5.69 ML/d (peak factor: 1.5)
- Peak Hour (day) 10.24 ML/d (peak factor: 1.8)
- Peak Hour (evening) 5.69 ML/d (peak factor: 1.0)
- Fire Flow 18.72 ML/d (or 13,000 L/min)

Table 4: Water Storage Review

		Scenario #1	Scenario #2
		Combined Theoretical and Monitored Average Day Rates	**Monitored Average Day Rates**
[1]	**Maximum Day Demand[1] (L/day)**	498,480	437,200
[2]	**Peak Hour Demand[2] (L/s)**	12.7	11.1
[3]	**Required Fire Flow[3] (L/s)**	63.08	63.08
[4]	**Required Fire Duration[3] (hrs)**	0.5	0.5
[5]	**Fire Storage (L) ([3] x [4])**	113,544	113,544
[6]	**Max Day Storage (L)**	498,480	437,200
[7]	**Equalization Storage[4] (L) ([6] x 25%)**	124,620	109,300
[8]	**Emergency Storage[5] (L) (25% x {[5] + [7]})**	59,541	55,711
[9]	**Total Storage Required[6] (L) ([5] + [7] + [8])**	**297,705**	**278,555**
[10]	**Tank Storage Provided**	352,000	352,000

[1] Maximum Day Demands for Scenario 1 and 2 (from Table 3)
[2] Peak Hour Demand = 2.2 x Max Day Demand per City of Ottawa Water Distribution Guidelines (July 2010)
[3] Required Fire Flow and Duration indicated in Section 4 of Novatech Hydraulic Network Analysis and Water Storage Facility Design Report (July 2015)
[4] Equalization Storage = 25% Max Day Storage
[5] Emergency Storage = 25% (Fire Storage + Equalization Storage)
[6] Total Storage Required = Fire Storage + Equalization Storage + Emergency Storage

As demonstrated in **Table 4**, in both scenarios the existing water storage tank provides sufficient storage to accommodate the addition of Phase 1B-2.

5.0 SANITARY SEWAGE COLLECTION AND TREATMENT

Sanitary servicing will be done by means of small-bore sewers and has been designed by Clearford Water Systems Inc. The sanitary sewers will connect to the existing small-bore sewer system constructed as part of Phase 1B-1, which outlets to the existing wastewater treatment facility. The entire collection system, including clarifier tanks, will be owned, operated, and maintained by the condominium corporation.

5.1 Sanitary Collection

The small-bore sewer collection system consists of a clarifier tank installed on each lot. The clarifier tank is a septic tank fitted with Clearford proprietary components. The outlet from the clarifier tank will connect to a small-bore sewer collection system located within the right-of-way. System access point cleanout structures will be installed at approximately 90m spacing.

The design of the small-bore sewer system is discussed in the Phase 1B-2 Residential – SBS Sanitary Collection Design Brief (prepared by Clearford, July 2023).

The proposed servicing layout for the sanitary system is shown on **Figure 4** (Sanitary Servicing).

NOVATECH
Engineers, Planners & Landscape Architects

M E M O R A N D U M

DATE: **AUGUST 21, 2024**

TO: **JEFF OSTAFICHUK AND ADAM BROWN – CITY OF OTTAWA**

FROM: **SUSAN GORDON**

RE: **CARP AIRPORT – PHASE 2 BUSINESS PARK DEVELOPMENT APPROVALS & CARP VILLAGE SHORT TERM SERVICING UPGRADES 102085-14**

CC: **JOE ZAGORSKI - CITY OF OTTAWA**
JOSH BLOKHUIS - WEST CAPITAL DEVELOPMENTS
JOHN RIDDELL - NOVATECH

The purpose of this memo is to demonstrate how the expected timing for development review and approvals for engineering design, registration, construction and Site Plan applications for Phase 2 of the Carp Airport Business Park would coordinate with the short-term servicing upgrades proposed for the Village of Carp municipal sanitary and water systems.

Background

Phase 2 of the Carp Airport Business Park is Draft Approved, with approval currently extended to May 2026. This phase of the development will be fully serviced with piped water and sanitary. There is significant demand for serviced land in this area and the developer, West Capital Developments, is currently proceeding with this phase of the development to meet this demand.

The subdivision's water supply is from the Village of Carp municipal system, where maximum day demand is provided. Peak hour and fire flow are provided by a private water storage tank and pumping facility on the subdivision lands. The developer, West Capital Developments, has been contributing to upgrades of the Carp Village water system through the building permit process, since 2018, and is the only developer doing so.

The City is currently undertaking short term upgrades to the sanitary and water systems in the Village. They have allocated 0.2ML/day of the additional capacity that will be generated by the short-term upgrades to the water system, to the Carp Airport [1]. This 0.2ML/day would be used for the Phase 2 Business Park.

The subdivision has its own private sewage treatment plant and is therefore not dependent on the short-term upgrades to the municipal sanitary system in the Village.

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 www.novatech-eng.com

Timing

Based on a recent discussion between John Riddell and Joe Zagorski (July 22, 2024) regarding the City's short term upgrades project and discussions with West Capital Development regarding their project timing, we see the following.

Short Term Upgrades	Expected Timing	Phase 2 Business Park	Expected Timing
Design (by R.V. Anderson)	Underway	Detailed design submission	September 2024
Tender	Summer 2025	Review and approvals	Spring 2025
Ordering of Long Lead Items	Summer 2025	ECA/Early Servicing	Summer 2025
		Underground servicing	Summer/Fall 2025
		Registration/Lot sales	Fall 2025
		Road and Utilities	Spring/Summer 2026
		Site Plan Applications	Winter 2026
		Site Plan Approval/ Building Permits	Fall 2026
		Building Construction Complete	Mid 2027
Completion	Mid 2027	In-Service Memo/ Occupancy	Mid 2027

Review and Approvals

Given that West Capital has been contributing to upgrades to the Village water system since 2018 and that the above dates align, we are looking for confirmation that the City will:

- process Novatech's detailed design submission and ECA application
- allow and issue early servicing
- allow construction to proceed and permit registration of the subdivision so that blocks can be transferred to purchasers
- process and approve individual Site Plan applications and building permits to allow building construction

As was done in Phase 1A registration, occupancy would be contingent on the water supply being available, controlled by means of requiring an In-Service memo before occupancy.

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In addition to providing the above timeline, Joe Zagorski mentioned that they City might be able to generate a small amount of capacity for the first few buildings, should they be ready for occupancy in advance of the upgrades being completed.

References:

[1] Adam Brown e-mail, dated February 8, 2022, attached

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 www.novatech-eng.com

Susan Gordon

From: Brown, Adam <Adam.Brown@ottawa.ca>
Sent: Tuesday, February 8, 2022 6:54 PM
To: 'Jack Stirling'; 'Alison Stirling'; Kyle MacHutchon; 'Melissa Cote'; Jim Moffatt; 'Matt Nesrallah'; Pierre Dufresne (pdufresne@thomascavanagh.ca); John Riddell; Susan Gordon; 'Josh Kardish'; 'andrew@wildeboer.ca'; Greg Winters
Cc: Xu, Lily; Whittaker, Damien; Hall, Kevin; Morgan, Brian; McWilliams, Cheryl; McCormick, Sarah; Ostafichuk, Jeffrey; Zagorski, Joseph; Rogers, Christopher
Subject: Carp Servicing update

Please see below for a status update of the servicing situation in Carp. If you have any questions, please advise

- There is currently no capacity for additional water users in Carp as the current GAC filters operating method is a limiting factor.
- For wastewater, based on the existing flow data, there is limited capacity available (equivalent of 100 single houses). However, because of no overflow protection at the station, Wastewater Operations do not support adding more connections at the present time.
- Infrastructure Planning, in conjunction with consultant RVA, already has a short-term project underway to increase capacity of the water and wastewater systems. The time frame including detailed design and construction phases, would be two to three years from today.
- Once the proposed short-term upgrades are in place, it is estimated that there should be additional water and wastewater capacity for the equivalent of 350 single houses in the Village. For the Carp Airport, there is expected to be an additional allocation of drinking of 0.2 ML/d for a total of 0.7 ML/d.
- It is noted that the City currently has two active Plan of Subdivision applications in the village of Carp.
    - Inverness Homes subdivision (D07-16-19-0034):147 Langstaff. Details here. Unit count is 67 townhouse dwellings and 128 apartment dwellings, total 195.
    - Tartan subdivision (D07-16-21-0035): 232 Donald B. Munro Drive. Details here. Unit count is 57 single detached, 6 semi-detached, 54 townhouse units, total 117.
    - Two other possible applications could be forthcoming, with combined unit count totals estimated at +/- 390.
- The available fire flow at the Carp water plant is 6500 L/min for two hours duration. Due to village topography, depending on the new development location, it could be a lot less. Developers will need to prove that their proposal meets the available fire flow through the development review process.
- Ongoing monitoring of flows will be undertaken in the village as developments advance to reassess capacity as necessary in the future.
- Infrastructure improvements beyond the short-term upgrades will be eight to ten years into the future assuming financing availability.
- The current water and wastewater infrastructure charge, paid at permit issuance for development in Carp, will continue to be assessed. City staff will review a possible change to an area-specific development charge in the 2024 DC by-law update.
- Staff propose reserving future water and wastewater capacity for development in the village at the draft approval stage. As applications are draft approved, water and wastewater flows

will be reserved accordingly for that location. However, staff will reserve the right to reassess the allocation of flows to other areas when draft conditions expire if the development has not proceeded.

- Notwithstanding the above recommendation, if the development industry wishes to enter into an agreement for other arrangements to share allocations of flows, City staff are open to participating in these discussions.

Regards,

Adam Brown
City of Ottawa / Ville d'Ottawa
Manager, Development Review - Rural | Gestionnaire, Revue des projets d'aménagement - rurales
Planning, Real Estate and Economic Development Department | Direction générale de la planification, des biens immobiliers et du développement économique
(613) 580-2424 x:28352
http://ottawa.ca/rural
http://ottawa.ca/rurales

Note: I will be out of the office March 14 – 18.

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Alex McAuley

From: Hall, Kevin <Kevin.Hall@ottawa.ca>
Sent: Tuesday, August 27, 2024 11:37 AM
To: Susan Gordon; Ostafichuk, Jeffrey; Brown, Adam
Cc: Zagorski, Joseph; Josh Blokhuis; John Riddell; Greg Winters; Alex McAuley
Subject: RE: Carp Airport Phase 2 Business Park - Development Approvals & Short Term Upgrades (102085-14)

Susan

Thank you for the Memo detailing the timing of the water upgrades and the timing of the development of Phase 2 business park.

Adam Jeff and I met this morning to discuss the memo and we have few comments on the timing.

First. The 2027 estimate completion of the short term upgrades to the Carp Water System seems reasonable. Even though we expect the project to be completed by 2027 the City has experienced delays with construction and procuring the necessary materials to complete projects recently and there is no buffer built into the Chart.

It is normal practice that the City will not issue building permits until an in service memo is obtained. We need the in service memo listed before the issuance of the building permit in the chart.

That said we can still accept and process a site plan application, but there will be conditions related to the issuance of the permit and the availability of services.

Let me know if you want to further discuss.

Thanks

Kevin Hall, C.E.T.
Senior Project Manager
Development Review - Rural Services
Gestionnaire de projet, Approbation des demandes d'infrastructure
Examen des demandes d'aménagement (Services ruraux)
City of Ottawa | Ville d'Ottawa
ottawa.ca/planning / ottawa.ca/urbanisme

I am currently working from home. Email is the best way to contact me.

From: Susan Gordon <s.gordon@novatech-eng.com>
Sent: August 21, 2024 4:35 PM
To: Ostafichuk, Jeffrey <Jeffrey.Ostafichuk@ottawa.ca>; Brown, Adam <Adam.Brown@ottawa.ca>
Cc: Zagorski, Joseph <Joseph.Zagorski@ottawa.ca>; Hall, Kevin <Kevin.Hall@ottawa.ca>; Josh Blokhuis

<josh@sheldoncreek.com>; John Riddell <J.Riddell@novatech-eng.com>; Greg Winters <G.Winters@novatech-eng.com>; Alex McAuley <a.mcauley@novatech-eng.com>
Subject: Carp Airport Phase 2 Business Park - Development Approvals & Short Term Upgrades (102085-14)

Hi Jeff and Adam,

John Riddel and Joe Zagorski spoke recently about the short term servicing upgrades in the Village o Carp and we understand that they are now schedule or completion in mid-2027. It was suggested that we reach out to Development Approvals to discuss how development o Phase 2 o the Business Park could proceed in parallel with the upgrades.

We have put together and have attached a Memo (*Development Approvals & Carp Village Short Term Servicing Upgrades, August 21, 2024*) showing how the timing o both would align and are requesting that the development reviews and approvals continue.

We'd be happy to meet to discuss, a ter you've had a chance to review.

Thanks,

Susan Gordon, P.Eng., MBA, Director | Land Development
NOVATECH
Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 269 | Cell: 613.265.5415

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Novatech Project #: 102085
Project Name: Carp Airport - Phase 2 Business Park
Date: December 6, 2022
Revised: December 13, 2022
Revised: October 9, 2024
Revised: October 31, 2024

Water Allocation and Monitoring Framework
Water Demand Scenarios

Available Allocation from Village of Carp after short term upgrades by City		
	Max Day	**0.2 ML/day**
Average Day Based on 1.5 Max Day factor	0.1333	ML/day
Average Day Based on 1.5 Max Day factor	**133,333**	L/day

Total Net Development Area (approx)	32.0	ha
Prorated Average Day Allocation per hectare	4167	L/ha/day

	Estimated Design Demand						**Remaining Allocation**	
	Employee Based Demand [1]			**Other Demand**			**Average Day**	
	Area (ha)	**# of Employees**	**SubTotal (L/day)**	**Area (ha)**	**Unit [2] (L/day)**	**SubTotal (L/day)**	**Total (L/day)**	**% of Available**
Scenario 1 20 employees/ha	32.0	640	48,000				**85,333**	**64%**
Scenario 2 30 employees/ha	32.0	960	72,000				**61,333**	**46%**
Scenario 3 40 employees/ha	32.0	1,280	96,000				**37,333**	**28%**
Scenario 4 20 employees/ha 200 Room Hotel [3]	31.0	620	46,500	1.0	250	50,000	**36,833**	**28%**
Scenario 5 20 employees/ha 50 Restaurant Seats	32.0	640	48,000		125	6,250	**79,083**	**59%**
Scenario 6 20 employees/ha 50 Restaurant Seats 800 Office workers	24.0 8.0	480 75	36,000 60,000		125	6,250	**37,333**	**28%**

Notes:
[1] Assumes typical use having large warehouse/storage areas, low number of employees onsite and no process water.
[2] Unit Demand based on the following:
250 L/day per hotel room [3]
125 L/day per restaurant seat
75 L/day per employee
[3] Existing hotel room review: Sandman Airport 201 rooms, Brookstreet 276, Hilton downtown 175, Hilton Kanata 101
[4] Net Development Area is subject to confirmation of the Tributary setbacks and City approval of the revised Draft Plan.

Novatech Project #: 102085

Project Name: Carp Airport

Date: December 13, 2022

Revised: November 11, 2024

Carp Airport
Phase 2 Business Park
Servicing Capacity Review

NOVATECH
Engineers, Planners & Landscape Architects

Item	Residential Development (Phases 1A, 1B-1, 1B-2, 2A)		Available for Business Park				Available for Business Park With Upgrades					
	Required	Provided	Available Capacity		(L/emp/day)	Equivalent Employees	Upgrade	Additional Capacity Provided	Total Capacity Available		(L/emp/day)	Equivalent Employees
												Total / per ha (10)
Column ID	[A]	[B]	[C]		[D]	[F]	[G]	[H]	[I]		[J]	[K] / [L]
Calculations by column number			[B]-[A]			[C] / [D]			[C] + [H]			[I] / [J] / [K] / 31.6ha
Carp Village Water Allocation (Max Day) (1)	0.50 ML/day (Combined) (2)	0.50 ML/day (7)	0	ML/day	112.5	0	Village of Carp short term upgrades (by City)	0.2 ML/day	0.20	ML/day	112.5	1778 / 56
	0.44 ML/day (Monitored)(3)	0.50 ML/day (7)	0.06	ML/day	112.5	533		0.2 ML/day	0.26	ML/day	112.5	2311 / 73
Water Storage Tank Capacity (4)(5)	297,705 L	352,000 L	54,295	L	35.2	1542	Addtional Water Storage Tank (by WCD)	352,000 L	406,295	L	35.2	11542 / 365
Wastewater Treatment Facility Capacity (6)	245 m^3/day	298 m^3/day	66	m3/day	75	883	1 Additional WWTF Module (by WCD)	186 m^3/day	252.25	m3/day	75	3363 / 106

Notes:

(1) Carp Village Water Allocation: Water demand is based on average daily demand of 75L/employee/day times peaking factor of 1.5, resulting in a Maximum Day Demand of 112.5L/employee/day. (City of Ottawa Water Design Guidelines, and ISTB-2018-01).

(2) Combined residential water demand is based on monitored demand (200L/cap/day) for existing phases (1A, 1B-1, & 2A), and theoretical demand (280L/cap/day) for proposed Phase 1B-2.

(3) Monitored residential water demand is based on monitored demand (200L/cap/day) for existing and proposed phases (1A, 1B-1, 1B-2, & 2A).

(4) Water Storage Tank Capacity: Water demand is based on Equilization Storage (25% of Maximum Day demand of 112.5L is 28.12L) plus Emergency Storage (25% of Equilization Storage of 28.12L is 7.03L). This results in a Storage volume required of 35.2L/employee. (Carp Airport Hydraulic Network Analysis)

(5) Consideration should be made to reserving additional storage capacity provide a buffer as monitored residential flows are being used to determine this volume.

(6) Wastewater Treatment Facility: The provided capacity of 298 m3/day is 80% of the 372m3/day rated capacity per the MECP, since monitored flows are being used to calculate required flows. Wastewater flows are based on theoretical average daily flow of 75L/employee/day. (City of Ottawa Sewer Design Guidelines)

(7) Use of monitored demands is subject to review of Phase 2B Serviceability by the City

(8) Water demands account for employee water use only, and does not account for process water.

(9) This information will need to be reviewed once more information on the potential uses of the Business Park is available. Excess capacity is expected to be available to future Carp Airport development lands.

(10) Net Development Area is subject to confirmation of the Tributary setbacks and City approval of the revised Draft Plan.

Appendix C

CARP AIRPORT
PHASE 2 BUSINESS PARK
SANITARY PUMP STATION
DESIGN BRIEF

Prepared By:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
K2M 1P6

November 19, 2024

Novatech File: 102085

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LIST OF APPENDICES

Appendix A

- FIGURE 1 : SYSTEM CURVE
- MANUFACTURER PUMP CURVE

1.0 INTRODUCTION

1.1 Background

The background of the Phase 2 Business Park, sanitary sewer design, sanitary design flows, existing wastewater facilities and location of this proposed pump station can be found in the Phase 2 Business Park Servicing Report. This design brief has been prepared to document details of the sanitary pump station which is servicing the Phase 2 Business Park. Refer to the Phase 2 Business Park Servicing Report for background and location information.

2.0 REFERENCES AND SUPPORTING DOCUMENTS

2.1 Guidelines and Supporting Studies

The following guidelines and supporting documents were utilized in the preparation of this report:

- **Design Guidelines for Sewage Works and Drinking Water System** (MECP Guidelines)
  Ministry of the Environment, 2008.

3.0 SANITARY PUMP STATION AND FORCEMAIN

The business park is serviced by individual septic tanks at each facility. The septic tanks discharge to downstream small bore sewers which gravity flow to the sanitary pump station. The septic tanks remove large solids and approximately 50% of total solids. The septic tanks also dampen peak sanitary flows to the pump station. The sanitary pump station is designed for the peak flow of 3L/s [Refer to Clearford Design Brief]. The station will pump sewage to the existing balance tanks at the wastewater facility as shown on Drawing SPS. The pump station will include a duty and standby pump, each rated for peak flow. The station will also include standby power to allow peak flow operation to continue during power outages. The sanitary pump station is located near the storm pond as indicate on Drawing 102085-SPS. The design basis for pump station components are as follows:

3.1 Wet Well

The wet well will be 2.4m dia FRP/precast station with dual pump rails as shown on Drawing 102085-SPS. The wet well will include ultrasonic level controls, float backup, vents, access hatches, and piping. The wet well can be isolated by closing the valve in the upstream sanitary manhole. The wet well is designed to provide a minimum 5-minute cycle time for the pumps under ultimate flow conditions of 3 L/s. Minimum Wet well working volume has been sized as follows:

Minimum Pump Cycle Volume = (t x Q)/4
= (5min x 3L/s x 60sec) / 4
= 0.225m³

This volume corresponds to a minimum required vertical displacement within the 2.4m diameter wet well of 0.05 m under peak conditions. The operating levels are set as follows:

a) LWL alarm = 99.70m
b) Pumps off =100.00m
c) Duty pump =100.30m
d) Standby Pump on and HWL =100.60m

3.2 Odour Attenuation

The pump station is servicing a small catchment area and is not expected to have significant odour production due to the removal of a significant portion of solids in the upstream system. The station is also far away from any houses or pedestrian traffic and therefore not expected to create any nuisance in the surrounding community.

3.3 Sewage Pumps

The wet well includes two submersible sewage pumps. The pump configuration is as follows:

- Pump 1 (P1) rated for 3 L/s
- Pump 2 (P2) rated for 3 L/s

The pump configuration will provide a firm capacity of 3L/s. One pump will be a duty pump and the second pump will be standby. The duty pump will cycle after each pump cycle. Each pump will be sized for peak flow and will have the ability to operate within range of expected flow/head loss curve based on two 75mm diameter DR13 forcemains of approximately 1470m in length. Each forcemain is sized for peak flow, so only one forcemain will be in service at a given time and the other will be redundant. The pump and system curve can be found in Figure 1 [Appendix A].

3.4 Sewage Flow Totalizer

The wet well includes an ultrasonic level transmitter to provide continuous reading of wet well levels. The PLC will be programmed to record both incoming and pumped flow rates for each 1-hour interval based on rate of rise in wet well and number of pump cycles with associated on/off levels.

3.5 Emergency Generator

An emergency generator will provide standby power in the event of a primary power failure. The generator has been sized to power the complete station and will include a subbase double walled diesel tank with capacity for 24-hours of operation.

The emergency generator will also come with self-enclosed noise reduction measures. Although the exact make and model of the generator has yet to be determined, a generator of this size typically yields a performance rating of 70 dBa at 7 meters at full rated load.

Using the generators yield of 70 dBa at 7 meters at full rated load, noise levels of interest can be determined by a sound-distance correlation to ensure the outdoor living area (OLA) and indoor living environment (ILE) sound level requirements are in accordance with the MECP Environmental Noise Guideline (August 2013).

The reference distance for the noise level of interest is calculated as follows:

$$R_2 = R_1 \times 10 \text{ ^ } \{ | L_1 - L_2 | / 20 \}$$

Where, L_1 = Noise level at reference distance R_1 (70 dBa);
R_1 = Reference distance for noise level L_1 (7.0 m);
L_2 = Noise level at reference distance R_2 (noise level of interest).

Example – Noise Level L_2 = 55 dBa:

$$R_2 = 7.0 \text{ m} \times 10 \text{ ^ } \{ | 70 \text{ dBa} - 55 \text{ dBa} | / 20 \} = 39.4 \text{ m}$$

Table 7.1: Reference Distance/Noise Level Summary

Noise Levels of Interest (dBa)	Reference Distance (m)
70	7.0
65	12.5
60	22.1
55	39.4
50	70.0
45	124.5

Notes:
(1) The noise levels of interest and the corresponding reference distances are considered to be unattenuated - no screening or noise exposure limitations have been applied.

The target noise levels for the ILE for both living/dining area and sleeping quarters is 50 dBA and 45 dBA, respectively. Since all residential property lines will be significantly over 125m away, noise will not be a concern.

3.6 Bypass Manhole

The sanitary manhole just upstream of the wet well will be the emergency overflow for the pump station. The emergency overflow will outlet to a nearby ditch draining to the storm pond as an added level of protection in the event of a catastrophic failure of the station. The emergency pipe will be designed for peak flow and will be set above the 25-year boundary condition of the receiving system. The overflow pipe will include a backflow preventer at the by-pass chamber as another layer of protection against reverse flows.

3.7 Valve Chamber

A valve chamber is located downstream of the wet well. The valve chamber will house check valves, isolation valves, and a quick connect bypass connection at the surface. The isolation valves will be provided with operating nuts to allow operation from the surface if the duty forcemain is changed or bypass pumping is required. If bypass pumping is required, a temporary pump can be installed in the bypass manhole and associated hose can be connected to the quick connect in the valve chamber.

3.8 Electrical/Control Panels

The pump station will be equipped with outdoor electrical panels. Primary control of the station will be PLC controlled based off of an ultrasonic level transmitter. If the station PLC fails, the level transmitter will take over control and the floats will be the final backup. Communication to the plant will be by cellular modem. There will be a local touchscreen to display alarms, change setpoints and trending.

4.0 CONCLUSIONS

This report demonstrates that the proposed development can be adequately serviced by the proposed sanitary pump station

This report is respectfully submitted for review and subsequent approval. Please contact the undersigned should you have questions or require additional information.

NOVATECH

Prepared by:

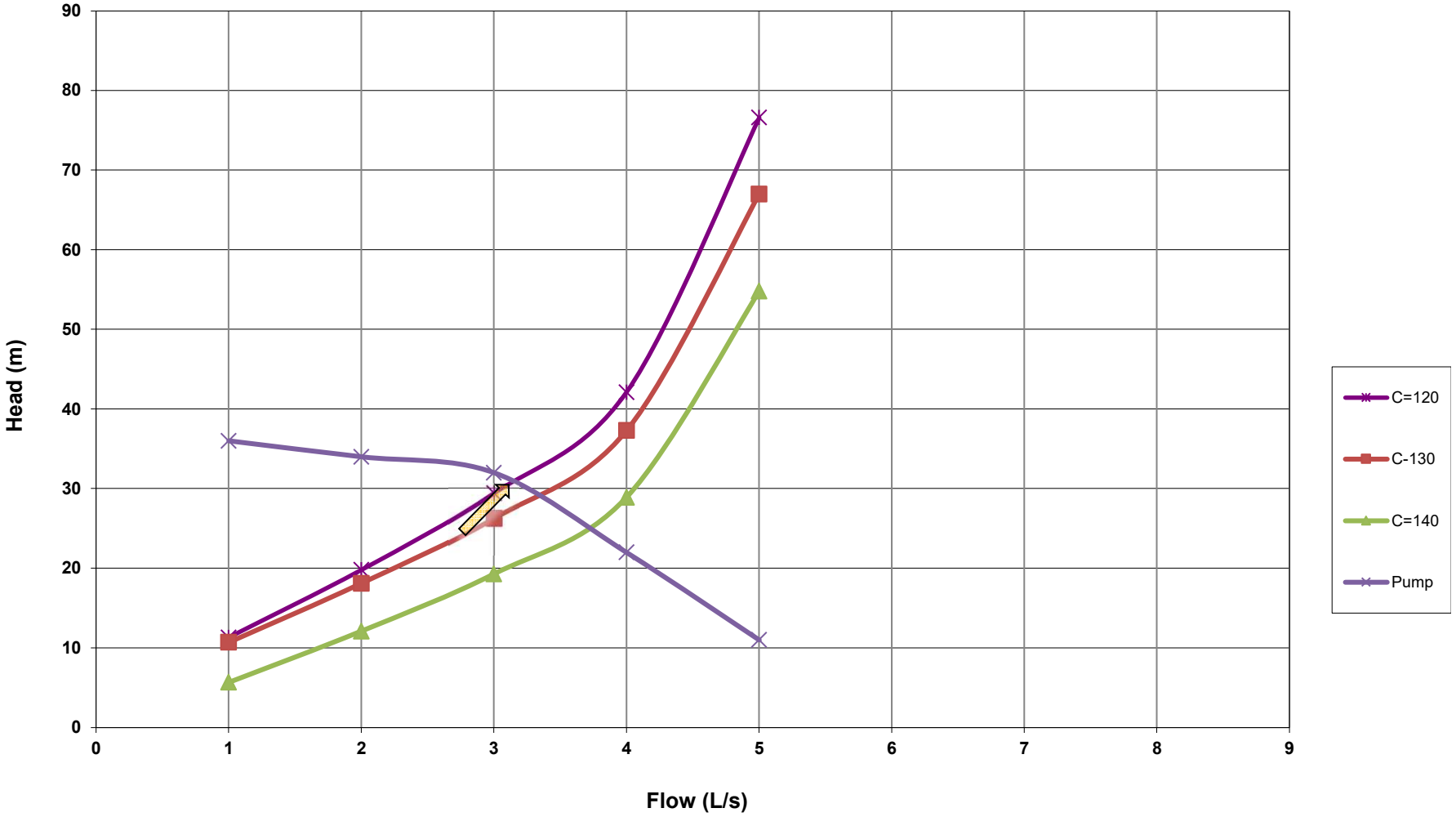
Carl Sciuk, P.Eng.
Project Lead I Special Projects

Appendix A

Figure 1: System Curve

Pump Manufacture Data Sheet

Figure 1
Carp Airport- Sanitary Pump Station
Forcemain System Curve

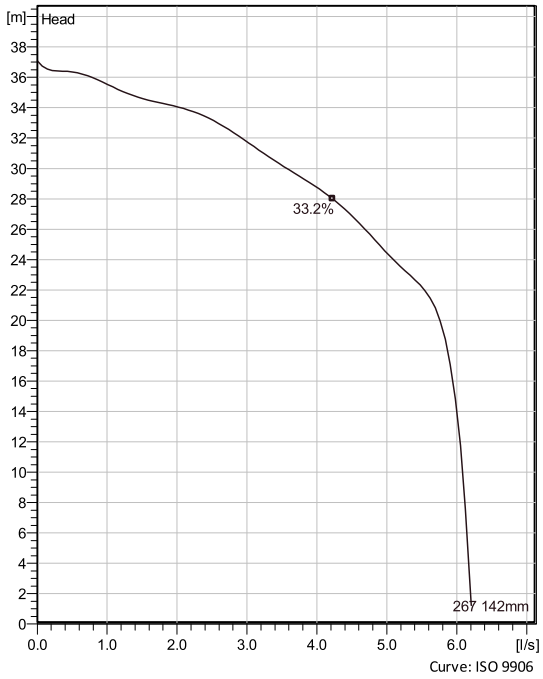


MP 3102 HT 3~ 267

Semi-open multi-channel impellers with integral grinder cutter in single volute casing for liquids containing solids and fibres.

Technical specification

Curves according to: Water, pure Water, pure [100%],277 K,999.9 kg/m³,1.5692 mm²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
M3102.170 18-10-2AL-W 6hp

Installation type
P - Semi permanent, Wet

Impeller diameter
142 mm

Discharge diameter
40 mm

Pump information

Impeller diameter
142 mm

Discharge diameter
40 mm

Inlet diameter
40 mm

Maximum operating speed
3515 rpm

Number of blades
6

Max. fluid temperature
40 °C

Material

Impeller
Grey cast iron

Stator housing material
Grey cast iron

Project	Xylect-20220465	**Created by**	Eric Mondoux		
Block		**Created on**	11/19/2024	**Last update**	11/19/2024

Appendix D

Figure 3.5.5
Groundwater Recharge and Discharge Potential

Ottawa

Smiths Corners
Fitzroy Harbour
Woodlawn
Dunrobin
Kinburn
Harwood Plains
Antrim
Marathon
Carp
Panmure
Huntley
Corkery
KANATA
STITTSVILLE

DUNROBIN RD
GALETTA SDRD
KINBURN SDRD
THOMAS A DOLAN PKWY
MARCH RD
HIGHWAY 17
HIGHWAY 417
CARP RD
ROBERTSON RD
HAZELDEAN RD
EAGLESON RD
MAIN ST
UPPER DWYER HILL RD
Corkery Creek
Huntley Creek
Feedmill Creek
Poole Creek

SITE

N

0 2 4
Kilometres

1 : 130 000

Observed and Geologically-inferred
Headwater Wetlands

Soils

230	Fine Sand
125	Silt
125	Paleozoic Bedrock
100	Clay
<75	Precambrian Bedrock, Till Organic Deposits Over Till, Escarpment

** Numbers in boxes are annual recharge potentials in mm/year

Built Up
Carp River Watershed
Carp River Subwatershed
Drainage
Carp River
Village / Hamlet

Roads
4 Lane Highway
Highway
Main
Secondary

Robinson Consultants

Aquafor Beech Limited

4.4 Silty Clay to Clayey Silt

Native deposits of silty clay to clayey silt, with varying amounts of sand were encountered in the boreholes.

The silty clay was generally encountered below the topsoil and silt and sand deposits (discussed in Section 4.3, above), where encountered. The full depth of the silty clay was not fully penetrated, but was proven to depths of up to about 15.1 metres below the existing ground surface. Based on the results of the CPT probes, probable silty clay deposits extend to depths up to about 30.7 metres below the existing ground surface.

The upper portion of the silty clay to clayey silt has been weathered to a grey brown crust, within the exception of that at borehole 23-14. The thickness of the weathered crust is variable, noting that at some locations silt and sand layers (as described in Section 4.3) are present within the weathered crust. The weathered crust extends to depths ranging from about 1.5 to 3.5 metres below the existing ground surface.

Standard penetration test carried out in the weathered silty clay crust ranges from “weight of hammer” to 8 blows per 0.3 metres. In situ vane shear strength tests carried out in the weathered crust gave undrained shear strengths ranging from about 87 to greater than 100 kilopascals. The results of the in situ indicates a stiff to very stiff consistency.

Grain size distribution testing was carried out on one sample of the weathered crust. The results are provided in Appendix C and summarized in Table 4.2 below.

Table 4.2 – Summary of Grain Size Distribution Test (Weathered Crust)

Borehole Number	Sample Number	Sample Depth (metres)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
23-01	2	0.8 to 1.4	0	11	57	31
23-07	2	0.8 to 1.4	0	24	55	21

Atterberg limit testing was carried out on three samples of the weathered silty clay crust. The results are provided in Appendix C and are summarized in Table 4.3. The measured water content of eight samples of the weathered silty clay ranges from about 23 to 33 percent.

Excerpt from City of Ottawa
Technical Bulletin
IWSTB-2024-04

September 12th, 2024
To: All holders of the Sewer Design Guidelines, Second Edition, October 2012

Subject: Technical Bulletin IWSTB-2024-04
Screening Criteria – Infiltration-type LIDs for Development

Preamble:
The purpose of this technical bulletin is to provide an interim policy guidance document to new development when assessing the feasibility of infiltration-type Low Impact Development (LID) measures in a greenfield scenario to meet runoff volume targets established in an approved stormwater servicing plan (SWS), Environmental Management Plan (EMP), and/or Master servicing study (MSS) beyond provisions of a stormwater pond. This document will remain in force until the publication of the City of Ottawa Low Impact Development Design Guidelines.

Conditions:
Changes to planned infrastructure in an approved SWS, EMP, or MSS that involve elimination or downsizing of end-of-pipe facilities in favour of LIDs are not permitted.

Until Ottawa LID design guidelines and standards are available, the following information will be used to guide the design of any infiltration type LID infrastructure as well as commissioning and monitoring requirements. In the interim, all new LID applications shall be reviewed and approved by Development Review.

In addition to the Ministry of Environment, Conservation and Parks (MECP) stormwater management practice site constraints, listed in the 2022 Draft LID Stormwater Management Guidance Manual and Table A.2 of the Environmental Compliance Approval for a Municipal Stormwater Management System, infiltration/exfiltration systems will not be permitted in any the following conditions:

1. Clay and silt soils: Due to the poor hydraulic properties of silts and clay, infiltration-type LID practices are not permitted in clay or silt soils, nor in soils that warrant a dual classification with silt or clay as per the Unified Soil Classification System.

2. Bedrock: The invert of infiltration-type LID practices must be at least one metre above the native (pre-development) elevation of the bedrock surface. Infiltration-type LIDs will not be permitted in blasted rock areas nor in bowls of the bedrock elevation.

3. Engineered fill: Infiltration-type LIDs will not be permitted in engineered fill. Engineered fill may consist of Granular A or Granular B Type 2.

4. Groundwater: The invert of infiltration-type LID practices must normally be at least one metre above the seasonally high (pre-development) groundwater elevation,

Appendix E

Development Servicing Study Checklist

1.0 General Content	Addressed (Y/N/NA)	Section	Comments
Executive Summary (for larger reports only).	N/A		
Date and revision number of the report.	Y		Title Page
Location map and plan showing municipal address, boundary, and layout of proposed development.	Y		Draft Plan of Subdivision, Figure 1, and Figure 2
Plan showing the site and location of all existing services.	Y		Figure 4
Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.	Y		Section 1.0
Summary of Pre-consultation Meetings with City and other approval agencies.	N		
Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.	Y		Hydraulic Network Analysis, Water Storage Facility Design Report, Carp Riverhsed Study
Statement of objectives and servicing criteria.	Y		Section 1.0
Identification of existing and proposed infrastructure available in the immediate area.	Y		General Plan of Services (102085-GP5, 102085-GP6, 102085-GP7, 102085-GP8, 102085-GP9,and 102085-GP10)
Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).	Y		Section 3.0 - reference to ECA approval for SWM Facility
Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighboring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.	Y		Grading Plans (102085-GR5, 102085-GR6, 102085-GR7, 102085-GR8, and 102085-GR9) Interim Grading Plans (102085-IGR5, 102085-IGR6, 102085-IGR7, 102085-IGR8, and 102085-IGR9)

Development Servicing Study Checklist

1.0 General Content	Addressed (Y/N/NA)	Section	Comments
Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.	NA		
Proposed phasing of the development, if applicable.	NA		
Reference to geotechnical studies and recommendations concerning servicing.	Y		Geotechnical Investigation and Slope Stability Assessment- Proposed Carp Airport Phase 2 Commercial Development, dated November 4, 2025, prepared by Gemtec
All preliminary and formal site plan submissions should have the following information:			
Metric scale	Y		
North arrow (including construction North)	Y		
Key plan	Y		
Name and contact information of applicant and property owner	Y		
Property limits including bearings and	Y		
Existing and proposed structures and	Y		
Easements, road widening and rights-of-way	Y		
Adjacent street names	Y		

Development Servicing Study Checklist

2.0 Water	Addressed (Y/N/NA)	Section	Comments
Confirm consistency with Master Servicing Study, if available.	Y		Section 4.0
Availability of public infrastructure to service proposed development.	Y		Section 4.0
Identification of system constraints.	Y		Section 4.0
Identify boundary conditions.	NA		Section 4.0
Confirmation of adequate domestic supply and pressure.	Y		Section 4.0
Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.	Y		Section 4.0
Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.	Y		Section 4.0
Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design.	Y		Section 4.0
Address reliability requirements such as appropriate location of shut-off valves.	Y		Section 4.0
Check on the necessity of a pressure zone boundary modification.	NA		Section 4.0
Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range.	Y		Section 4.0
Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.	Y		Section 4.0
Description of off-site required feedermains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.	Y		Section 4.0
Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	Y		Section 4.0
Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.	Y		Section 4.0

Development Servicing Study Checklist

3.0 Wastewater	Addressed (Y/N/NA)	Section	Comments
Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).	Y		Refer to Sanitary Collection System report (Clearford, November 2024) and Section 5.0
Confirm consistency with Master Servicing Study and/or justifications for deviations.	N/A		
Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.	Y		Refer to Sanitary Collection System report (Clearford, November 2024) and Section 5.0
Description of existing sanitary sewer available for discharge of wastewater from proposed development.	Y		Refer to Sanitary Collection System report (Clearford, November 2024) and Section 5.0
Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)	Y		Refer to Sanitary Collection System report (Clearford, November 2024) and Section 5.0
Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	Y		Refer to Sanitary Collection System report (Clearford, November 2024) and Section 5.0
Description of proposed sewer network including sewers, pumping stations, and forcemains.	Y		Refer to Sanitary Pump Station Design Brief (Novatech, November 2024) and Section 5.0
Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).	N		
Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	Y		Refer to Sanitary Collection System report (Clearford, November 2024) and Section 5.0
Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	Y		Refer to Sanitary Pump Station Design Brief (Novatech, November 2024) and Section 5.0
Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	Y		Refer to Sanitary Pump Station Design Brief (Novatech, November 2024) and Section 5.0
Special considerations such as contamination, corrosive environment etc.	Y		Geotechnical Investigation and Slope Stability Assessment- Proposed Carp Airport Phase 2 Commercial Development, dated November 4, 2025, prepared by Gemtec

Development Servicing Study Checklist

4.0 Stormwater	Addressed (Y/N/NA)	Section	Comments
Description of drainage outlets and downstream constraints including legality of outlet (i.e. municipal drain, right-of-way, watercourse, or private property).	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Analysis of the available capacity in existing public infrastructure.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns and proposed drainage patterns.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Description of stormwater management concept with facility locations and descriptions with references and supporting information.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Set-back from private sewage disposal systems.	Y		
Watercourse and hazard lands setbacks.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Storage requirements (complete with calcs) and conveyance capacity for 5 yr and 100 yr events.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Identification of watercourse within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Any proposed diversion of drainage catchment areas from one outlet to another.	N/A		
Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and SWM facilities.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.	N/A		

Development Servicing Study Checklist

4.0 Stormwater	Addressed (Y/N/NA)	Section	Comments
Identification of municipal drains and related approval requirements.	N/A		
Description of how the conveyance and storage capacity will be achieved for the development.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Inclusion of hydraulic analysis including HGL elevations.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.	Y		Refer to Stormwater Management Report (Novatech November 2025) and Section 6.0
Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.	N/A		
Identification of fill constrains related to floodplain and geotechnical investigation.	Y		Geotechnical Investigation and Slope Stability Assessment- Proposed Carp Airport Phase 2 Commercial Development, dated November 4, 2025, prepared by Gemtec

Development Servicing Study Checklist

5.0 Approval and Permit Requirements	Addressed (Y/N/NA)	Section	Comments
Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.	Y		Refer to existing ECA approval - Appendix F
Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.	N/A		
Changes to Municipal Drains.	N/A		
Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)	N/A		

6.0 Conclusion	Addressed (Y/N/NA)	Section	Comments
Clearly stated conclusions and recommendations.	Y		Section 10.0
Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.	N/A		
All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario.	Y		Report and Drawings

Appendix F

Ontario

Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement climatique

ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 0961-A9UHS8
Issue Date: February 10, 2017

1514947 Ontario Inc.
1500 Thomas Argue Rd
Carp, Ontario
K0A 1L0

Site Location: Carp Airport Subdivision
1500 Thomas Argue Road
City of Ottawa
K0A 1L0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

construction of private sewage treatment facilities for the collection, transmission, treatment and discharge of treated effluent to a dry ditch (which discharges to Carp Creek eventually to Carp River), designed at a Rated Capacity of 372,000 Litres per day and a maximum daily flow of 744,000 Litres per day, together with stormwater management facilities to serve the Phase I and Phase 2 residential development and business park at the West Capital Airpark located at the Carp Airport, in the City of Ottawa, consisting of the following:

Septic Tanks

- installation of clarifier tanks, each having a minimum volume of 4,000 L capacity complete with inlet and outlet hatches, hydraulic mixer and flow attenuator located on each residential lot and the communal hangar site, 9,000 L capacity for the wastewater treatment system/City park location, and a 45,000 L capacity tank for the community center site, discharging to the sanitary collection system, identified below;

Sewage Collection System

- a small diameter gravity sewer system (Small Bore Sewer (SBS) by Clearford Water Systems or equivalent), approximately 3,690 m in total length of collection mains with diameters ranging from 75 mm to 200 mm on the following streets:
  - Albert Boyd Private, 400 m;
  - Silver Dart Private 10 m;
  - Sopwith Private 360 m;
  - Wingover Private 985 m;

- Easements 550 m;
- Chandelle Private 670 m;
- Tailslide Private 415 m;
- TaxiwayE 300 m,

all complete with SAP type cleanouts;

- an inverted syphon, consisting of two (2) 100 mm diameter pipes, approximately 145 m in length, and one (1) 250 mm diameter sanitary sewer, approximately 30.7 m in length from the Wastewater Treatment Plant (described below), all discharging to the sanitary lift station, described below.

- one (1) 200mm diameter sanitary sewer, approximately 16.7m in length from the pump building, discharging to the equalization tanks located at the Wastewater Treatment Plan (described below);

Sanitary Lift Station

- a sanitary lift station, to convey sewage flows to the equalization tanks located at the wastewater treatment plant, and consisting of:

  - one (1) wet well with a minimum operating volume of approximately 1,840 L;
  - two (2) submersible pumps (one standby), each pump rated at 7.66 L/s at 6 m TDH, complete with a high liquid level alarm, and discharging via a 75 mm diameter forcemain to a 200 mm diameter sanitary sewer, approximately 21.6 m in length, discharging to the equalization tanks at the Wastewater Treatment Plant (described below);
  - one (1) covered control panel.

Wastewater Treatment Plant

A modular package type wastewater treatment system rated at an average daily flow of 186 m³/day for Phase 1 of the development and an additional average daily flow of 186 m^3/day for Phase 2 of the development (progressing to average daily flow of 910 m³/day at full build-out in Phase 5 in future), consisting of the following:

Phase 1

- an equalization tank system (multiple tanks) with a volume of 103 m³ for Phase 1 of the development (309 m³ at full build-out in Phase 5 in future), complete with an ultrasonic level transmitter to control pump operation and back-up high level alarm float switch.
- two rotary lobe blowers for aeration of the equalization tank system, as required.
- two variable speed pumps (one duty and one standby) to transfer wastewater through the screening system.
- two rotary brush screens (one duty and one standby) with 2 mm openings, each with a capacity of approximately 983 L/min, equipped with water level sensor and two feed forwards pumps (one duty and one standby).
- an aerobic tank with a storage volume of approximately 41 m³, equipped with two rotary lobe blowers (one duty and one standby) for fine bubble aeration, complete with dissolved oxygen and pH transmitters, and chemical metering pumps to feed sodium hydroxide for pH adjustment (as needed) and alum to promote

flocculation of suspended solids (as needed).

- a tank level transmitter and high level float alarm switch in aerobic tank as well as two centrifugal submersible feed pumps (one duty and one standby) rated at 12 L/s at 4.6 m TDH to pump wastewater to the membrane bioreactor.
- a membrane reactor system consisting of one membrane tank (approximate volume of 11.4 m³) and two flat sheet membrane modules (newterra MB3-2 MicroClear) equipped with two permeate extraction pumps (one duty and one standby), complete with an overflow return line to the aerobic tank.
- two blowers (one duty and one standby) within the membrane reactor system for scouring of the membrane modules.
- a sludge holding tank having an approximate volume of 7 m³ complete with a sludge dewatering system with mixing tank for polymer addition and dewatering press equipped with water return line to the equalization tank, with dried sludge stored in an outdoor bin.
- an effluent flow meter prior to effluent discharge to an onsite dry ditch via a 200mm diameter sanitary sewer, approximately 31.7m in length.

Phase 2

- a second equalization tank with a volume of 103 m^3 for Phase 2 of the development.
- an aerobic tank with a storage volume of approximately 41 m³, equipped with two rotary lobe blowers (one duty and one standby) for fine bubble aeration, complete with dissolved oxygen and pH transmitters, and chemical metering pumps to feed sodium hydroxide for pH adjustment (as needed) and alum to promote flocculation of suspended solids (as needed).
- a tank level transmitter and high level float alarm switch in aerobic tank as well as two centrifugal submersible feed pumps (one duty and one standby) rated at 12 L/s at 4.6 m TDH to pump wastewater to the membrane bioreactor.
- a membrane reactor system consisting of one membrane tank (approximate volume of 11.4 m³) and two flat sheet membrane modules (newterra MB3-2 MicroClear) equipped with two permeate extraction pumps (one duty and one standby), complete with an overflow return line to the aerobic tank.
- two blowers (one duty and one standby) within the membrane reactor system for scouring of the membrane modules.

Stomwater Management Facilities

Construction of stormwater management works related to the construction of the Wastewater Treatment and Water Storage Facility at the West Capital Airpark located at the Carp Airport, in the City of Ottawa, to provide on-site stormwater quality protection and erosion control and to attenuate post-development peak flows to pre-development release rates for all storm events up to and including the 100-year storm event for a catchment area of 0.489 hectares of industrial area, discharging to the roadside ditch along Wingover Private and ultimately discharging to Carp Creek, consisting of the following:

- enhanced grassed swales, located along the east, south and west property boundaries (180m total) designed to convey runoff from storms up to and including the 100-year return period, with a trapezoidal cross-section, bottom slope of approximately 0.50%, bottom width of 0.75 metres, and 3:1 side slopes, discharging to two ditch inlet catch basins (DICB A and B);

- stormwater management facility (catchment area 0.489 hectares): Two (2) dry swales (WSW and ESW), located along the east, south and west property boundaries, each having a total storage volume of 27.90 m³ and 27.14 m³ respectively at a depth of 0.30 m, with side slopes of 3H:1V (maximum) and a bottom slope of approximately 0.5%, complete with two inlet control structures (DICB A and DICB B), receiving inflow from enhanced grassed swales; two multi-staged outlet control structures, Tempest 115mm orifice (installed in outlet pipe of DICB A) controlling flows to 17.9 L/s and a Tempest 90mm orifice (installed din the outlet pipe of DICB B) controlling flows to 11.1 L/s during the 100-year event, connecting to a riprap lined swale, discharging to the Wingover Private roadside ditch and ultimately discharging to Carp Creek;

- including erosion/ sedimentation control measures during construction and all other controls and appurtenances essential for the proper operation of the aforementioned Works,

all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage works;

all in accordance with the submitted supporting documents listed in **Schedule B.**

For the purpose of this environmental compliance approval, the following definitions apply:

"Annual Average Concentration" means the arithmetic mean of all Single Sample Concentrations of a contaminant in the Final Effluent sampled or measured, or both, during a calendar year;

"Annual Average Daily Flow" means the cumulative total sewage flow of Influent to the Sewage Treatment Plant during a calendar year divided by the number of days during which sewage was flowing to the Sewage Treatment Plant that year;

"Annual Average Loading" means the value obtained by multiplying the Annual Average Concentration of a contaminant by the Annual Average Daily Flow over the same calendar year;

"Approval" means this entire document and any schedules attached to it, and the application;

"BOD5" (also known as $TBOD_5$) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;

"Bypass" means diversion of sewage around one or more unit processes within the Sewage Treatment Plant with the diverted sewage flows being returned to the Sewage Treatment Plant treatment train upstream of the Final Effluent sampling point, and discharging to the environment through the Sewage Treatment Plant outfall;

"CBOD5" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

"Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

"*E. coli* " refers to the thermally tolerant forms of Escherichia that can survive at 44.5 degrees Celsius;

"EPA" means the *Environmental Protection Act* , R.S.O. 1990, c.E.19, as amended;

"Equivalent Equipment" means a substituted equipment or like-for-like equipment that meets the required quality and performance standards of a named equipment;

"Event" means an action or occurrence, at a given location within the Works that causes a Bypass or Overflow. An Event ends when there is no recurrence of a Bypass or Overflow in the 12-hour period following the last Bypass or Overflow. Two Events are separated by at least 12 hours during which there has been no recurrence of a Bypass or Overflow. An Overflow Event and a Bypass Event are two separate reportable events even when they occur concurrently;

"Final Effluent" means effluent that are discharged to the environment through the approved Final Effluent Outfall, including all Bypasses, that are required to comply with the effluent limits stipulated in the Approval for the Sewage Treatment Plant, pertaining specifically to the Final Effluent sampling point;

"Geometric Mean Density" is the nth root of the product of multiplication of the results of n number of samples over the period specified;

"Influent" means flows to the Sewage Treatment Plant through the collection system, excluding all process return flows;

"Limited Operational Flexibility" (LOF) means the minor modifications that the Owner is pre-approved to make to the Works under this Approval;

"Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

"Monthly Average Concentration" means the arithmetic mean of all Single Sample Concentrations of a contaminant in the Final Effluent sampled or measured, or both, during a calendar month;

"Monthly Average Effluent Flow" means the cumulative total Final Effluent discharged during a calendar month divided by the number of days during which Final Effluent was discharged that month;

"Monthly Average Loading" means the value obtained by multiplying the Monthly Average Concentration of a contaminant by the Monthly Average Effluent Flow over the same calendar month:

"Overflow" means a discharge to the environment from the Works at a location other than the Sewage Treatment Plant outfall or into the outfall downstream of the Final Effluent sampling point;

"Owner" means 1514947 Ontario Inc. and its successors and assignees;

"OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended;

"Peak Daily Flow Rate" means the largest volume of flow to be received during a one-day period for which the sewage treatment process unit or equipment is designed to handle. This flow is also referred to as maximum daily flow or maximum day flow;

"Proposed Works" means those portions of the Works to be constructed under this Approval;

"Rated Capacity" means the Annual Average Daily Flow for which the Sewage Treatment Plant is designed to handle;

"Sewage Treatment Plant" means the entire sewage treatment and effluent outfall facility;

"Substantial Completion" has the same meaning as "substantial performance" in the *Construction Lien Act* ;

"Works" means the sewage works described in the Owner's application, and this Approval, and modifications made under Limited Operational Flexibility.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

(1) The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Except as otherwise provided by these terms and conditions, the Owner shall design, construct, operate and maintain the Works in accordance with this Approval.

(3) Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence, and where there is a conflict between the documents in the Schedule A, the document bearing the most recent date shall prevail.

(4) The Conditions of this Approval are severable. If any Condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

(5) This Approval is granted based upon a review of the Works in the context of its effect on the environment, its process performance and general principles of wastewater engineering. The review did not include a consideration of the architectural, mechanical, electrical or structural components and minor details of the Works except to the extent necessary to review the Works.

(6) This Approval only pertains to approval required under OWRA S.53 and does not include Air, Noise,

Waste, Renewable Energy and other media approvals that may be required under other sections of the EPA or the Green Energy Act or other Federal or Provincial regulations for any portion of the Works.

2. EXPIRY OF APPROVAL

This Approval will cease to apply to those parts of the Works which have not been constructed within five (5) years of the date of this Approval.

3. CHANGE OF OWNER

(1) The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:

a. change of address of Owner or operating authority;
b. change of Owner or operating authority or both, including address of new Owner or operating authority, or both;
c. change of partners where the Owner or operating authority is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act, R.S.O. 1990, c. B.17* ; and
d. change of name of the corporation where the Owner or operating authority is or at any time becomes a corporation, and a copy of the "Initial Return" or "Notice of Change" filed under the *Corporations Information Act, R.S.O. 1990, c. C.39* , shall be included in the notification to the District Manager.

(2) In the event of any change in ownership of the Works, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the District Manager.

(3) The Owner shall ensure that all communications made pursuant to this condition refer to the number at the top of this Approval.

(4) Notwithstanding any other requirements in this Approval, upon transfer of the ownership or assumption of the Works to a municipality if applicable, any reference to the Regional Director shall be replaced with the Regional Water Compliance Manager.

4. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

(1) Upon the Substantial Completion of the Works, the Owner shall prepare a statement, certified by a Professional Engineer, that the works are constructed in accordance with this Approval, and upon request, shall make the written statement available for inspection by Ministry personnel.

(2) Within six (6) months of the Substantial Completion of the Works, a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the Works for the operational life of the Works.

5A. BYPASSES

(1) Any Bypass is prohibited, except:

a. in an emergency situation when a structural, mechanical or electrical failure that causes a temporary reduction in the capacity of the Sewage Treatment Plant or in unexpected and/or unavoidable circumstance(s) that are likely to result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset;
b. where the Bypass is a direct and unavoidable result of a planned maintenance procedure or other circumstance(s), the Owner having notified the District Manager at least fifteen (15) days prior to the occurrence of Bypass, including an assessment of the potential adverse effects on the environment and the anticipated duration of the Bypass and the mitigation measures, and the District Manager has given written consent of the Bypass;

(2) For any Bypass Event, the Owner shall forthwith notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information for each Event:

a. the date and time of the Bypass;
b. the treatment process(es) Bypassed and the status of the disinfection;
c. the reason(s) for the Bypass.

(3) After each Bypass Event, the Owner shall collect and record the following information:

a. the duration of the Bypass Event;
b. the measured or the estimated volume of Bypass.

(4) For any Bypass Event, the Owner shall collect sample(s) of the Final Effluent, representative of the Event, at the Final Effluent Compliance sampling point, and analyze for all effluent parameters outlined in Effluent Limits condition. These samples shall be of the same type as the regular samples required in the Monitoring and Recording condition and shall follow the same protocols specified in the Monitoring and Recording condition. If the Bypass occurs within 48 hours prior to a scheduled regular sample, then the scheduled regular sample may be omitted for that one time only.

(5) The Owner shall submit a summary report of the Bypass Event(s) to the District Manager on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15. The summary reports shall be in an electronic format, which shall contain, at a minimum, the types of information set out in Subsections (2), (3) and (4) for Bypass(es). The District Manager may modify the reporting frequency at any time in writing.

5B. OVERFLOWS

(1) Any Overflow is prohibited, except:

a. in an emergency situation when a structural, mechanical or electrical failure that causes a temporary reduction in the capacity of the Sewage Treatment Plant or in unexpected and/or unavoidable circumstance(s) that are likely to result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset;
b. where the Overflow is a direct and unavoidable result of a planned maintenance procedure or other circumstance(s), the Owner having notified the District Manager at least fifteen (15) days prior to the occurrence of the Overflow, including an assessment of the potential adverse effects on the environment and the anticipated duration of the Overflow and the mitigation measures, and the District Manager has given written consent of the Overflow.

(2) For any Overflow Event, the Owner shall forthwith notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information for each Event:

a. the date and time of the Overflow;
b. the location of the Overflow and the receiver;
c. the reason(s) for the Overflow; and
d. the level of treatment the Overflow has received and disinfection status of same.

(3) After any Overflow Event, the Owner shall collect and record the following information:

a. the duration of the Overflow Event;
b. the monitored or estimated volume of the Overflow; and
c. the impact of Overflow on the receiver.

(4) For each Overflow Event, the Owner shall collect samples, representative of the Event, consisting of a minimum of two (2) grab samples of the Overflow, one at the beginning of the Event and one approximately near the end of the Event, and every 4 hours for the duration of the Event, and have them analyzed for effluent parameters outlined in Effluent Limits condition. For raw sewage and primary treatment system Overflow, BOD5 shall be monitored instead of CBOD5 and monitoring of *E. coli* is not required.

(5) The Owner shall submit a summary report of the Overflow Event(s) to the District Manager on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15. The summary report shall be in an electronic format, which shall contain, at a minimum; the types of information set out in Subsections (2), (3) and (4) for Overflow(s). The District Manager may modify the reporting frequency at any time in writing.

6. DESIGN OBJECTIVES

(1) The Owner shall use best efforts to design, construct and operate the Works with the objective that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the Works.

Table 1 - Design Objectives
(samples to be collected at the point discharge from the treatment system to the dry ditch)

Effluent Parameter	**Monthly Average Concentration** (milligrams per litre unless otherwise indicated)
Column 1	Column 2
CBOD5	5.0
Total Suspended Solids	5.0
Total Phosphorus	0.1
Total Ammonia Nitrogen	4.0 (winter) 2.0 (summer)
E.coli	100 CFU /100 mL

(2) The Concentration Objectives of all parameters named in Column 1 in Table 1, are based on monthly averages, with the exception of E. coli, which should be calculated as monthly geometric mean.

(3) The Owner shall use best efforts to:

(a) maintain the pH of the effluent from the Works within the range of 6.5 - 8.5, inclusive, at all times;
(b) operate the works within the Rated Capacity of the Works;
(c) ensure that the effluent from the Works is essentially free of floating and settable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

(4) The Owner shall include in all reports submitted in accordance with Condition 10 a summary of the efforts made and results achieved under this Condition.

7. COMPLIANCE LIMITS

(1) The Owner shall operate and maintain the Works such that the compliance limits of the materials named below as effluent parameters are not exceeded in the Final Effluent from the Sewage Treatment Plant.

Table 2 - Compliance Limits
(samples to be collected at the point discharge from the treatment system to the dry ditch)

Effluent Parameter	**Monthly Average Concentration** (milligrams per litre unless otherwise indicated)	**Annual Average Loading** (kilograms per day unless otherwise indicated)
Column 1	Column 2	Column 3
$CBOD_5$	10.0	-
Total Suspended Solids	10.0	-
Total Phosphorus	0.15	10.2 kg/year[1] 49.8 kg/year[2]
Total Ammonia Nitrogen	5.0 (winter) 3.0 (summer)	-
E.coli	200 CFU /100 mL	-
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times		

1 - based on average daily flow of 186 m³/day for Phase 1
2 - based on average daily flow of 910 m³/day for full build-out Phase 5

(2) For the purposes of determining compliance with and enforcing subsection (3):

(a) The Monthly Average Concentration of a parameter named in Column 1 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of subsection (1).

(b) The Annual Average Loading of a parameter named in Column 1 of subsection (1) shall not exceed the corresponding maximum waste loading set out in Column 3 of subsection (1).

(c) The Concentration Limits of all parameters named in Column 1 in Table 1, are based on monthly averages, with the exception of E.coli, which should be calculated as monthly geometric mean.

(d) The pH of the effluent shall be maintained between 6.0 to 9.5, inclusive, at all times.

(3) The effluent limits set out in this Condition shall apply upon ninety (90) days after Substantial Completion of the Works.

8. OPERATION AND MAINTENANCE

(1) The Owner shall exercise due diligence in ensuring that, at all times, the Works and the related equipment and appurtenances used to achieve compliance with this Approval are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding,

adequate operator staffing and training, including training in all procedures and other requirements of this Approval and the Act and regulations, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the Works.

(2) The Owner shall prepare an operations manual at the start up of the Works operation, that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the Works;

(b) inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the Works;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the District Manager; and

(f) procedures for receiving, responding and recording public complaints, including recording any follow up actions taken.

(3) The Owner shall maintain the operations manual current and retain a copy at the location of the Works for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.

(4) The Owner shall provide for the overall operation of the Works with an operator who holds a licence that is applicable to that type of facility and that is of the same class as or higher than the class of the facility in accordance with Ontario Regulation 129/04.

9. MONITORING AND RECORDING

The Owner shall, upon commencement of operation of the Works, carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this Approval are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) For the purposes of this condition, the following definitions apply:

(a) Weekly means once each week.

(b) Monthly means once every month.

(3) Samples shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 3 - Raw Sewage Monitoring
(influent to the sewage treatment plant)

Parameters	Sample Type	Frequency
BOD5	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly

Table 4 - Final Effluent Monitoring
(samples to be collected at the end-of-pipe discharge to receiving dry ditch)

Parameters	Sample Type	Frequency
CBOD5	Composite	Weekly
Total Suspended Solids	Composite	Weekly
Total Phosphorus	Composite	Weekly
Total Ammonia Nitrogen	Composite	Weekly
E. coli	grab	Weekly
pH	grab	Weekly
Temperature	grab	Weekly

(4) Frequency of sampling in Table 4 may be changed from weekly to bi-weekly by the District Manager following a written request made by the Owner to the District Manager, after a minimum period of time of six (6) consecutive months of operation, providing that compliance limits as outlined in Table 2 are consistently met. Any other amendments to sampling parameters and frequency of sampling may be approved by the District Manager following a written request made by the Owner to the District Manager, after a minimum period of time of two (2) years of operation, providing that results of Works operation are acceptable to the Ministry.

(5) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 2016), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition),

as amended from time to time by more recently published editions;

(6) The Owner shall install and maintain (a) continuous flow measuring device(s), to measure the flowrate of the effluent from the Works with an accuracy to within plus or minus 15 per cent (+/-15%) of the actual flowrate for the entire design range of the flow measuring device, and record the flowrate at a daily frequency.

10. REPORTING

(1) One week prior to the start up of the operation of the Proposed Works, the Owner shall notify the District Manager (in writing) of the pending start up date.

(2) The Owner shall report to the District Manager orally as soon as possible any non-compliance with the effluent criteria, and in writing within seven (7) days of non-compliance.

(3) In addition to the obligations under Part X of the *Environmental Protection Act* , the Owner shall, within ten (10) working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(4) The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

(5) The Owner shall prepare performance reports on an annual basis and submit to the District Manager by March 31 of the calendar year following the period being reported upon. The reports shall contain, but shall not be limited to, the following information:

a. a summary and interpretation of all monitoring data and a comparison to the final effluent limits outlined in Compliance Limits Condition, including an overview of the success and adequacy of the Works;

b. a description of any operating problems encountered and corrective actions taken;

c. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;

d. a summary of any effluent quality assurance or control measures undertaken in the reporting period;

e. a summary of the calibration and maintenance carried out on all effluent monitoring equipment;

f. a description of efforts made and results achieved in meeting the Design Objectives outlined in the Design Objectives Condition;

g. a tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the

sludge was disposed;

h. a summary of any complaints received during the reporting period and any steps taken to address the complaints;

i. a summary of all By-pass, spill or abnormal discharge events;

j. a copy of all Notice of Modifications submitted to the District Manager as a result of Schedule B, Section 1, with a status report on the implementation of each modification;

k. a report summarizing all modifications completed as a result of Schedule B, Section 3; and

l. any other information the District Manager requires from time to time.

11. LIMITED OPERATIONAL FLEXIBILITY

(1) The Owner may make modifications to the Works in accordance with the Terms and Conditions of this Approval and subject to the Ministry's "Limited Operational Flexibility Criteria for Modifications to Sewage Works", included under Schedule A of this Approval, as amended.

(2) Sewage works under Limited Operational Flexibility shall adhere to the design guidelines contained within the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended.

(3) The Owner shall ensure at all times, that the Works, related equipment and appurtenances which are installed or used to achieve compliance are operated in accordance with all Terms and Conditions of this Approval.

(4) For greater certainty, the following are not permitted as part of Limited Operational Flexibility:

(a) Modifications to the Works that result in an increase of the approved Rated Capacity of the Works;

(b) Modifications to the Works that may adversely affect the approved effluent quality criteria or the location of the discharge/outfall;

(c) Modifications to the treatment process technology of the Works, or modifications that involve construction of new reactors (tanks) or alter the treatment train process design;

(d) Modifications to the Works approved under s.9 of the EPA, and

(e) Modifications to the Works pursuant to an order issued by the Ministry.

(5) Implementation of Limited Operational Flexibility is not intended to be used for piecemeal measures that result in major alterations or expansions.

(6) If the implementation of Limited Operational Flexibility requires changes to be made to the Emergency Response, Spill Reporting and Contingency Plan, the Owner shall, provide a revised copy of this plan to the local fire services authority prior to implementing Limited Operational Flexibility.

(7) For greater certainty, any modification made under the Limited Operational Flexibility may only be

carried out after other legal obligations have been complied with, including those arising from the *Environmental Protection Act, Niagara Escarpment Planning and Development Act, Oak Ridges Moraine Conservation Act, Lake Simcoe Protection Act* and *Greenbelt Act.*

(8) At least thirty (30) days prior to implementing Limited Operational Flexibility, the Owner shall complete a Notice of Modifications describing any proposed modifications to the Works and submit it to the District Manager.

(9) The Owner shall not proceed with implementation of Limited Operational Flexibility until the District Manager has provided written acceptance of the Notice of Modifications or a minimum of thirty (30) days have passed since the day the District Manager acknowledged the receipt of the Notice of Modifications.

SCHEDULE 'A'

Limited Operational Flexibility Criteria for Modifications to Industrial Sewage Works

1. The modifications to sewage works approved under an Environmental Compliance Approval (Approval) that are permitted under the Limited Operational Flexibility (LOF), are outlined below and are subject to the LOF conditions in the Approval, and require the submission of the Notice of Modifications. If there is a conflict between the sewage works listed below and the Terms and Conditions in the Approval, the Terms and Conditions in the Approval shall take precedence.

1.1 Sewage Pumping Stations

a. Alter pumping capacity by adding or replacing equipment where new equipment is located within an existing sewage treatment plant site or an existing sewage pumping station site, provided that the modifications do not result in an increase of the sewage treatment plant Rated Capacity and the existing flow process and/or treatment train are maintained, as applicable.

b. Forcemain relining and replacement with similar pipe size where the nominal diameter is not greater than 1,200mm.

1.2 Sewage Treatment Process

a. Installing additional chemical dosage equipment including replacing with alternative chemicals for pH adjustment or coagulants (non-toxic polymers) provided that there are no modifications of treatment processes or other modifications that may alter the intent of operations and may have negative impacts on the effluent quantity and quality.

b. Expanding the buffer zone between a sanitary sewage lagoon facility or land treatment area and adjacent uses provided that the buffer zone is entirely on the proponent's land.

c. Optimizing existing sanitary sewage lagoons with the purpose to increase efficiency of treatment operations provided that existing sewage treatment plant rated capacity is not exceeded and where no land acquisition is required.

d. Optimizing existing sewage treatment plant equipment with the purpose to increase the efficiency of the existing treatment operations, provided that there are no modifications to the works that result in an increase of the approved Rated Capacity, and may have adverse effects to the effluent quality or location of the discharge.

e. Replacement, refurbishment of previously approved equipment in whole or in part with Equivalent Equipment, like-for-like of different make and model, provided that the firm capacity, reliability, performance standard, level of quality and redundancy of the group of equipment is kept the same. For clarity purposes, the following equipment can be considered under this provision: pumps, screens, grit separators, blowers, aeration equipment, sludge thickeners, dewatering equipment, UV systems, chlorine contact equipment, bio-disks, and sludge digester

systems.

1.3 Sanitary Sewers

a. Pipe relining and replacement with similar pipe size within the Sewage Treatment Plant site, where the nominal diameter is not greater than 1,200mm.

1.4 Pilot Systems

a. Installation of pilot systems for new or existing technologies provided that:

i. any effluent from the pilot system is discharged to the inlet of the sewage treatment plant or hauled off-site for proper disposal,
ii. any effluent from the pilot system discharged to the inlet of the sewage treatment plant or sewage conveyance system does not significantly alter the composition/concentration of the influent sewage to be treated in the downstream process; and that it does not add any inhibiting substances to the downstream process, and
iii. the pilot system's duration does not exceed a maximum of two years; and a report with results is submitted to the Director and District Manager three months after completion of the pilot project.

2. Sewage works that are exempt from section 53 of the OWRA by O. Reg. 525/98 continue to be exempt and are not required to follow the notification process under this Limited Operational Flexibility.

3. Normal or emergency operational modifications, such as repairs, reconstructions, or other improvements that are part of maintenance activities, including cleaning, renovations to existing approved sewage works equipment, provided that the modification is made with Equivalent Equipment, are considered pre-approved.

4. The modifications noted in section (3) above are <u>not</u> required to follow the notification protocols under Limited Operational Flexibility, provided that the number of pieces and description of the equipment as described in the Approval does not change.

Schedule 'B' forms part of this Approval and contains a list of supporting documentation / information received,
reviewed and relied upon in the issuance of this Approval.

SCHEDULE 'B'

Environmental Compliance Approval (ECA) supporting documents:

1. Application for Environmental Compliance Approval (ECA) dated April 6, 2015 signed by Andrew Wildeboer, Director, 1514947 Ontario Inc. and supporting documents submitted by Novatech, Consulting Engineers.

2. Report entitled "West Capital Airpark, 1500 Thomas Argue Road, Servicing Design Brief, Volume 1 of 4" dated April 2015 prepared by Novatech, Consulting Engineers.

3. Report entitled "West Capital Airpark, 1500 Thomas Argue Road, Servicing Design Brief, Drawings, Volume 2 of 4" dated April 2015 prepared by Novatech, Consulting Engineers.

4. Report entitled "West Capital Airpark, 1500 Thomas Argue Road, Servicing Design Brief, Drawings, Volume 3 of 4" dated April 2015 prepared by Novatech, Consulting Engineers.

5. Report entitled "West Capital Airpark, 1500 Thomas Argue Road, Servicing Design Brief, Drawings, Volume 4 of 4" dated April 2015 prepared by Novatech, Consulting Engineers.

6. Report entitled "West Capital Airpark, Carp, Ontario, Phase 1, Residential, SBS Design Brief" dated April 2015 prepared by Clearford Water Systems Inc.

7. Report entitled "Wastewater Treatment and Water Storage Facility, West Capital Airpark, (Carp Airport), City of Ottawa, Stormwater Management Report" revised April 22, 2015 prepared by Novatech, Consulting Engineers.

8. Report entitled "Wastewater Treatment System, Carp Airport, Carp, Ontario" dated January 2015 prepared by Golder Associates.

Ontario
Ministry of
the Environment

Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA AND SEND A COPY TO THE WATER SUPERVISOR (FOR MUNICIPAL) OR DISTRICT MANAGER (FOR NON-MUNICIPAL SYSTEMS)

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility

(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)

ECA Number	Issuance Date (mm/dd/yy)	Notice number (if applicable)

ECA Owner	Municipality

Part 2: Description of the modifications as part of the Limited Operational Flexibility

(Attach a detailed description of the sewage works)

Description shall include:

1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:

1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name (Print)	PEO License Number

Signature	Date (mm/dd/yy)

Name of Employer

Part 4 – Declaration by Owner

I hereby declare that:

1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the *Environmental Assessment Act*.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name of Owner Representative (Print)	Owner representative's title (Print)

Owner Representative's Signature	Date (mm/dd/yy)

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this Approval the existence of this Approval.

2. Condition 2 is included to ensure that the Works are constructed in a timely manner so that standards applicable at the time of Approval of the Works are still applicable at the time of construction, to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.

4. Condition 4 is included to ensure that the Works are constructed in accordance with the approval and that record drawings of the Works "as constructed" are maintained for future references.

5. Condition 5 is included to indicate that by-passes of untreated sewage to the receiving watercourse is prohibited, save in certain limited circumstances where the failure to Bypass could result in greater injury to the public interest than the Bypass itself where a Bypass will not violate the approved effluent requirements, or where the Bypass can be limited or otherwise mitigated by handling it in accordance with an approved contingency plan. The notification and documentation requirements allow the Ministry to take action in an informed manner and will ensure the Owner is aware of the extent and frequency of Bypass events.

6. Condition 6 is imposed to establish non-enforceable effluent quality objectives which the Owner is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliance limits of Condition 7 are exceeded.

7. Condition 7 is imposed to ensure that the effluent discharged from the Works to the dry ditch meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body.

8. Condition 8 is included to require that the Works be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the Ministry.Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the Owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a

benchmark for Ministry staff when reviewing the Owner's operation of the work.

9. Condition 9 is included to enable the Owner to evaluate and demonstrate the performance of the Works, on a continual basis, so that the Works are properly operated and maintained at a level which is consistent with the design objectives and effluent limits specified in the Approval and that the Works does not cause any impairment to the receiving watercourse.

10. Condition 10 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

11. Condition 11 is included to ensure that the Works are operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider. These Conditions are also included to ensure that a Professional Engineer has reviewed the proposed modifications and attests that the modifications are in line with that of Limited Operational Flexibility, and provide assurance that the proposed modifications comply with the Ministry's requirements stipulated in the Terms and Conditions of this Approval, MOE policies, guidelines, and industry engineering standards and best management practices.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment and
Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 10th day of February, 2017

Fariha Pannu, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

HV/

c: District Manager, MOECC Ottawa District Office
Susan M. Gordon, Novatech Engineering

Appendix G

Under Separate Cover, as listed on Drawing Package Cover Page