1. BACKGROUND

The City of Cornwall invites Proposals from qualified Consulting Engineering Firms to provide engineering services for the City of Cornwall Business Park Expansion, which will include the extension of Nick Kaneb Drive from Tenth Street to Tollgate Road East, the extension of Tollgate Road East to Nick Kaneb Drive and the extension of a road corridor from the intersection of Nick Kaneb Drive and Tollgate Road easterly for approximately one (1) kilometre. The scope of work to be completed by the Proponent includes the preparation of design reports, detailed design services for the watermain, storm sewer, sanitary sewer, sanitary forcemain and pumping station, road network expansion, road network and intersection improvements, the preparation of tender specifications, the completion of a geotechnical investigation, an archeological assessment, municipal class environmental assessments, tendering services, cost estimates, construction administration, construction supervision, post-construction services, public and landowner consultation, etc.

1.1 Project Background

The City has undertaken several Environmental Assessments (EA) and construction projects in the east end of the City in order to accommodate increased development and traffic volumes:

- Nick Kaneb Dr. Extension from Second St. to Marleau Ave. (Construction - 2009);
- Marleau Ave. Widening/Improvements EA from Marlborough St. to Glenview Boul. (EA - 2012);
- Industrial Park Drive Extension (Construction - 2012);

- Cornwall Business Park Transportation Master Plan (EA - 2013);
- Marleau Ave. Widening from Marlborough St. to Alice St. (Construction - 2017); and
- Nick Kaneb Drive Extension – Marleau Avenue to Tenth Street East (Construction – 2021)

The Business Park Transportation Master Plan Environmental Study, completed in 2013, called for the expansion of the City's Business Park in the parcel(s) of undeveloped land located east of McConnell Avenue and between MTO Highway 401 and Industrial Park Drive.

With the majority of the lands sold and developed in the southern and eastern portions of the Business Park, the City examined future development expansion and transportation network possibilities in the northwestern portions of the Business Park. A new transportation link in the northwestern portion of the Business Park would provide an access to McConnell Avenue (via Tollgate Road) and the Highway 401 interchange (at McConnell Avenue). The new transportation network expansion would also include the necessary underground linear infrastructure to connect to the southern portion of the Business Park. The EA for the extension of Nick Kaneb Drive to McConnell Avenue was undertaken in 2012 and completed in 2013. The purpose of the EA was to provide a Recommended Transportation Plan within northwestern quadrant of the Business Park. The EA had the following goals:

- Improve roadway network connectivity, operations and safety within the expansion lands;
- Accommodate all modes of travel (bicycles, pedestrians, trucks, emergency vehicles and transit);
- Accommodate land development within the expansion lands of the Business Park; and

- Receive environmental clearance for the future detailed design and construction of the roadway.

The Business Park has seen extensive development over the last several years and is reaching the end of its capacity in the southern and eastern quadrants. As a result, the City is planning for the extension of Nick Kaneb Drive to Tollgate Road/McConnell Avenue in order to provide development opportunities in the northwest quadrant of the Business Park. The expansion of the Business Park will require the implementation of a transportation network to accommodate access to new development sites and provide connectivity with the existing local road network.

In 2019, the City budgeted for the extension of Nick Kaneb Drive from Marleau Avenue to Tenth Street East; the construction of this section of Nick Kaneb Drive was completed in late 2021. The continued expansion of Nick Kaneb Drive will provide for further transportation network connectivity. The final phase of the Nick Kaneb Drive Extension project will only proceed when further land sales along the corridor occur, and if the project is determined to be financially viable.

1.2 Design Considerations

The expansion of the north west quadrant of the Business Park has been separated into two key phases. The first phase consists of the extension of Nick Kaneb Drive from Tenth Street to Tollgate Road East, and the extension of Tollgate Road East from McConnell Avenue to Nick Kaneb Drive or another suitable location east of Nick Kaneb Drive. The second phase includes the extension of a road corridor east of Nick Kaneb Drive for approximately one kilometre, as well as the construction of a new sanitary pumping station.

1.2.1 Phase I – Nick Kaneb Drive Extension

The first phase of the project involves the extension of Nick Kaneb Drive from Tenth Street to Tollgate Road East and the extension and improvements to Tollgate Road from McConnell Avenue to Nick Kaneb Drive. The scope of work

includes the construction of a new road corridor complete with bicycle lanes, the extension of the recreational path network, upgrades to the existing section of Tollgate Road East and intersection improvements. The Proponent is also responsible for the design of the expansion of the recreational path network throughout the future Business Park, including but not limited to the Cedars Rapids Corridor, City of Cornwall right-of-way (ROW), the former Peanut Line and etc.

As part of the design process, a review of the existing utilities (both overhead transmission lines and buried infrastructure) will be required. Coordination with the utility companies for an extension of their networks through the proposed road corridor will also be required. Located approximately one hundred metres north of the future intersection at Tenth Street is a Trans Northern Pipeline crossing; it will be the responsibility of the Proponent to coordinate directly with the pipeline to ensure that the road corridor design meets their crossing standards.

The proposed roadway alignment also requires crossing a Canadian Pacific (CP) Rail corridor, which runs perpendicular to the proposed road network. As the rail corridor is no longer in use, the City will acquire the property parcel for the proposed road network extension. The Proponent will be responsible for coordinating with the Corporation and CP throughout the property acquisition process. Based on the information currently available, the property is considered to be contaminated; a Phase I and Phase II Environmental Site Assessment was previously completed and the Proponent and/or Geotechnical Sub-Proponent shall develop a remediation plan to be included in the tender documents.

The proposed road corridor also crosses a parcel of property owned by Cedars Rapids Ltd. which is used for their overhead head transmission line. The property is located approximately 400m North of the intersection at Tenth Street. The City currently holds a lease agreement with Cedar Rapids Ltd, where municipal

infrastructure crosses their property in other locations throughout the City. As part of the design process, the Proponent shall continually communicate with Cedars Rapids in order to ensure that the proposed road network expansion meets their standards/requirements. The Proponent will be responsible for coordinating with the Corporation and Cedars Rapids throughout the design process.

Phase I will include the construction of a new road corridor, complete with municipal services (watermain, sanitary sewer, storm sewer and/or rural stormwater management infrastructure) through undeveloped land. As part of the design process, it will be necessary to verify that the existing services on Tenth Street and/or McConnell Avenue are adequate or if any modifications to the existing services are necessary as a result of the construction of the corridor extension. A 525mm PVC sanitary sewer was constructed on Tenth Street in 2013 and extends from 300m east of the future intersection going easterly. As part of the project scope, the proposed sanitary sewer on Nick Kaneb Drive will be connected to the existing sewer on Tenth Street. A 300mm PVC watermain constructed in 2013 is located on Tenth Street, but the watermain is capped approximately 575m east of the intersection at Nick Kaneb Drive. A 200mm PVC watermain is also located on Virginia Drive; however, it is capped approximately 370m southwest of the intersection. As part of the project scope, the Proponent is responsible for connecting the new watermain on Nick Kaneb Drive to the existing main on Tenth Street/Industrial Park Drive in order to loop the water network. As part of the design process, it will be necessary to verify that the design of the municipal services meet future capacity requirements.

The Proponent is responsible for the completion of a Traffic Impact Study (TIS) as part of the project scope. The TIS shall include a review of the CN crossing on Tenth Street which is located approximately 120m southwest of the intersection at Nick Kaneb Drive. The Proponent shall evaluate the need for an overpass at

the crossing based on the anticipated increase in traffic volumes due to the road network expansion. The design and alignment of the intersection at Nick Kaneb Drive and Tenth Street shall take into consideration the possibility of an overpass adjacent to the intersection in the future.

The proposed road corridor will also involve crossing the Summerstown Swamp, which is designated as a Provincially Significant Wetland. A significant amount of coordination with all applicable environmental regulatory agencies is anticipated throughout the duration of the project.

In 2017, the project area (excluding the Summerstown Swamp) was cleared of trees and shrubbery, however all stumps and piles of brush remain on site. The Proponent shall include the removal of the existing debris as part of the construction tender for the work.

Phase I of the project also includes the improvements and extension of Tollgate Road from McConnell Avenue to Nick Kaneb Drive. Tollgate Road currently extends approximately 380m east of the intersection at McConnell Avenue. The extension of the road corridor will include the construction/extension of utilities and municipal services. The existing section of Tollgate Road East includes water and sewer services extending approximately 220m east of the intersection; both the existing sanitary sewer and watermain are 200mm diameter PVC, constructed in 1991. As part of the design process, the Proponent shall review the existing infrastructure to determine if it is adequate, or if any modifications or upgrades to the services are necessary.

Improvements to the intersection at Tollgate Road and McConnell Avenue are also included in the scope of work for Phase I. A significant increase in traffic volumes is anticipated at the intersection as a result of the road network expansion. Coordination with the Ministry of Transportation of Ontario (MTO) will be required throughout the design phase of the project, as both the extension of

Tollgate Road and the intersection at McConnell Avenue are located within an MTO Controlled Area. The intersection is located directly north of the MTO Hwy 401 interchange at McConnell Avenue, and any improvements will have a direct impact on the ingresses/egresses at the interchange. It is also anticipated that the improvements to the intersection will require minor property acquisitions in order to accommodate additional turning lanes and an overall increase in the footprint of the intersection. The Proponent will be responsible for coordinating with the Corporation throughout the property acquisition process.

The buried infrastructure in the intersection at McConnell Avenue at Tollgate Road includes a 400mm PVC watermain, constructed in 1991. The sanitary sewer on McConnell Avenue was also constructed in 1991 and consists of 250mm PVC piping flowing south. An isolated storm sewer network is located within the intersection and connects to a 675mm storm sewer that flows north of the intersection for approximately 55m and outlets into the ditch. A 300mm diameter gas main also extends along McConnell Avenue through the intersection; coordination with Enbridge will be required throughout the design process in order to ensure that the proposed improvements meet their requirements.

As part of the design process, the Proponent is responsible for the completion of two separate “Schedule B” Municipal Class Environmental Assessments. The first Environmental Assessment is for the extension of the road corridor east of the intersection of Nick Kaneb Drive and Tollgate Road, as the area was not included as part of the EA completed in 2013 for the Business Park Expansion. The second Environmental Assessment is required for the sanitary servicing of the project area. It is anticipated that a sanitary pumping station will be required on Tollgate Road, east of Nick Kaneb Drive. The Proponent will be responsible for reviewing possible sites for the proposed pumping station and determining the optimal location. Consideration must be given to future expansion of the

Business Park north of MTO Hwy 401. The estimated area for future expansion is approximately 145 hectares and runs parallel to MTO Hwy 401 from Boundary Road to McConnell Avenue. A map illustrating the extents of the future expansion is included under Section 1.3 – *Available Documents*. The Proponent shall ensure that municipal servicing systems in the project area are designed with up to twenty percent (20%) of additional capacity over and above the boundaries identified in the map in the event that zoning boundaries are amended in the future.

The extension of Tollgate Road from Nick Kaneb Drive easterly is also considered to be in an MTO Controlled Area. As such, the Proponent will be responsible for coordinating with MTO in order to ensure that the proposed road extension meets all MTO standards and requirements. The Proponent is also responsible for coordinating with MTO to determine the ideal location for the future crossing of the sanitary sewer beneath the MTO right of way. The proposed location of the future crossing must be taken into consideration when determining the optimal site for the sanitary pumping station.

In the event that the EA determines that the most feasible option at the present time is to “do nothing”, the Proponent shall complete the detailed design of the road corridor, pumping station and municipal infrastructure in the second phase of the project; however, the documents would be tendered at a later date.

1.2.2 Phase II - Tollgate Road East Extension

Phase II of the project includes the extension of a road corridor east of Nick Kaneb Drive, as per the recommended plan provided in the Environmental Assessment prepared as part of Phase I. For the purposes of the Proposal, bidders shall assume a one (1) kilometre extension. The proposed road network extension will include the construction of a new road corridor and the extension of utilities and municipal services.

1.3 Available Documents

The following drawings and reports are available for review using the link for supporting documents: (INSERT LINK)

1.3.1 Various As-Built Construction Drawings

- 1992 Sanitary Sewer and Watermain on Tollgate from STA 0+220 to STA 0+602, completed by City of Cornwall (Drawing No. 960_03 and 960_04)
- 2012 Reconstruction on Tenth Street from STA 0+720 to STA 0+930, completed by the City of Cornwall (Drawing No. 873_05)

1.3.2 Various Issued for Construction Drawings

- 2013 Virginia Drive Road Widening and Resurfacing from Tenth Street to the CN tracks, completed by City of Cornwall (Drawing No. 646_02)
- 2013 Virginia Drive Construction from CN tracks to STA 0+203.7, completed by the City of Cornwall (Drawing No. 646_03)
- 2021 Nick Kaneb Drive Extension from Marleau Avenue to Tenth Street East, completed by EVB Engineering

1.3.3 Various Council Reports and By-Laws

- 2011 By-Law to amend the Traffic & Parking by-law 069-89, Schedule XVII, Traffic Control Signals' McConnell and Tenth St. East & Tollgate Road and Commercial Driveway Access at 501 Tollgate Road, prepared by the City of Cornwall (Document No. By-law 2011-122)
- 2015 Small Communities Fund – Expression of Interest – Nick Kaneb Drive Extension, prepared by Dept. Of Infrastructure and Municipal Works, City of Cornwall (Document No. 2015-23-IMW-IP)
- 2018 By-Law to dedicate lands as public highway and name them Tenth Street East, prepared by the City of Cornwall (Document No. By-law 2018-026)

1.3.4 Existing Site Plans

- 1994 Benson Auto-Pak, 680 Tollgate Road, prepared by Menard Structures Ltd. (Drawing No. TOLLGATERD680-1994-1B)
- 2011 Boundary Properties Inc, 1500 Industrial Park Drive, prepared by Turner Fleischer Architects Inc. (Drawing No. INDUSTRIALPARKDR1500-2011-1B)
- 2011 Target Distribution, 1501 Industrial Park Drive, prepared by Crozier & Associates Consulting (Drawing No. INDUSTRIALPARKDR1501-2011-1B)
- 2016 Walmart Distribution Centre, 1501 Industrial Park Drive, prepared by Stantec Consulting Ltd. (Drawing No. INDUSTRIALPARKDR1501-2016-1B)

1.3.5 Geotechnical Information

- 1990 McConnell Ave./Ashwood Green Services Subsurface Investigation, prepared by St. Lawrence Testing (Document No. BH_106)
- 2009 Proposed Monitoring Well Plan, prepared by Ecoplans (Document No. BH_230)
- 2012 Phase I Environmental Assessment Canadian Pacific Railway Corridor, prepared by DST Consulting Ltd. (Document No. 890.01)
- 2012 Phase II Environmental Assessment Canadian Pacific Railway Corridor, prepared by DST Consulting Ltd. (Document No. 1026.01)
- 2013 Virginia Drive Geotechnical Subsurface Investigation, prepared by St. Lawrence Testing (Document No. BH_222)
- 2014 Proposed New Road, Tenth St. To Tollgate Rd., Geotechnical Subsurface Investigation, prepared by St Lawrence Testing and Inspection Co. Ltd. (Document No. BH_264)
- 2021 Geotechnical, Hydrogeological and Environmental Investigation – Nick Kaneb Drive Extension, prepared by Golder Associates Ltd.

1.3.6 Additional Reports, Studies, Presentations, etc.

- 2011 Industrial Park Drive Extension to Tenth Street – Municipal Class Environmental Assessment, completed by Genivar (Document No. 881_01)
- 2011 Proposed Widening Improvements on Marleau Avenue from Marlborough Street to Glenview Boulevard, completed by Genivar (Document No. 896_01)
- 2013 Cornwall Business Park Transportation Master Plan – Environmental Assessment Study, completed by Genivar (Document No. 953_01)
- Nick Kaneb Drive Extension Environmental Assessment Study, completed by WSP Canada Inc. (Document No. 994_01)
- 2021 Nick Kaneb Drive Extension Design Report (Final), prepared by EVB Engineering (Document No. 1396.01)

1.3.7 Pumping Station As-Built Drawings

- 2019 Fennell Crescent Sanitary Pumping Station (SPS) Upgrades and SCADA Upgrades at Queen Street and Harbour Road SPS, completed by EVB Engineering.
- 2019 Brookdale Avenue North Sanitary Servicing and SPS Construction, completed by EVB Engineering

2 ENGINEERING DESIGN SERVICES

The successful Proponent shall complete the following tasks related to the design of the Future Business Park Expansion.

2.1 Review of Existing Information

- Review all available existing drawings, reports, etc. related to the project and project area included in the link to supporting documents and summarized in Section 1.3 – *Available Documents.*

- Confirm all dimensions, condition grades, materials, equipment, elevations, etc. as described in As-Built Drawings, Service Location Sheets, reports, etc. to ensure all information used in the design is correct. The Corporation of the City of Cornwall is not responsible for any errors or omissions in the information provided to the successful Proponent. The successful Proponent is responsible for the verification of all existing documentation and shall take responsibility for all existing information.
- Carry out additional field inspections and subsurface investigations as required to assess existing conditions and to supplement the available information.
- Prior to commencing the design, the successful Proponent shall complete a pre-construction photo survey for record purposes which shall include but not be limited to: roadways, sidewalks, driveways, retaining walls, handrails, vegetation, trees, entrances, steps, porches, foundations, buildings, dwellings, pumping stations, equipment, etc. Photos shall be taken during a time that weather will not impact the photos. The pre-construction photo survey shall accurately indicate the condition of all pre-existing features. The pre-construction photo survey shall be provided to the Corporation upon completion for record purposes.
- Review existing and proposed Site Plans, Servicing Plans, Servicing Reports, etc., for the properties within the project area and incorporate into the design as required.
- Review the Environmental Assessment for the Industrial Park Drive Extension to Tenth Street Completed by Genivar in 2011.
- Review the Environmental Assessment for the Cornwall Business Transportation Master Plan completed by Genivar in 2013.

- Review the Environmental Assessment for the Nick Kaneb Drive Extension from Marleau Avenue to Tenth Street East completed by Genivar in 2014.
- Review the City's recently completed pumping station designs including the SCADA system design, PLC design, programming and controls at the Fennell Crescent Pumping Station, Queen Street Pumping Station, Harbour Road Pumping Station and Brookdale Avenue Pumping Station to ensure continuity in the design of the proposed pumping station. The design of the Business Park Pumping Station shall be of similar design to the Fennell Crescent and Brookdale Avenue Pumping Stations.
- Review the City of Cornwall Sewage Pumping Stations Electrical, Control and SCADA Systems Preliminary Design Report completed by Hollen Controls Ltd., in 2013, to ensure continuity in the design of the proposed pumping station.
- Review the Geotechnical Investigation Report for the Proposed Road Extension completed by St. Lawrence Testing and Inspection Co. Ltd.
- Review the Phase I and Phase II Environmental Assessments prepared by DST Consulting for the parcel of land currently owned by CP Rail and advise if additional field investigations are required.
- Review the scope of work of all current and/or future City of Cornwall capital works projects and identify possible impacts on the project.

2.2 Topographic Survey

- The Corporation has completed an aerial and topographic survey for the Future Business Park Expansion.
- The Corporation's surveyor shall provide the following surveys to the Proponent:
    - Topographic Survey based on Aerial and Field Surveys

- Colour Aerial Photos
- Comprehensive Underground Utility Survey
- Comprehensive Boundary Survey
- Title Reports

- The Proponent shall coordinate any additional survey work required with the Corporation. City staff will complete any additional incidental survey work required and provide the information to the Proponent. The Proponent shall be responsible for coordinating additional survey work on private property to be completed by City staff.
- The Proponent shall review the provided topographic survey and ensure that all necessary information has been included.
- The Proponent shall be responsible for coordinating with utility companies (Cornwall Electric, Bell, Cogeco, Rogers, Union Gas, TNPI, Cedar Rapids, etc.) to confirm the location of all utility plants. Additionally, the Proponent shall coordinate with City staff in conjunction with the utility companies in order to obtain survey information for utility owned buried infrastructure. The Proponent shall be responsible for adding the existing utilities to all relevant design drawings.
- The survey will be provided to the successful Proponent in the NAD83 coordinate system in an AutoCad Civil 3D format, consisting of 3D breaklines and points.
- The Proponent shall prepare the base plans using the survey information provided by the City; however, the Proponent shall be responsible for verifying the accuracy of the information provided.

2.3 Property Acquisition Coordination

- A number of property acquisitions may be required as part of the project, including, but not limited to the intersection at Tollgate Rd. and McConnell Ave and a former Canadian Pacific (CP) rail line located approximately 100m north of Tenth Street. The City will retain an Ontario Land Surveyor (OLS) for the purpose of completing legal boundary surveys and preparing any corresponding legal reference plans required for any property acquisitions within the project area.
- The Proponent shall prepare Land Acquisition Plans for each property parcel indicating the property acquisition requirements. Plans shall include the following details:
    - Property description and owner information
    - Municipal address
    - ‘Before’ and ‘After’ property lines (including total property area and area of property being acquired)
    - Easements
    - Location of buildings and notable landscaping features
    - A copy of the plan overlaid with orthoimagery
- The Proponent shall coordinate with the City and OLS throughout the property acquisition process, and provide recommendations as required.
- The Proponent shall review and verify that the draft Reference Plans provided by the OLS meet the requirements specified in the Land Acquisition Plans prepared by the Proponent. Should any variations occur, based on site-specific conditions (as determined by the OLS), the Proponent shall coordinate with the OLS to determine the revised extents and adjust the detailed design drawings as required.

2.4 Geotechnical Services

2.4.1 Geotechnical Investigation of Project Area

- Review the existing geotechnical reports and borehole logs provided by the City along the future Business Park Expansion. All available geotechnical reports and borehole logs are included as part of the RFP documents, refer to Section 1.3 – *Available Documents,* for additional information.
- Complete a geotechnical investigation for the Future Business Park Expansion, taking into consideration the geotechnical work previously completed along the corridor. Additionally, the Geotechnical Proponent must be registered with the Ministry of Transportation of Ontario (MTO) Vendors Registry as a Consultant under the following Pavement Engineering sub-categories
    - Soils and Pavement Investigations – Complex
    - Pavement Design – High Complexity
- The Proponent shall develop a geotechnical investigation program to supplement the existing information provided by the City. The geotechnical services shall be provided in accordance with the Canadian Highway Bridge Design Code (CHBDC) and the “Guideline for Professional Engineers Providing Geotechnical Engineering Services” published by the Professional Engineers of Ontario (PEO).
- Pre-consult with the MTO to establish the geotechnical investigation requirements for the proposed improvements to the intersection at Tollgate Road and McConnell Avenue, as well as crossings of MTO Hwy 401 for the proposed sanitary sewer in the future. Review the existing available geotechnical information with MTO and determine the requirements for additional geotechnical investigation. The Proponent shall review the MTO “Guidelines for Foundation Engineering – Tunnelling Specialty for Corridor

Encroachment Permit Application". The geotechnical investigation and a corresponding report shall be completed in accordance with MTO guidelines.

- The Proponent and/or geotechnical Sub-Proponent shall recommend the location, quantity and depth of additional boreholes, pavement cores, rock cores, granular samples, etc. required to properly characterize the nature of existing fill materials, classify existing soils, determine the nature/strength of the sub-grade soils for stable open cutting and supported excavation purposes and methods, trenchless technologies, as well as groundwater conditions for the proposed roadway extension and improvements.
- The Proponent and/or geotechnical Sub-Proponent shall assume a minimum of forty (42) boreholes at a depth of six metres in the proposed Business Park Expansion area. Boreholes will be required in the following areas:
    - Intersection of Tollgate Road and McConnell Ave (4 ea)
    - Existing Tollgate Road East (2 ea)
    - Tollgate Road Extension (8 ea)
    - Nick Kaneb Drive Extension (8 ea)
    - Future Intersection at Tenth Street (2 ea)
    - Individual Property Parcels within Project Area (16)
    - MTO Corridor at Proposed Future Crossing Locations (2)
- The Proponent shall provide a unit rate ($/vertical metre) where the recommended bore depth exceeds six (6) vertical metres, where deemed necessary by the Proponent, the geotechnical Sub-Proponent and the Corporation. Please note that no clearing is required. All paths have been cleared to provide access.
- The Proponent shall coordinate the installation of Surface Monitoring Points with the geotechnical Sub-Proponent as required.

- The geotechnical field investigation shall include the following at a minimum:
    - Obtain clearance from the Corporation prior to conducting any drilling;
    - Secure all necessary permits and access agreements in order to conduct drilling;
    - Obtain clearances for all underground utilities and services from the relevant agencies prior to drilling including the MTO, MECP, MNRF, TNPI, Cedars Rapids and RRCA;
    - Direct the drilling, sampling and testing work on site, but not limited to, using drilling equipment suitable for mandatory performing Standard Penetration Testing (SPT) and equipped to test the undrained shear strength of cohesive soils where encountered and other testing as recommended by the Proponent;
    - Carry out work in a safe manner in accordance with the Occupational Health and Safety Act (OHSA) and with the Ontario Traffic Manual for Temporary Conditions, Book 7, Field Edition of the Ministry of Transportation Ontario (MTO) using appropriate signs, devices and traffic control persons as required for the applicable layouts;
    - Backfill boreholes and asphalt cores thoroughly in several lifts and ensure adequate compaction is performed in order to prevent settlement. Within paved areas, seal borehole and asphalt cores with asphalt to match existing thickness;
    - Measure and record the water bearing zone(s) and the static groundwater levels which are to be included in each borehole log;
    - Survey the locations and ground elevations of all boreholes, asphalt cores, test pits, etc., using benchmarks available on-site;

- Notify the Corporation of findings which may indicate areas of potential soil or groundwater contamination.

- The borehole logs, soil profiles and laboratory testing shall include the following mandatory information:

  Identification, location, ground elevation, type of boring and/or coring;

  - Date of Work;
  - Details of asphalt cores and soils – location and type of samples;
  - N values from SPT at changes of strata and at 0.6 metre maximum intervals in any case;
  - Groundwater levels (as measured in temporary flexible standpipes or observes within the borehole);
  - Moisture content, grain size distribution, Atterberg limits testing to adequately characterize roadway granular base and subbase and subgrade soils;
  - Shear strength values for cohesive strata;
  - Artesian conditions if encountered;
  - Rock Profile – if auger refusal is encountered within the requested borehole depth, then coring must be carried out to prove bedrock or boulder (minimum sample 1.5 metres of cored bedrock);
  - The Proponent and/or Sub-Proponent should also augment the investigation and/or testing subject to other information that is recommended.

2.4.2 Geotechnical Investigation Report

- The Proponent and/or geotechnical Sub-Proponent shall complete a Comprehensive Geotechnical Investigation Report for the proposed Business Park Expansion. The geotechnical report shall include the borehole and

asphalt core logs showing groundwater levels, SPT numbers, mandatory laboratory test results and other results as required, borehole/asphalt core location plans and/or borehole/core location tables as well as geotechnical engineering, design and construction recommendations as described herein.

- The Comprehensive Geotechnical Investigation Report shall include:
    - General site and subgrade preparation;
    - Materials (soil parameters, reusability, compaction requirements, etc.);
    - Excavations (side slopes, stability, shoring, tunnelling, protection, blasting, etc.);
    - Soil Classification
    - Groundwater presence and static levels;
    - Sewer trench bedding, cover and backfill;
    - Watermain, Storm and Sanitary sewer and forcemain installation design parameters including bearing capacities, earth pressures, etc.
    - Watermain and sanitary sewer installation design parameters for the MTO Highway 401 crossing (infrastructure shall be capped north of the MTO property limits).
    - Pumping station design parameters including bearing capacities, earth pressures, seismic design criteria, etc.
    - Pavement structure and/or pavement reinstatement design at the intersection of Tollgate Road and McConnell Avenue, the existing section of Tollgate Road East, Tollgate Road Extension, Nick Kaneb Drive Extension and intersection of Nick Kaneb Drive and Tenth Street;

- Comprehensive review of proposed roadway cross-sections, complete with recommendations. The review must include consideration of poor soil conditions in project area and provide possible innovative construction methodologies for the roadway in an effort to reduce costs while maintaining the quality of the road structure.
- Review of the stability and settlement of sewers, roadways, etc. as a result of poor soil conditions – including a slope stability analysis (If required)
- Construction staging/phasing;
- Construction considerations (subgrade protection, dewatering methods, etc.);

- The Proponent/Sub-Proponent shall take into consideration that the soil conditions are expected to be poor. The City will not consider any additional fees resulting from poor soil conditions by the Proponent/Sub-Proponent.
- The Proponent shall circulate the detailed design drawings to the geotechnical Proponent/Sub-Proponent for review and commentary at all design milestones (30%, 60%, 90%, 100%, IFT, IFC, etc.). The geotechnical Proponent/Sub-Proponent shall provide commentary on the design drawings as required and highlight any geotechnical considerations.
- The City will not pay additional fees resulting from design modifications after the geotechnical report and reviews are complete.
- The geotechnical report shall include a review of different alternatives for the construction of the roadway in poor geotechnical conditions, taking into consideration the overall project cost.
- The geotechnical report shall include the existing borehole logs, geotechnical information, etc. from previous projects. The Proponent shall use the

information and recommendations provided in these reports as the Proponent deems appropriate.

- The Proponent shall be responsible for securing all required approvals from the TNPI, RRCA and the City, as required, in order to complete the boreholes. The Corporation will pay any necessary application/permit fees directly.

2.4.3 Independent Geotechnical Report for MTO

- The Proponent shall provide an Independent Geotechnical Investigation Report for submission/approval from the MTO for all work related to the improvements of the intersection at Tollgate Road and McConnell Avenue, the extension and improvements to Tollgate Road adjacent to the MTO Hwy 401 corridor, as well as the crossings of the sanitary sewer within the MTO corridor. The report shall include the geotechnical testing results, geotechnical recommendations regarding the proposed construction and provide recommendations regarding trenchless methodologies. The Proponent shall include all testing and discussion necessary in this report. The Independent Geotechnical Investigation Report for the MTO shall include any relevant geotechnical information from previous reports conducted in the area. The Proponent shall also be responsible for any required modifications to the Settlement Monitoring Plan as a result of consultation and review with the MTO.

2.4.4 Permit to Take Water

- The Proponent/Sub-Proponent shall assume that a Permit to Take Water (PTTW) will be required. The successful Proponent shall include the required geotechnical and hydrogeological services necessary to determine the need for a PTTW according to the Ontario Water Resources Act (OWRA) Section 34 and Ontario Regulation 387/04 – *Water Taking and Transfer.*

2.4.5 Phase II Environmental Site Assessment

- The Proponent shall complete a Phase II Environmental Assessment for the proposed road network extension at the southeast quadrant of the intersection at Tollgate Rd. and McConnell Ave. in accordance with all applicable guidelines to determine whether contaminants and/or designated substances are present.
- The Proponent shall complete the Phase II ESA in accordance with requirements specified in O.Reg 153/04 and 511/09.
- The Proponent shall review existing as-built information and reports to identify all past and present uses of the site.
- Prepare a detailed report outlining the results of the Environmental Assessment.
- A Sampling and Analysis Plan and Soil Characterization Report shall be prepared as part of the Phase II ESA and meet the requirements specified in O.Reg 406/19 and the MECP's *Rules for Soil Management and Excess Soil Quality Standards* (November 2019).
- Please note that the Proponent is to assume that one (1) monitoring well and two (2) boreholes will be required for the Phase II Environmental Site Assessment and that boreholes/monitoring wells will be paid under each of their respective items.

2.4.6 Removal and Disposal Plan

- Determine the extent of any contaminated material in the project area and prepare a Removal and Disposal (R&D) Plan to be included in the contract documents. Potential areas of contamination include but are not limited to the CP Rail Property and the property located at the southeast quadrant of the intersection of McConnell Avenue and Tollgate Road.

The R&D Plan shall be complete with drawings identifying the anticipated extents of contamination and site-specific instructions for decontamination and reuse as per O. Reg. 406/19 – *On-Site and Excess Soil Management.*

2.4.7 Geotechnical Investigation Fee Summary

- The Proponent/Sub-Proponent shall provide a breakdown of costs for the geotechnical services as per the Fee Schedule shown below:

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL PRICE
1	Review of Existing Geotechnical Information Provided by the City	1	LS	$_____	$_____
2	Boreholes within Future Business Park Expansion Area *(Assumed Depth – 6m)*	40	EA	$_____	$_____
3	Boreholes within MTO Corridor-Highway 401 *(Assumed Depth – 6m)*	2	EA	$_____	$_____
4	Comprehensive Geotechnical Investigation Report for the Future Business Park Expansion	1	LS	$_____	$_____
5	Coordinate and Secure All Required Approvals from TNPI, Cedar Rapids, RRCA and City	1	LS	$_____	$_____
6	Permit to Take Water (PTTW)	1	EA	$_____	$_____
7(P)	Rock Coring	10	VM	$_____	$_____
8	Independent Geotechnical Investigation Report for MTO	1	LS	$_____	$_____
9	Phase II Environmental Assessment	1	LS	$_____	$_____
10	Monitoring Wells for Phase II Environmental Assessment	1	EA	$_____	$_____

11	Boreholes for Phase II Environmental Assessment *(Assumed Depth – 10m)*	2	EA	$_____	$_____
12(P)	Additional Boreholes (as required)	10	VM	$_____	$_____

**The table above is for information purposes only. Proponents are to include unit pricing and total pricing as part of the cost breakdown*

- Borehole items shall include utility locates, borehole drilling, traffic control, coordination, disbursements, etc. Geotechnical Proponent shall be compensated based on the actual number of boreholes completed, or by the vertical metre (where applicable).
- The Comprehensive Geotechnical Investigation Report items shall include sample collection, laboratory testing, analysis, coordination, professional fees, disbursements, etc. The geotechnical Proponent shall be compensated based on the actual number of report(s) completed. The City may elect to have the Geotechnical Report peer reviewed prior to issuing the tender. The Proponent shall include all fees associated with the peer review process in their submission.
- The Permit to Take Water (PTTW) item shall include all geotechnical work, hydrogeological work, coordination, professional fees, disbursements, etc. needed in order to secure PTTW approval as required. Proponent shall be compensated based upon the actual number of permits approved.
- The Rock Coring item shall include rock coring, sample collection, laboratory testing, analysis, coordination, laboratory testing, analysis, coordination, disbursements, etc. The geotechnical Proponent shall be compensated based upon the vertical metre of actual rock coring completed.
- The Phase II Environmental Site Assessment (EA) item shall include all laboratory testing fees, coordination, professional fees, disbursements, etc.

needed in order to complete the Phase II EA as required. Proponent shall be compensated based upon the actual number of environmental assessments completed.

  - Boreholes required for the Phase II EA shall be paid under the applicable borehole item; boreholes shall be ten (10) metres in depth.
  - Monitoring wells required for the environmental site assessment shall be paid under the applicable monitoring well item.

- The Monitoring Well item shall include all hydrogeological work, laboratory testing, analysis, coordination, disbursements, etc. The Proponent shall be compensated based upon the number of monitoring wells installed.
- The Proponent shall not include any costs in the geotechnical Fee Schedule provided above. The costs associated with project management, coordination, analysis, review, QA/QC, etc. shall be included in the Proponent's overall Fee Schedule/Work Plan.
- The Proponent shall include a copy of the Geotechnical Fee Schedule with all invoices; the Proponent will be paid based on actual quantities.

2.5 Stage 2 Archaeological Assessment

As per the recommendations in the 2013 Environmental Assessment of the project area, the Proponent is responsible for the completion of a Stage 2 Archaeological Study in the areas specified in the 2013 EA. Additional information regarding the extents and requirements associated with the archaeological assessment are available in the EA. The assessment must be completed by a Consultant Archeologist licensed in the Province of Ontario.

The Consultant Archaeologist is responsible for the completion of all work associated with a Stage 2 Archaeological Assessment in accordance with the *2011*

Ministry of Tourism and Culture - Standards and Guidelines for Consultant Archaeologists.

2.6 Utility Coordination

- Identify each of the utility companies located within the project area.
- Coordinate with all relevant utility companies (Cornwall Electric, Bell, Cogeco, Rogers, Union Gas, Enbridge, Trans Northern Pipeline, Cedar Rapids, etc.).
- Collect all available Utility Plant As-Built Drawings from the relevant utility companies.
- Confirm location of all existing utility plants and prepare a Composite Utility Plan (CUP). Both existing utilities and any proposed relocations and/or network expansions must be shown on all relevant design drawings.
- All communications with utility companies shall be carefully documented throughout the design phase and included in the Final Design Report; all documentation/correspondence compiled throughout the construction phase must be submitted to the City with the Post-Construction document package.
- Conduct Utility Coordination Meetings, with utility companies as needed, at the City of Cornwall's Infrastructure & Municipal Works office, located at 1225 Ontario Street, Cornwall, Ontario, K6H 4E1. Additionally, coordinate any required field visits necessary in order to ensure that proposed utility relocations meet the requirements of all utility companies involved.
- The Proponent shall coordinate with each of the respective utility companies to determine the extent of utility daylighting required to provide an accurate representation of the type/location/elevations of existing buried infrastructure within the project area. The Proponent will complete the daylighting under the supervision of the City and respective utility company. All invoices will be paid directly by the City.

- Complete QA/QC review of As-Built information, design information, etc. provided by the utility companies. Complete any necessary field review/verification as required.
- Identify any utility conflicts within the proposed work area and coordinate any required utility relocation with each respective utility company. If required, complete the design of any required utility relocations, temporary or permanent supports, etc.
- The Proponent shall act as Lead Coordinator for the extension of the utility corridor through the new road network extensions along Tollgate Road East and Nick Kaneb Drive. The Proponent shall ensure that the proposed relocations and/or extension of the network meet the requirements/needs of each of the respective utility companies.
- The Proponent is responsible for including any utility requirements in the detailed design drawings and preparing a Composite Utility Plan and any tender specifications required.
- Continually consult with utility companies throughout the design process to ensure that each of the utilities have a thorough understanding of the project scope and that the proposed design meets utility company minimum standards/clearances for both overhead transmission lines and buried infrastructure. Special consideration must be given to the design of the proposed road network beneath the Cedar Rapids Transmission line and above the Trans-Northern pipeline.
- The proposed road corridor for the Nick Kaneb Drive extension crosses the Cedars Rapids Transmission Line approximately 130m north of the intersection at Tenth Street. The Proponent shall prepare all drawings/documentation required in order to update the leasing agreement that the City holds with Cedars Rapids Ltd.

- The Proponent shall coordinate directly with Cedar Rapids to determine their minimum requirements regarding design and construction of the road network extension through their corridor.
- The Proponent shall circulate the detailed design drawings to each of the respective utility companies for review and commentary at all design milestones (30%, 60%, 90%, 100%, IFT, IFC, etc.).
- Provide the City with a detailed schedule for completion of the utility companies portion of the work, including scheduling and phasing for each utility companies work. Where required, provide a timeline for the completion of utility works within the construction schedule and coordinate with each of the respective utility companies to verify the accuracy of proposed timelines.
- Verify that utility relocations and/or new installations do not conflict with any proposed future development.
- Act as liaison between the various utility companies, as needed, to ensure any proposed relocations and/or new installations meet the needs of each of the respective utility companies.
- Review cost estimates submitted by utility companies for any relocations, temporary supports, servicing, etc.; verify that proposed relocation solutions are the most economically feasible option available.
- Continually coordinate and monitor all work to be completed by utility companies for the duration of the project to ensure all utility work is completed on schedule.
- The Proponent shall coordinate and secure any necessary information, approvals, etc. from the utility companies such that the design and construction phases of the project remain on schedule.

2.7 Ministry of Transportation of Ontario (MTO) Coordination

The intersection at McConnell Avenue and Tollgate Road, as well as the extension and improvements of Tollgate Road East are located within an MTO controlled area. The Proponent is responsible for coordinating with MTO continuously throughout the design process to ensure that the proposed road network improvements/expansion meet MTO standards. It is anticipated that a significant amount of coordination with MTO will be required for the proposed improvements to the intersection at Tollgate Road and McConnell Avenue, due to the proximity of the intersection to the MTO Hwy 401 interchange at McConnell Avenue.

- The Proponent shall pre-consult with MTO prior to commencing the design phase of the project in order to gain a thorough understanding of MTO standards and requirements – both in general and specific to the project area.
- The Proponent shall act as Lead Coordinator with MTO throughout the design and construction of the Future Business Park Expansion.
- As indicated in Section 2.12 – *Permits and Approvals*, the Proponent is responsible for preparing all necessary permits required for work taking place within MTO's jurisdiction.
- The Proponent shall circulate the detailed design drawings to MTO for review and commentary at all design milestones (30%, 60%, 90%, 100%, IFT, IFC, etc.).
- Incorporate any recommendations/requirements from MTO into the proposed designs for the intersection improvements and road network expansion.

2.8 Environmental Agency Coordination

- The Proponent shall act as the Lead Coordinator between the various environmental agencies that must be consulted as part of the design and construction of the Future Business Park Expansion.
- The Proponent shall verify the requirements of each of the respective environmental agencies (MNRF, RRCA, DFO, MECP) that must be consulted

throughout the design process. All requirements specified by the various environmental agencies must be incorporated into the detailed design.

- The Proponent shall complete a detailed review of the Species at Risk (SAR) located within the project area (as identified in the 2013 EA), specifically within the area identified as a Provincially Significant Wetland.
- The Proponent shall complete all required field investigations of the project area in order confirm that there have been no changes to the SAR identified in the EA. All field investigations shall be completed by Qualified Persons.
    - If changes to the SAR within the project area are noted, the Proponent shall prepare a technical memorandum summarizing the changes, complete with recommendations/mitigation strategies in order to protect all impacted SAR both during construction activities and following the completion of the road network expansion.
- If it is determined that the Summerstown Swamp (Provincially Significant Wetland) supports fish habitat, the Proponent shall complete a detailed fish survey within the project area.
    - The Proponent shall complete the DFO Aquatic Effects Assessment, which is included as part of *Fisheries and Oceans Canada* Pathway of Effects diagrams/tools.
    - The Proponent shall be responsible for the preparation of all documentation required for a DFO Request for Review and/or Fisheries Act Authorization, if required.
    - The Proponent shall prepare a technical memorandum outlining Impacts to Fish and Fish Habitat and mitigation strategies.
- Consult with MNRF, DFO and RRCA to determine any best practices for design and construction of a road corridor within a provincially significant

wetland and incorporate the recommendations into the detailed design drawings.

- The Proponent shall follow the recommendations and best practices outlined in the Provincial Policy Statement (2020) and Ontario's Biodiversity Strategy 2011: Protecting What Sustains Us.
- The Proponent shall circulate the detailed design drawings to the various environmental agencies for review and commentary at all design milestones (30%, 60%, 90%, 100%, IFT, IFC, etc.).
- All communications with Environmental agencies shall be carefully documented throughout the design phase and included in the Final Design Report; all documentation/correspondence compiled throughout the construction phase must be submitted to the City with the Post-Construction document package.

2.9 Municipal Class Environmental Assessments

In 2013, a "Schedule C" Municipal Class Environmental Assessment was completed for the Cornwall Business Park Expansion (*Cornwall Business Park Transportation Master Plan Environmental Assessment EA Study*). The EA included the extension of Tollgate Road from McConnell Avenue to Nick Kaneb Drive and the proposed Nick Kaneb extension from Tollgate Road to Tenth Street. As part of the scope of the current project, the Proponent is responsible for the completion of two additional Municipal Class Environmental Assessments.

The extension of the road corridor from Nick Kaneb easterly for approximately 1.0km was not included in the 2013 EA; as such, the Proponent is responsible for the completion of a "Schedule B" Municipal Class Environmental Assessment for the extension of the road corridor. The Proponent is responsible for reviewing all applicable Schedules to ensure that the correct schedule is selected. As indicated in the MCEA website, the Proponent shall plan the project in

accordance with all applicable requirements but may document the planning process in a single project file. As part of the EA process, the Proponent shall consider the following options for the proposed road corridor extension east of Nick Kaneb Drive:

- Extension of Tollgate Road East for approximately one (1) kilometre;
- Extension of a new roadway east of Nick Kaneb Drive midway between the top of the S-curve and Tollgate Road East (approximately 275m south of Tollgate Road East);
- Extension of Tollgate Road East for approximately one (1) kilometre and the extension of a new roadway east of Nick Kaneb Drive midway between the top of the S-curve and Tollgate Road East with a P-Loop connecting the new roadways;
- Do Nothing.

The Proponent shall give due consideration to the “Do Nothing” option for the extension of the roadway, as the cost implications of the extension may outweigh the benefits to the Corporation.

The Proponent shall complete a separate “Schedule B” Municipal Class Environmental Assessment for the sanitary servicing of the extents of proposed Business Park Expansion, as the 2013 EA related to the Road Network only. The Proponent shall assume that a sanitary pumping station will be required in the project area. It is anticipated that the pumping station will service both the northwest quadrant of the Business Park as well as the future development area located north of MTO Highway 401. Refer to Section 1.3 – *Available Documents* for the link to a map that outlines the extents of the future expansion. The EA shall review and select the optimal location for the proposed sanitary pumping station.

The Proponent shall be responsible for completing the environmental assessments in accordance with the requirements indicated in the *Municipal Class Environmental Assessment (MCEA) Manual.* The Proponent is responsible for completing all facets of the EA, including but not limited to the following components:

- Public Consultation – prepare all correspondence with stakeholder and hold all required meetings, public information sessions, negotiations and presentations required.
- Site Investigations and Field Reviews – complete all necessary field reviews and site investigations required within the project area for the completion of the EA.
- Complete a detailed evaluation of alternative solutions.
- The sanitary pumping station site selection process shall consider the future expansion area north of MTO Highway 401, project phasing, minimizing the depth of the wet well, length of forcemain required, etc.
- Prepare an Environmental Study Report to document the findings of the EA.

As indicated in the MCEA Manual, should the lapse of time between the filing of the Environmental Study Report and the implementation of the project exceed ten (10) years, a review of the EA will be required. As the EA for the Business Park Expansion was completed and filed for review in January 2013, should the tendering and construction of the project be delayed, a review of the 2013 EA will be required.

The review process shall include an examination of the planning and design approaches to ensure that the project and mitigation measures are still valid given the current planning context. The Proponent is responsible for undertaking all work associated with the review and the preparation of a report summarizing the findings of the review. The Proponent shall submit the report as an addendum to the

Environmental Site Report so that it is available for public record. The addendum shall be provided to the public and regulatory agencies for review and response, as per the requirements within the MCEA Manual.

2.10 Traffic Impact Study

- Coordinate the traffic control required to complete the required field measurements, inspections, geotechnical investigation and utility daylighting in accordance with OTM Book 7. The cost associated with traffic control for this work is to be included in this item. Coordinate all traffic control with the City of Cornwall's Traffic Section.
- The Proponent shall complete a Traffic Impact Study (TIS) for the road network expansion/extension. The TIS shall include the following components:
    - Project Description
    - Study Area
    - Time Period for Analysis
    - Existing Conditions
    - Background, Site Generated and Total Traffic Demand
    - Evaluation of Impacts of Site Generated Traffic
    - Improvement Alternatives and Mitigation Measures
    - Recommendations
- The TIS shall review the proposed road network design(s) and provide any further recommendations to be incorporated into the design.
- The TIS shall include a comprehensive review of the following intersections:

- Tollgate Road and McConnell Avenue intersection with proposed traffic patterns. All necessary improvements to the intersection shall be identified as part of the TIS.
- McConnell Avenue and MTO Highway 401 intersection (on/off ramps); the review shall include a determination of the improvements necessary to accommodate long combination vehicles (LCV).
- Nick Kaneb Drive and Tenth Street; the review shall include a determination of any necessary improvements to Tenth Street East, including a review of the demand for a signalized intersection.
- Nick Kaneb Drive and Tollgate Road East; the review shall include a determination of the minimum requirements of the proposed intersection, including a review of the demand for a signalized intersection.

- The TIS shall include a warrant analysis for an overpass at the CN Rail crossing at Tenth Street East, located west of the future intersection at Tenth Street East and Nick Kaneb Drive. The review shall include a determination of when the overpass is expected to be required.
- A TIS shall be prepared for the construction stage for both Phase I and Phase II of development. The TIS shall include a review of the various traffic control/staging components of the project, the impacts of proposed detour routes and an evaluation of the various alternatives in order to minimize disruption to traffic.
- The TIS shall be completed by a qualified and experienced Transportation Engineer, licensed in the Province of Ontario.

- Updated intersection layout drawings (refer to the list of intersections above) shall be prepared by the Transportation Engineer based on the recommendations in the TIS.
- The TIS shall be included as an Appendix in the final design report.
- Coordinate with the City of Cornwall Traffic Department in the development of the TIS.
- The Proponent shall prepare a separate TIS for the project areas that are located within an MTO controlled area. The TIS shall meet the requirements specified in the MTO *Traffic Impact Study Guidelines* (September, 2014).
- Prepare a Traffic Control Report based on the findings and recommendations in the study.
- Submit the Traffic Control Report to the MTO, if required, for work being completed within the MTO corridor.
- Review upcoming City capital projects and account for any traffic related impacts in the Traffic Control Reports.

2.11 Design Services

2.11.1 General Design Services

- Complete the detailed design for the Future Business Park Extension, as described herein:
- Prepare detailed design drawings and construction specifications for the proposed road network improvements and extension(s). Detailed design drawings shall be prepared, at minimum, for the following components of the Future Business Park Expansion:
    - Improvements to McConnell Avenue at Tollgate Road Intersection;
    - Rehabilitation and Widening of the existing Tollgate Road corridor;

- Extension of Tollgate Road from the east limits of the existing corridor to Nick Kaneb Drive
- Extension of Nick Kaneb Drive from Tollgate Road to Tenth Street;
- Extension of Tollgate Road from Nick Kaneb Drive to the East Limits of the Business Park Expansion;
- Proposed Sanitary Pumping Station, Forcemain, Sanitary Sewer Network;
- Water Network Extension (Including Looping to the Existing Watermains on Tenth Street/Industrial Park Drive and McConnell Avenue);
- Storm Sewer Network and/or Culverts, Drainage Ditches, Etc.;
- Composite Utility Plans;
- Line Painting;
- Details and OPSD's;
- Landscaping and Tree Planting Plan;
- Detailed Grading Plans;
- MTO Hwy 401 Crossing Drawings;
- Recreational Paths;
- Sediment and Erosion Control Plans;
- Note: The City of Cornwall will provide Street Lighting and Traffic Signal Drawings; the Proponent is responsible for incorporating them into the drawing package.

- Prepare and update construction cost estimates as the design progresses.
- Detailed Design Drawings shall be submitted to the City of Cornwall for review at the following stages:

- 30% Design (PDF, CAD)
- 60% Design (PDF, CAD)
- 90% Design (PDF, CAD)
- 100% Design (PDF, CAD)
- Issued for Tender (PDF, CAD)
- Issued for Construction (PDF, CAD)
- As-Built (PDF, CAD)

- Specifications shall be submitted to the City of Cornwall for review at the following stages:
    - 60% Design (PDF, Word)
    - 90% Design (PDF, Word)
    - 100% Design (PDF, Word)
    - Issued for Tender (PDF, Word)
    - Issued for Construction (PDF, Word)
- Cost estimates shall be provided to the City of Cornwall for review at the following stages:
    - 30% Design (PDF, Excel)
    - 60% Design (PDF, Excel)
    - 90% Design (PDF, Excel)
    - 100% Design (PDF, Excel)
    - Issued for Tender (PDF, Excel)
    - Issued for Construction (PDF, Excel)
- Construction specifications shall be completed in City of Cornwall/OPS standard templates.

- The City shall be responsible for the printing of all “Issued for Tender” and “Issued for Construction” drawing sets and contract specifications.
- All “Draft” and “Final” submission described herein shall be reviewed by City staff.
- All drawings, specifications, reports, memorandums, etc. must be signed and stamped by a Professional Engineer licensed in the Province of Ontario.
- Specifications shall be prepared based on OPS and City of Cornwall standards. The Proponent shall complete the Form of Tender (Schedule of Unit Prices) to be included in the tender document. The tender shall be prepared as an OPS unit rate contract.
- Tender specifications shall comply with the City’s Purchasing Policy.
- All design drawings shall be prepared in accordance with the City of Cornwall, MECP, OPS, and RRCA standards.
- The Proponent shall prepare Construction Phasing and Sequencing Drawings as necessary.
- All design drawings shall include property limits, easements, sanitary sewers, storm sewers, forcemain, watermain, roadway, ditches, sidewalks, driveways, culverts, utilities both above and below ground, dwellings, structures, entrances, pavement markings, traffic signs, trees/vegetations, etc.
- The Proponent shall prepare Erosion and Sediment Control Plan drawings that include detailed requirements for construction dewatering within environmentally sensitive areas.
- The Proponent shall prepare a Composite Utility Plan (CUP) and any necessary utility relocation plans.
- Grading Plans shall be provided for all works.

- Incorporate Street Lighting and Traffic Signal Upgrades/Plan provided by the City into the design drawings and contract specifications.
- Review all available drawings, specifications, reports, etc. pertaining to the project. The Proponent shall conduct site visits as required to confirm accuracy of the information provided. Any costs associated with redesign work as a result of a failure to review available documents or conduct necessary site visits will not be paid by the Corporation.
- The Proponent shall continually monitor and effectively control project costs to ensure the project remains within budget.

2.11.2 Quality Assurance and Quality Control (QA/QC)

- The Proponent shall conduct a QA/QC review of all “Draft” and “Final” submissions as described herein to ensure high quality services are provided. The Proponent shall be fully responsible for the QA/QC of all project deliverables including any Sub-Proponents.
- The QA/QC of all project deliverables shall be completed by a Senior Engineer with a minimum of ten (10) years experience on projects of a similar scope and who are not directly involved in the detailed design phase of the project.
- The Proponent shall include a detailed description of the QA/QC process to be conducted in accordance with the terms of the RFP. This shall include the QA/QC process for all work completed by Sub-Proponents.
- A QA/QC review shall be conducted for all “Draft” and “Final” drawings, specifications, reports, memorandums, etc. At a minimum, QA/QC reviews shall be conducted at the following stages: 60%, 90%, 100%, Issued for Tender and Issued for Construction.
- The Corporation reserves the right to audit the Proponent’s QA/QC practices. The Corporation may request clarification and/or request additional

information from the Proponent to ensure adherence to the QA/QC requirements described herein.

- The Proponent shall be responsible for the coordination, review and QA/QC of any work completed by a Sub-Proponent. The Proponent shall be responsible for the completion of QA/QC reviews for all work produced by Sub-Proponent(s).
- The Proponent shall maintain a detailed log where all QA/QC comments are documented. The Proponent shall provide a copy of the logs with each submission (60%, 90%, 100%, IFT, IFC) to the City.

2.11.3 Coordination

- Coordinate the work of all Sub-Proponents, including the geotechnical investigation. Determine the scope of the geotechnical investigation as further described herein. The scope of the geotechnical investigation shall be determined in consultation with the City and any other stakeholders.
- The Proponent shall review current and upcoming City Capital projects to determine any potential impacts on the proposed project. Any associated impacts shall be addressed in the contract documents.
- Continually coordinate with the geotechnical Sub-Proponent during the design process to ensure the design meets the recommendations provided in the geotechnical report(s).
- Continually coordinate with utility companies throughout the design process to ensure that the design meets the requirements and minimum standards of each of the respective utility companies. Refer to Appendix ‘A’, Section 2.6 – *Utility Coordination* for additional requirements.
- Identify any required property acquisitions or easement agreements. Coordinate any required property acquisitions and easement agreements with City staff. Provide drawings of property limits for the Corporation to secure.

Refer to Appendix ‘A’, Section 2.3 – *Property Acquisition Coordination* for additional requirements.

- The Proponent shall coordinate with any required property owners or the owner’s representative in order to coordinate the location(s) of proposed/future services to each property parcel (where applicable). The Proponent shall review each service request with the City and provide commentary. The Proponent and the City will determine if the service request is warranted.

2.11.4 Road Network and Intersection Design

- Complete a comprehensive review of the preferred design option(s) indicated in the 2013 Environmental Study Report prepared by Genivar.
- Incorporate the findings of the EA for the Tollgate Road Extension into the proposed Road Network Design.
- The Proponent is responsible for optimizing the alignment and determining the best fit of the proposed road corridors for the extension of Tollgate Road and Nick Kaneb Drive. The Proponent shall also optimize the alignment of all applicable intersections and revise the proposed designs as required.
- The road corridor improvements/extension shall be designed to meet the minimum standards of an ‘Arterial Roadway’ with a rural cross section, which includes two (4) lanes with a width of four (4) metres each, plus a one and a half (1.5) metre bicycle lane adjacent to each driving lane, a recreational path and etc. The pavement structure (at minimum) shall consist of 600mm of Granular ‘B’, 150mm of Granular ‘A’ and three lifts of asphalt.
- Complete a review of adjacent property parcels and confirm the preferred location of proposed entrances and servicing requirements. Include entrance locations and future servicing locations on drawings.

- Include all necessary geotechnical requirements/recommendations for the design of the road network improvements and extensions in the Geotechnical Investigation Report. No extra fees will be paid by the Corporation for geotechnical conditions/impacts.
- Complete a detailed review of the existing underground infrastructure (including a review of current alignments, future plans and upgrades, estimated remaining service life, etc.) and provide recommendations for any necessary modifications/upgrades during construction. The Proponent shall consider how the current project will impact future accessibility and maintenance to existing buried infrastructure.
- Prepare detailed pavement marking and signage drawings for the road corridor and intersections. Coordinate with the City's Traffic Department to determine any additional pavement marking/signage requirements.
- The Proponent shall complete the detailed design of the following intersections:
    - Tollgate Road at McConnell Avenue (improvements)
    - Tollgate Road East at Nick Kaneb Drive (new)
    - Nick Kaneb Drive at Tenth Street (improvements)
- The Proponent shall complete a detailed review of the existing intersections and provide recommendations for the proposed improvements, while minimizing the extents of property acquisitions required. The intersections shall be designed to accommodate LCV's and shall meet the minimum standards specified in Transportation Association of Canada's (TAC) *Geometric Design for Canadian Roads (2017).*
- As indicated in Section 2.11.7 – *Street Lighting and Traffic Signals* the City will complete all required traffic signal designs.
- Evaluate the need for an overpass at the CN crossing located approximately 120m southwest of the intersection of Nick Kaneb Drive at Tenth Street.

- Complete the detailed design of billboard signage which is to be located at Nick Kaneb Drive at Tollgate Road East. As the signage will be within 400m of MTO Highway 401, the Proponent is responsible for ensuring that the billboard location/specifications meet the requirements of the MTO Corridor Signing Policy (2010). The Proponent is responsible for preparing all documentation required for the corresponding MTO Sign Permit Application and completing any updates to the design as per the recommendations from MTO.

2.11.5 Municipal Servicing Requirements

2.11.5.1 General Requirements

The Proponent shall complete the detailed design of all municipal infrastructure within the proposed road corridor(s). The Proponent shall also review the existing infrastructure located on Tollgate Road East, McConnell Avenue at Tollgate Road and Tenth Street; provide recommendations for upgrades as required.

As properties within the Business Park Expansion area continued to be purchased, the Proponent and a property owner may enter into a separate agreement for the design of municipal services on private property. This agreement shall be directly between the Proponent and the property owner and shall not include the Corporation. The Corporation will not be responsible for any work conducted on private property. The Proponent's fees for private property design work shall be paid directly by the property owner. The Corporation shall not be responsible for any agreement/contract between the Proponent and a property owner.

2.11.5.2 Water Network Design

- Prepare Detailed Design Drawings for the proposed watermain(s) and associated appurtenances as further described herein. The design drawings shall include plan and profile drawings, details, OPSD's, etc.

- Establish and confirm the design criteria and parameters. The design of the water distribution network shall include a capped crossing to the future Business Park Expansion area north of MTO Hwy 401.
- Using the City's existing water model, complete the necessary hydraulic analysis for the design of the watermain(s) for the proposed watermain extension and expansion. The design of the water network(s) shall take into consideration future development and servicing requirements.
- Review the location and physical properties of the existing watermain(s) and associated appurtenances (hydrants, valves, services, etc.) within the areas adjacent to the Future Business Park Expansion and determine the need for any additional appurtenance and/or the relocation of any sections of the existing watermain(s).
- The Proponent shall coordinate and meet with property owners as needed for the purpose of determining the water servicing requirements of each property (as required).
- The watermain design shall include all necessary geotechnical requirements and recommendations specified in the Geotechnical Investigation Report. No extra fees will be paid by the Corporation for geotechnical conditions/impacts.

2.11.5.3 Stormwater Management Design

- Prepare Detailed Design Drawings for the proposed storm sewers and/or culverts and drainage ditches as further described herein. The design drawings shall include plan and profile drawings, details, OPSD's, etc. The design drawings shall include any necessary modifications to the existing storm sewers required.
- Establish and confirm the design criteria and parameters.
- Establish the overall storm sewer catchment area of the proposed system in coordination with City staff.

- Prepare design sheets or a hydraulic analysis for any proposed storm sewer extensions, culverts, ditches, structures, etc.
- The design of the stormwater collection system shall take into consideration the servicing and serviceability of the ultimate catchment area.
- Review the location and properties of the existing storm sewers within the project area and assess the need for upgrades/modifications as part of the project scope.
- The Proponent shall provide recommendations for dewatering in consultation with the geotechnical Sub-Proponent and Environmental Regulatory Agencies. Prepare any necessary Dewatering Plans and associated specifications.
- Stormwater Management through the Summerstown Swamp (Provincially Significant Wetland) shall meet the requirements of all applicable environmental regulatory agencies.

2.11.5.4 Sanitary Gravity Sewer and Forcemain Design

- Prepare Detailed Design Drawings for the proposed gravity sanitary sewer. The design drawings shall include plan and profile drawings, grading plans, details, OPSD's, etc. The design drawings shall include any necessary modifications to the existing sanitary sewer as required.
- The Proponent shall review existing and/or proposed Site Plans, Servicing Plans, etc., as necessary for servicing properties.
- Complete a detailed servicing report for the entire Business Park Expansion project area, including areas slated for future development which are located north of MTO Hwy 401.
- Establish and confirm the design criteria and parameters. Establish the overall sanitary sewer catchment area of the proposed system in coordination with

City staff. The sanitary sewer catchment area shall include the future Business Park Expansion north of MTO Hwy 401.

- The Proponent shall coordinate and meet with property owners as needed for the purpose of determining the sanitary sewer servicing requirements of each property (as required).
- Establish and confirm the design criteria and parameters
- Complete sanitary sewer design sheets for the proposed sanitary sewer extension. The flow rates for each undeveloped property shall be estimated using various guidelines (MECP, OBC, City of Cornwall, etc
- The design of the sanitary sewer shall take into consideration the servicing and serviceability of the ultimate catchment area. A technical memo shall be prepared to review and select the appropriate methodology for the sanitary sewer, pumping station and forcemain design.
- The Proponent shall conduct a serviceability review of each parcel of land to ensure that it can be serviced by the proposed sanitary sewer extension. Land parcels to be reviewed include both the properties within the Business Park Expansion, as well as property parcels located north of MTO Highway 401. Discussion and recommendations regarding the serviceability of each private property shall be included in the Final Design Report.
- Review the location and properties of the existing sanitary sewers within the corridor and assess the need for upgrades/modifications as part of the project scope.
- The sanitary sewer design shall include all necessary geotechnical requirements/recommendations the Geotechnical Investigation Report. No extra fees will be paid by the Corporation for geotechnical conditions/impacts.
- The Proponent shall use trenchless technologies for the installation of the sanitary sewer across MTO Hwy 401.

2.11.5.5 Sanitary Pumping Station Design

- Establish and confirm the design criteria and parameters.
- Review ‘As-Built’ drawings, specifications, design reports of other recently constructed/reconstructed City pumping stations to understand design requirements, preferences, standards and operational practices. Conduct site visits, as needed, to review past City pumping station projects.
- Prepare Detailed Design Drawings for the proposed pumping station as further described herein. Design drawings shall include all necessary Civil, Architectural, Structural, Mechanical, Electrical, Process, Instrumentation and Control, etc. drawings as required.
- The Proponent shall complete a detailed review of the project area to determine the optimal location of the sanitary pumping station. The location of the pumping station shall take into consideration future development north of MTO Hwy 401 and the optimal crossing location of the sewer beneath the highway.
- The Proponent shall complete the necessary hydraulic analysis for the design of the pumping station.
- The design of the pumping station shall take into consideration the servicing of the ultimate catchment area as well as the development horizon of the remainder of the catchment area.
- As the proposed pumping station will be located adjacent to the MTO corridor, the exact location of the pumping station shall be coordinated with the MTO. In addition, when determining the exact location of the pumping station, consideration must be given to proposed future crossings of the sanitary sewer north of MTO Highway 401. Any costs associated with coordination with MTO should be included as further described herein. The Corporation

shall not pay any additional fees resulting from design changes/modifications by MTO.

- The exact location of the proposed pumping station shall be selected by the Proponent in coordination with City staff.
- The pumping station must be designed deep enough to collect flows north of MTO Highway 401 by gravity feed.
- The pumping station design shall include any necessary geotechnical requirements/recommendations from the Comprehensive Geotechnical Investigation Report. No extra fees will be paid by the Corporation for geotechnical conditions/impacts.
- The pumping station shall have a flow meter located adjacent to the wet well complete with underground concrete chambers.
- Identify emergency stand-by/back-up power requirements for the proposed pumping station.
- Complete the design for back-up power/generator and the associated sound attenuating building/enclosure for the proposed pumping station.
- The pumping station design drawings shall include a Site Plan, Site Grading Plan, Plan and Profiles, etc. The Site Plan must include property lines, easements, sanitary sewers, force mains, watermain, ditches, roadways, utilities for both above ground and/or below ground, dwellings, structures, entrances, pavement markings, traffic signs, existing trees/vegetation, etc.
- The pumping station shall have paved site access roads/driveways with an outdoor maintenance area with a security fence.
- Prepare Composite Utility Plans (CUP) and any necessary utility servicing design drawings for the proposed pumping station. Any necessary utility relocations, temporary support, etc. shall also be included.

- Ensure that the level of redundancy for process and/or equipment meets ECA requirements.
- Discuss/meet with City staff as needed to determine preferred equipment selection. The selection of equipment and associated contract specifications shall conform to the City's Purchasing Policy.
- List of equipment suppliers shall be included in the Design Report.
- Prepare Architectural Site Plan, Elevation, etc. design drawings for the proposed pumping station. The Architectural design of the building shall be completed in consultation with City staff.
- Prepare 3D renderings of the proposed pumping station, generators, control enclosures, etc. complete with landscaping and site works. The 3D renderings shall be updated throughout the design process.
- Determine the project specific approvals and/or permits. Coordinate with the City and approval agencies as required.
- Complete the necessary hydraulic analysis for pump sizing and selection. The hydraulic analysis should consider all applicable flow scenarios. The hydraulic analysis, design calculations, pump sizing and selection shall be included in the Design Report.
- As previously noted, the Proponent shall complete a transient analysis of the forcemain and recommend any necessary system protection.
- Prepare the necessary stormwater drainage plans for the proposed pumping stations including storm sewers, catch basins, manholes, ditches, culverts, etc. as required. Any groundwater drainage systems required shall be included as well. Additionally, stormwater management design shall be included if necessary.

- Coordinate with Cornwall Electric for power service to the proposed pumping station.
- Recommend methods for reducing Arc Flash Hazards/Risks and incorporate into the design drawings and specifications.
- Determine the interior and exterior lighting requirements the proposed pumping station. High efficiency LED's shall be used in accordance with Corporation standards.
- Complete the site lighting design in accordance with Corporation standards.
- Complete the design of lightning protection systems at the proposed pumping station.
- Review the City's SCADA Programming and Controls Standards (City of Cornwall Sewage Pumping Stations Electrical, Control and SCADA Systems Preliminary Design Report, completed by Hollen Controls Ltd in 2013).
- Complete a Process Control Narrative (PCN) for the proposed pumping station.
- Review the proposed SCADA Control Methodology with City staff.
- The pumping station shall be fully automated to allow the unattended operation of the system in accordance with City SCADA standards.
- Complete the instrumentation, controls and SCADA design in accordance with City SCADA, programming and controls standards.
- Complete the design for the preferred communication method for the proposed pumping station.
- Complete the mechanical system design for the fans, heating system, dehumidification, cooling systems, potable water, plumbing, fire protection, security system, etc. Complete the necessary air quality design including odour control.

- Review and identify construction sequencing and staging strategies. Include the review of different sequencing and staging alternatives in the Design Report. Incorporate the recommendations into the detailed design drawings and specifications as required.
- Complete the necessary noise attenuation design as recommended in the Noise and Vibration Study.
- Complete the process design which shall include Process Flow Diagrams, P&ID's, Hydraulic Profile, etc.
- Complete the electrical design for the proposed pumping station which shall include the power source, electrical power requirements, single line diagrams, etc.
- Prepare the associated structural design drawings for the wet well, control enclosures, underground flow meter chamber, generator, etc., for the proposed pumping station.
- The design of any new structure shall be in accordance with the OBC.
- Circulate the Site Plans, Servicing Plans, etc. for the proposed pumping station to the MTO for approval if required.
- The City recently constructed the Brookdale Avenue North and Fennell Crescent sanitary pumping stations. These two stations are the City's standard. The proposed building, wet well, etc. shall be similar to these stations.

2.11.6 Landscaping

- Prepare a detailed Landscaping Plan for the Business Park Expansion; plans shall include a detailed landscape design, restoration requirements, tree planting, etc.

- The Proponent shall consult with the City's Parks and Landscaping Department regarding species selection and preferred options for tree and shrubbery selection.
- The Landscaping Plan shall include any requirements specified by MNRF and RRCA, specifically where the proposed road corridor extends through the Summerstown Swamp (Provincially Significant Wetland).
- The landscaping plan shall consider alternatives to sod, where possible, in order to minimize maintenance costs in summer months and maintain a natural environment within the right-of-way.
- The detailed design drawings shall clearly identify which trees are to be removed, protected, replaced, remain, etc.

2.11.7 Street Lighting and Traffic Signals

- The City will prepare the street lighting design for proposed Business Park Expansion, as well as any necessary traffic signal design. The Proponent is responsible for submitting base plans to the City in order to prepare the detailed design drawings for the street lighting plans and traffic signal upgrades.
- Traffic Signals are anticipated at the following intersections:
    - Tollgate Road at McConnell Avenue (Upgrades)
    - Tollgate Road East at Nick Kaneb Drive
    - Nick Kaneb Drive at Tenth Street
- Coordinate with the Traffic Department throughout the design process and provide recommendations for the street lighting and traffic signal plan based on site-specific considerations.
- The Proponent shall complete a review and provide commentary on the street lighting design and traffic signal plan provided by the City.

- If it is determined that traffic signals are not warranted, underground conduit shall be installed at the intersection(s) for future use.
- The Proponent shall incorporate the drawings and contract specifications for street lighting design(s) and traffic signal upgrades prepared by the City into the tender documents.

2.11.8 Design Reports

- The Proponent shall complete a Comprehensive Final Design Report for the Future Business Park Expansion. The design report shall be continually updated throughout the entirety of the design phase of the project and submitted periodically to the Corporation for review and commentary. The Design Report shall be finalized at the end of the design phase of the project.
- The Comprehensive Final Design Report shall include at a minimum the following information:
    - Design Criteria and Rationale
    - Road Network Design
    - Traffic Impact Study
    - Traffic Model
    - Watermain Design/Model
    - Storm Sewer Catchment Area
    - Storm Sewer Design Sheets
    - Sanitary Sewer Catchment Area
    - Sanitary Sewer Design Sheets
    - Review of Existing City Pumping Stations for Design Consistency
    - Pump Design and Selection
    - Equipment List and Selection

- Pumping Station Layout
- Electrical Systems
- Process Control Narrative/Instrumentation and Control/SCADA
- Mechanical Systems
- Arch Flash Study for Sanitary Pumping Station
- Back-up Power/Generator Design and Selection
- Seismic Design Criteria
- Noise Attenuation
- Site Plan including Access Road/Path and Maintenance Area
- Architectural Elevations
- Landscaping
- Utility Considerations
- Geotechnical Considerations
- Construction Methodologies
- Environmental Considerations
- SAR Considerations
- Utility Considerations

- The Comprehensive Final Design Report shall include itemized construction cost estimates using estimated quantities and unit rates. The cost estimate shall be continually updated as the design progresses.
- The design report shall also include discussion/recommendations on the proposed construction schedules.
- The design report shall include detailed discussion of construction phasing, staging, sequencing, etc. and provide commentary on different alternatives.

- The design report shall include the Traffic Impact Study.
- The design report shall be signed and stamped by a Professional Engineer licensed in the Province of Ontario for each of the respective disciplines – i.e. structural engineer, transportation engineer, civil engineer, mechanical engineer, etc.
- The Proponent may also elect to prepare Technical Memoranda as the design progresses to be compiled into the Final Design Report at the conclusion of the design phase of the project.
- The design report shall include a detailed review of the ultimate design catchment area of the proposed sanitary and storm system.
- The Proponent shall include a review of the serviceability of each parcel of land along the Nick Kaneb Drive and Tollgate Road Extension Corridors.
- As the pumping station may be visible from Highway 401, the Comprehensive Design Report shall take into consideration the aesthetics of the pumping station.
- The Comprehensive Design Report shall evaluate the impact of dewatering for both the sanitary sewer/forcemain and pumping station construction and recommend strategies for discharge.
- The Proponent shall prepare and maintain a log of all City and Stakeholder (Utilities, RRCA, CN, etc.) commentary throughout the design process. The log shall identify how comments were addressed and/or incorporated into the detailed design.
- The Comprehensive Design Report shall evaluate the impact of dewatering for both the underground infrastructure and roadway construction and recommend strategies for discharge.

- The Proponent shall prepare an Erosion and Sediment Control Plan (ESCP) and associated drawings/details for submission to the RRCA. Prior to the completion of the detailed design, the Proponent shall submit the ESCP and draft design drawings of the corridor/intersections to the RRCA for review and comment.
- The Proponent shall include discussion/recommendations regarding current and future by-pass alternatives for system redundancy and emergencies.
- The Proponent shall prepare a Noise and Vibration Study for the proposed pumping station in accordance with NPC 131 and NPC 133. The Noise and Vibration Study shall be included in the Comprehensive Final Design Report.
- All versions of the Design Report(s) shall be submitted to the City in “Draft” for review by City staff. The Proponent shall incorporate all City comments into subsequent versions of the report. All reports shall be submitted to the City in PDF as well as three hard copies are to be delivered to the City’s Engineering office. All costs and/or disbursements associated with printing reports are to be included in the Proponent’s fee.

2.12 Tendering Services

The Proponent shall prepare two (2) tender packages – one each for Phase I and Phase II of the work.

- Prepare tender documents using the City of Cornwall and OPS tender format. Tender documents shall include all necessary sections such as Information to Tenderers, General Conditions, Supplementary General Conditions, Special Provisions and Standard Detail Drawings.
- Complete a pre-tender construction estimate and submit to the City a minimum of four (4) weeks in advance of the tender issuance.
- The tendering period shall be four to six weeks.

- Provide support to City staff during the tendering period. Prepare and answer all tender requests for clarification. Prepare Clarifications and Addenda using the City of Cornwall format.
- Ensure the tender documents are complete. A QA/QC review of all tender documents shall be completed prior to tendering. The Proponent shall be responsible for completing comprehensive QA/QC reviews of any Sub-Proponent tender document.
- Assist the City in evaluating the tender submissions and preparing award recommendations.
- Assist the City in contacting Contractor references. Participate in interviews with Contractor references with City staff.
- Upon tender award, prepare Final Contract Documents including all addenda, updated drawings and specifications for contract execution. The Proponent shall prepare an electronic version in PDF of the Final Contract Documents to be executed.
- Review contractor/supplier requests for alternate equipment and products.

2.13 Permits and Approvals

- Coordinate and undertake all work associated with securing the necessary approvals, including but not limited to:
- Coordinate and undertake all work associated with securing the necessary approvals, including but not limited to:
    - Ministry of the Environment, Conservation and Parks (MECP)
    - Ministry of Natural Resources (MNRF)
    - Raisin Region Conservation Authority (RRCA)
    - Ministry of Labour (MOL)

- Ministry of Transportation (MTO)
- Department of Fisheries and Oceans (DFO)
- Transport Canada (TC)
- Cedars Rapids Transmission (Hydro Quebec) (CRT)
- Trans-Northern Pipeline (TNPI)
- Electrical Safety Authority (ESA)
- National Energy Board (NEB)
- Technical Standards and Safety Authority (TSSA)
- City of Cornwall Building Department
- City of Cornwall Site Plan Control
- City of Cornwall Right-of-Way
- All applicable utility companies (Cornwall Electric, Bell, Cogeco, Rogers, Union Gas, etc)

- Obtain the following permits and approvals:
  - MECP Permit to Take Water
  - MECP Air and Noise Environmental Compliance Approval
  - MECP Sewage Environmental Compliance Approval
  - MTO Corridor Encroachment Permit(s)
  - MTO Sign Permit Application
  - RRCA Permits and Approvals as required
  - City of Cornwall Site Plan Control Approval
  - City of Cornwall Building Permit
  - City of Cornwall Right-of-Way/Road-Cut Permit (as required)

- MNRF Permits and Approvals as required
- DFO Approvals as required
- ESA Approvals
- TSSA Approvals

- The Proponent shall be responsible to prepare a list of the required permits/approvals. The list shall include a log documenting the status of all approvals. The Proponent shall assess and determine/confirm the required approvals/permits. Any approvals/permits not listed above shall be included in the Proponent's fee. The Corporation will not consider additional fees from the Proponent related to required approvals/permits not listed above.
- Assess the utility impacts and requirements for the proposed project. Coordinate with each utility company and secure all necessary approvals/permits. Incorporate all utility requirements and comments into the detailed design as required. The coordination with each utility company shall occur as soon as reasonably possible to avoid any design and/or construction delays.
- The Proponent shall acquire all necessary approvals from each of the respective utility companies. The Proponent shall coordinate any required TSSA and ESA approvals.
- Apply and obtain approvals/permits from MECP, MNRF, DFO, RRCA, City of Cornwall, ESA, etc. any other Federal, Provincial, Municipal regulatory authorities.
- The Proponent shall coordinate and liaise with all relevant authorities, prepare all necessary forms and applications, submit any necessary supporting documentation, etc.
- The Corporation shall pay all approval/permit fees directly.

- The Proponent and/or geotechnical Sub-Proponent shall be required to obtain ROW Control permits from the City's Infrastructure Department for all geotechnical drilling work to be conducted within the ROW. Additionally, traffic control approvals from the City's Transportation Department will be required for any drilling work that will require traffic control.
- The Proponent and/or geotechnical Sub-Proponent shall be responsible to secure any necessary approvals/permits from the MTO for geotechnical work within each respective corridor.
- The Proponent shall pre-consult with all relevant approval agencies as required to ensure the project is not delayed.
- As the numerous approvals/permits are a significant risk to the overall project schedule, the Proponent shall provide a detailed plan to mitigate approval/permit issues as a component of the proposal.
- All construction administration related permits/approvals shall be included in the construction administration component of the RFP.

2.14 Landowner and Public Consultation

- The successful Proponent shall plan and present at one Public Information Centres for the general public for the project. The Public Information Centres will be held at the City of Cornwall Infrastructure & Municipal Works boardroom located at 1225 Ontario Street, Cornwall, Ontario, K6H 4E1.
- Prepare all necessary presentation materials for each public information session. All public information session presentation materials shall also be made available digitally and shall be formatted for digital review and comment on the City of Cornwall website.
- Prepare various types of documents (brochures, video clips, drawings, social media posts and information pages for the City website) to be distributed to

various stakeholders and the public throughout the design and construction process.

- Liaise and coordinate with each landowner and/or the landowner's representative throughout the detailed design process as required.
- Prepare all necessary public notices using the City of Cornwall template and circulate to the public and the landowners.
- The landowner and public consultation for construction is included in the construction component of the RFP.
- Prepare and continually update a log for tracking comments/concerns from the landowners contributing to the project. The list shall be updated and reviewed at each coordination meeting.
- All communication with landowners shall be carefully documented. The Proponent shall communicate to the landowners and/or the landowner's representative in writing via email, memo, etc. Any conversation with landowners and/or landowner's representative shall be documented and circulated to the Corporation and landowner.

2.15 Coordination Meetings

- Coordinate with City of Cornwall staff throughout the design phase of the project. The Proponent shall assume bi-weekly coordination meetings with City staff during the design phase. All meetings will occur at the City of Cornwall's Infrastructure & Municipal Works boardroom located at 1225 Ontario St., Cornwall, Ontario, K6H 4E1 or via Microsoft Teams.
- The Proponent shall assume each coordination meeting will be two (2) hours long.
- The Proponent shall prepare and circulate all meeting materials a minimum of three days in advance of the meeting.

- The Proponent shall arrange to have all key team members at each coordination meeting.
- The Project Director and Project Manager shall attend each coordination meeting.

3 CONSTRUCTION ADMINISTRATION AND SUPERVISION

The City will act as the Contract Administrator for the duration of the construction phase of the project. The Proponent shall assist the Corporation throughout construction by providing supplementary Construction Administration and Inspection Services in order to ensure that the intent of the design is met. If the City does not have the resources available to act as Contract Administrator at the time of construction, the City may request that the Proponent provide full-time Construction Administration and Inspection services.

The Proponent shall provide the following supplementary construction administration services related to the Future Business Park Expansion., as deemed necessary by the Corporation. All work associated with Construction Administration and Supervision is considered provisional.

3.1 Construction Administration

The Proponent shall coordinate with the City in order to provide the following construction administration services, as deemed necessary by the Corporation:

- Support City Staff with the completion of the Construction Administration/Management of the project in accordance with the drawings, specifications, reports, etc.
- Obtain any necessary construction related approvals/permits required for the project. The Proponent shall complete any necessary documentation to obtain and/or maintain permits/approvals.

- All Contractor enquiries, RFI's, etc. shall be promptly responded to within five business days. The Proponent shall assign resources to the project as required to ensure that the Contractor's schedule is not impacted as a result of awaiting further information from the Proponent.
- Issue supplementary drawings, details, information, etc., for clarification of contract documents, as needed.
- Prepare Deficiency Reports for any deficiencies observed during site inspections. Advise City staff immediately of any deficiencies observed.
- Coordinate with all approval agencies (MTO, Cedar Rapids, MECP, etc.) throughout construction. Provide all necessary documentation, reports, etc., as required. Provide all documentation in a timely manner to ensure the project is not delayed. The Proponent shall not defer coordination with approval agencies to the Contractor.
- Review any Contractor extra work requests and claims. Issue Contemplated Change Orders (CCO) and Change Orders (CO) complete with all required design drawings, details, specifications, etc., to the Contractor as necessary. The Proponent shall be responsible for any extra work/costs resulting from design error, negligence, etc. City staff shall approve all Change Orders.
- The Proponent shall prepare and present at one public meeting for the proposed construction.
- Notify all approval agencies when work has begun and is completed. Provide all necessary reports, documents, etc. as required. Coordinate any required inspections.
- The Proponent shall support City Staff for the duration of the construction. The Proponent shall base the Contract Administration services on the Fee Schedule included in Section 3.3 – *Construction Administration and Inspection Fees.*

- The Proponent shall recommend formal acceptance of the sanitary sewer, forcemain and the pumping station after Substantial Performance.
- The Corporation will not assume the operation of any pumping station during construction.
- Notify all approval agencies when work has begun and is completed. Provide all necessary reports, documents, etc. as required. Coordinate any required inspections.
- Coordinate with City of Cornwall staff throughout construction and attend bi-weekly construction meetings with the City and Contractor.
- The Proponent shall assume construction site meetings are to occur bi-weekly. Construction meetings will occur at the City of Cornwall Infrastructure and Municipal Works boardroom at 1225 Ontario Street, Cornwall, Ontario, K6H 4E1.
- Prior to construction, the Proponent and the City will develop a Materials Testing Plan which will indicate the type and frequency of material testing to be completed throughout the course of construction.
- The Proponent shall support City Staff for the duration of construction. The Proponent shall base the Contract Administration services on the Fee Schedule included in Section 3.3 – *Construction Administration and Inspection Fees.*

3.2 Site Inspection Services

- The City will provide full-time site inspection services for the duration of the construction period. The Proponent will assist the City throughout the construction phase of the project by providing supplementary Site Inspection Services as deemed necessary by the Corporation.

- The Proponent shall complete periodic site inspections at various stages throughout the duration of the project. The Proponent shall assume that each site visit shall be four hours in duration, which does not include travel time to the site.
- Site inspections by all disciplines involved with the construction of the sanitary pumping station is required.
- The Proponent's Project Manager and City Project Manager shall coordinate the Proponent's site inspections in order to ensure the intent of the design is met.
- The City shall coordinate all required geotechnical testing with the geotechnical Sub-Proponent. The Proponent shall review geotechnical reports as required.
- City Staff will maintain detailed As-Built Drawings in the field such that accurate As-Built Drawings, Service Location Sheets, etc., will be prepared by the Proponent and provided to the City at the conclusion of the project.

3.3 Construction Administration and Inspection Fees

- As the time commitments for Construction Administration and Site Inspection services are difficult to anticipate, the Proponent shall base the cost of these services, detailed in Section 3.1 and 3.2, on the estimates provided below. Please be advised that all work included in Section 3 – *Construction Administration and Supervision* is considered provisional and not guaranteed.

3.3.1 Construction Administration and Inspection Fees for Phase I Works

POSITION	**HOURS**
Project Director	80
Project Manager	80
Contract Administrator	160

Site Inspector	960
Civil/Municipal Engineer	120
Traffic Engineer	120
Electrical Engineer	40
Mechanical Engineer	40
Structural Engineer	40
Instrumentation and Controls Engineer	40
Process Engineer	40
Landscape Designer/Architect	80
CAD Operator	80
Administrative Support	40

3.3.2 Construction Administration and Inspection Fees for Phase II Works

POSITION	**HOURS**
Project Director	40
Project Manager	40
Contract Administrator	120
Site Inspector	360
Civil/Municipal Engineer	80
Traffic Engineer	80
Structural Engineer	40
Mechanical Engineer	40
Electrical Engineer	40
Instrumentation & Controls Engineer	40
Process Engineer	40
Architect	40
Landscape Designer/Architect	40
CAD Operator	80
Administrative Support	40

- All disbursements associated with Construction Administration and Site Inspection services such as mileage, lodging, meals, supplies, etc. shall be included in the staff unit rate and will not be paid for in addition to the staff unit rate provided in the submission. All costs associated with travel time to and from the project site are to be included in the staff unit rate and will not be paid for by the Corporation of the City of Cornwall.
- The fee for Construction Administration and Site Inspection services shall be time and material to an upset limit. The time allotment shown in the table above is estimated and the Proponent shall be paid based upon the actual time spent.
- The unit rates provided for Construction Administration and Inspection shall be held by the Proponent for a maximum of three (3) years, with a permitted annual increase equivalent to the Consumer Price Index (CPI).
- If determined that a discipline not listed in the table above is required, the Proponent is responsible for providing a proposal that includes the rate/quantity of hours, roles and responsibilities and an explanatory note that describes why their presence is essential for the success of the project. The addition of any discipline to the Construction Administration team is subject to approval by the Corporation.
- The Proponent shall notify the Corporation immediately should the Proponent expect to exceed the allotted time. The Proponent shall require City approval prior to exceeding the estimated time allotment. The Proponent shall provide detailed justification for additional time required. The Corporation will not compensate the Proponent for additional time should the Proponent fail to provide sufficient notification and/or justification to the Corporation.
- The Corporation will not be responsible for any overtime, rate premium, etc. Any mandated rate premiums shall be the responsibility of the Proponent. The

Proponent shall not transfer these rate premiums to the Corporation in any manner.

- The Corporation shall not be responsible for costs related to design error, omissions, negligence, etc. The Proponent shall be responsible for all costs related to re-design work due to the Proponent's error, negligence, etc.

3.4 Geotechnical Construction Services

3.4.1 Geotechnical Site Inspections

- The City will retain a qualified geotechnical engineering firm to complete any materials testing required during the construction phase of the proposed project. The Proponent and/or geotechnical Sub-Proponent shall not be responsible for materials testing.
- The Proponent and/or geotechnical Sub-Proponent shall provide support to City Staff during the construction phase of the project and answer any question that may arise. Additionally, the Proponent and/or geotechnical Sub-Proponent will complete periodic site inspections as needed to ensure the intent of the geotechnical design is met.
- The Proponent's Project Manager and City Site Inspector shall coordinate the geotechnical Sub-Proponent's site inspections as required in order to ensure the intent of the design is met.
- The geotechnical Sub-Proponent that was retained for the initial geotechnical investigation in the design phase must complete all geotechnical services required in the construction phase of the project.
- A minimum twenty-four (24) hour response time from the geotechnical Sub-Proponent is required.
- The geotechnical Sub-Proponent shall provide written reports for all site inspections. All reports/site reports shall be completed in the field at the time

of the inspection. Site reports completed at a later date shall not be accepted or paid for.

- The geotechnical Sub-Proponent shall not direct the Contractor but report directly to the Proponent's Project Manager and/or City Site Inspector.
- All site reports shall be stamped by a Professional Engineer licensed in the Province of Ontario. No exceptions will be made.
- The coordination and the management of the geotechnical Sub-Proponent shall be included in the Project Manager's scope of work and shall not be included in the fee for Geotechnical Construction Services. Sub-Proponent fees are to be paid at cost by the Corporation. No mark-up of any Sub-Proponent fees shall be applied to any invoice and/or paid by the Corporation.
- The hydrogeological investigation for the Permit to Take Water (PTTW) applications shall be included in the design fees and not in this item.
- Any geotechnical services required post-construction, shall be paid on a time and material basis.

3.4.2 Geotechnical Construction Services Fees

- As the geotechnical services are difficult to anticipate, the Proponent shall base the cost of these services for each anticipated year of construction on the estimates provided in the Fee Schedule below:

3.4.2.1 <u>Geotechnical Construction Services for Phase I Works</u>

POSITION	HOURS
Technologist/Technician	120
Senior Geotechnical Engineer	120
Preparation of Reports/Technical Memos	40

3.4.2.2 Geotechnical Construction Services for Phase II Works

POSITION	HOURS
Technologist/Technician	120
Senior Geotechnical Engineer	80
Preparation of Reports/Technical Memos	40

- All disbursements associated with Construction Administration and Site Inspection services such as mileage, lodging, meals, supplies, etc. shall be included in the staff unit rate and will not be paid for in addition to the staff unit rate provided in the submission. All costs associated with travel time to and from the project site are to be included in the staff unit rate and will not be paid for by the Corporation of the City of Cornwall.
- The fee for Construction Administration and Site Inspection services shall be time and material to an upset limit. The time allotment shown in the table above is estimated and the Proponent shall be paid based upon the actual time spent.
- The unit rates provided for Geotechnical Construction Services shall be held by the Proponent for a maximum of three (3) years, with a permitted annual increase equivalent to the Consumer Price Index (CPI).
- If determined that a discipline not listed in the table above is required, the Proponent is responsible for providing a proposal that includes the rate/quantity of hours, roles and responsibilities and an explanatory note that describes why their presence is essential for the success of the project. The addition of any discipline to the Construction Administration team is subject to approval by the Corporation.
- The Proponent shall notify the Corporation immediately should the Proponent expect to exceed the allotted time. The Proponent shall require City approval

prior to exceeding the estimated time allotment. The Proponent shall provide detailed justification for additional time required. The Corporation will not compensate the Proponent for additional time should the Proponent fail to provide sufficient notification and/or justification to the Corporation.

- The Corporation will not be responsible for any overtime, rate premium, etc. Any mandated rate premiums shall be the responsibility of the Proponent. The Proponent shall not transfer these rate premiums to the Corporation in any manner.
- The Corporation shall not be responsible for costs related to design error, omissions, negligence, etc. The Proponent shall be responsible for all costs related to re-design work due to the Proponent's error, negligence, etc.

4 POST-CONSTRUCTION SERVICES

4.1 Post-Construction Services & Inspections

- Complete a post-construction photo survey for record purposes which shall include but not be limited to: roadways, sidewalks, driveways, pumping stations, generators, equipment, vegetation, trees, entrances, steps, porches, foundations, dwellings, structures, etc. Photos shall be taken during a time that weather will not impact the photos. The post-construction photo survey shall accurately indicate the condition of all existing and new features to ensure that no damage to existing property has occurred due to construction. The post-construction photo survey shall be included in the Close-Out Package to be provided to the City.
- Complete warranty inspections for each discipline twelve months and twenty-four months after Substantial Performance. Issue Warranty Inspection Site Reports immediately following each site visit
- Assist the Corporation as required during the warranty period. Ensure all warranty issues have been addressed and resolved.

- Conduct additional inspections as required for any outstanding or deficient work.
- Coordinate with the Corporation and the contractor to ensure all warranty, deficiency and/or outstanding work is completed.
- Liaise with City staff operating the works and answer all questions.
- Assist the Corporation and coordinate with the contractor to review and resolve any third-party claims.

4.2 Testing, Training & Commissioning

- Update and finalize the Process Control Narrative (PCN) for the pumping station.
- Review the contractor's start-up, testing and commissioning plan and update/revise as required to ensure that the contractor is following the contract documents.
- Coordinate all required testing, training and commissioning. Collect all testing, training and commissioning records to be provided to City staff at the completion of the project.
- Conduct two equipment and SCADA training sessions with City staff. Prepare all necessary training materials.
- Coordinate and witness the necessary equipment Factory Acceptance Testing (FAT).
- Coordinate and witness equipment and instrument calibration, start-up verification, SCADA network testing, performance testing, operational testing, etc.
- Provide an equipment and instrument list complete with asset tagging.
- Review the contractor's Operation and Maintenance Manuals and Commissioning Records.

- The Proponent shall not allow the commissioning of any equipment until the start-up tests/reports have been completed and submitted.
- Ensure the contractor has completed all equipment tagging prior to start-up and commissioning.
- Conduct mandatory Pre-Start Health and Safety Reports for the proposed pumping station prior to start-up, testing, commissioning, etc.
- Witness all equipment calibration and checkout. Complete calibration and check-out reports for all equipment. (Mechanical, Electrical, Process, Instrumentation, Controls, SCADA).

4.3 Post-Construction Services Fee Schedule – Phases I and II

- As the time commitments associated with post-construction, testing, training and commissioning services are difficult to anticipate, the Proponent shall base the cost of these services, as detailed in Section 4.1 and 4.2, on the estimates provided below:

POSITION	HOURS
Project Manager & Construction Administrator	40
Resident Site Inspector	80
Civil/Municipal Engineer	40
Traffic Engineer	16
Structural Engineer	16
Mechanical Engineer	40
Electrical Engineer	40
Instrumentation & Controls Engineer	24
Process Engineer	24

Architect	24
CAD Operator	40
Administrative Support	24

- All disbursements associated with post-construction and inspection services such as mileage, lodging, meals, supplies, etc. shall be included in staff unit rate and will not be paid for in addition to the staff unit rate provided in the submission. All costs associated with travel time to and from the job site are to be included in the unit rate and will not be paid for by the Corporation of the City of Cornwall.
- The fees for post-construction, testing, training and commissioning shall be time and material to an upset limit. The time allotment shown in the table above is estimated and the Proponent shall be paid based upon the actual time spent.
- The unit rates provided for Post-Construction Services shall be held by the Proponent for a maximum of three (3) years, with a permitted annual increase equivalent to the Consumer Price Index (CPI).
- The Proponent shall notify the Corporation immediately should the Proponent expect to exceed the allotted time. The Proponent shall require Corporation approval prior to exceeding the estimated time allotment. The Proponent shall provide detailed justification for the additional time required. The Corporation will not compensate the Proponent for additional time should the Proponent not provide sufficient notification and/or justification to the Corporation.

4.4 <u>As-Built Drawings</u>

- Prepare detailed As-Built Drawings and submit to the City in AutoCad and PDF format.

- Prepare detailed Service Location Sheets for each service and submit to the City in AutoCad and PDF format.
- As-Built Drawings shall be submitted to the City no later than three months after Substantial Performance for each phase of the project.
- The Corporation will review the submitted As-Built Drawings and provide comments to the Proponent. The Proponent shall update the As-Built Drawings as required and re-submit to the City.
- The Corporation will complete any additional field surveying required as a result of incomplete as-built information.
- The Proponent shall submit a time and material to upset limit fee for the preparation of As-Built Drawings. The Proponent shall not include the labour required for As-Built Drawings in the time and material estimates in Sections 4.3 – Post Construction Services Fees

4.5 Close-out Package

- Submission of associated construction documents shall be provided to the City in an organized Close-Out Package. The City is to receive these documents in PDF format as well as two hard copies.
- The Close-Out Packages shall be submitted to the City no later than three months after Substantial Completion.
- The City will review the submitted Close-Out Packages and provide comments to the Proponent. The Proponent shall update the Close-Out Packages as required and re-submit to the City.
- The Corporation shall not be responsible for additional work required as a result of incomplete Close-Out Packages. The Proponent shall update and modify the Close-Out Package as required.

- Provide As-Built Drawings, Operation and Maintenance Manuals, Construction Documents, Site Inspection Reports, Geotechnical Material Test Results, Mix Designs (Concrete and Asphalt), Geotechnical Field Reports, Shop Drawings, Deficiency Lists, Meeting Minutes, Pre-construction and Post-construction Photos, Training Logs, FAT Records, Equipment Start-up Reports, Equipment Warranties, Commissioning Records, Operational Test Results, PCN's, etc., in an organized Project Close-Out Package. The Proponent shall submit three hard copies of all Close-Out Packages as well as in PDF.
- The Proponent shall submit a time and material to upset limit fee for the preparation of project Close-Out Packages. The Proponent shall not include the labour required for Close-Out Packages in the time and material estimates in Section 4.1 and 4.2.

5 SCHEDULE

The Corporation intends for the construction of Phase I of the Future Business Park Expansion to be completed by the end of 2022 and Phase II to be completed by the end of 2023 (contingent upon future land sales and development). The Proponent shall prepare a detailed schedule for the entire project including the design, tender, construction and post-construction phases of the project. If the Proponent does not believe the completion date is achievable, the proposed schedule should indicate the earliest possible completion date.

- The Proponent shall base the schedule on the following:

Item	Date
Issue of RFP	December 15, 2021
Deadline for Questions	January 12, 2022
Deadline for Submission	January 26, 2022

Award of RFP – Council Meeting	February 22, 2022
Project Commencement	March 7, 2022

Note: although every attempt will be made to meet dates as listed, the Corporation reserves the right to modify any or all dates at its sole discretion

- The Proponent shall provide a detailed project schedule identifying all tasks required to complete the project on time and on budget.
- The Proponent shall detail the proposed project management and methodology to ensure the project remains on schedule.
- The Proponent shall identify the design, tender, construction, etc., methodology and strategy to accelerate the project schedule.
- The Proponent shall consider various tendering and construction phasing alternatives which could expedite the overall project schedule.
- The Proponent shall review various construction methodologies which could expedite the project schedule and mitigate costs.
- Continually update the project schedule and submit an updated version monthly to the City, to be reviewed at monthly progress meetings. The schedule shall include City review time.

6. PROJECT RISKS

The proposed project has numerous project risks which can impact the project schedule and budget.

- The Proponent shall identify any potential threats and opportunities and provide a detailed risk management plan highlighting severity (risk score) and mitigation/enhancement strategies. The Proponent shall also include any actions required by the Corporation.

- The quantity of regulatory approvals required for the project present significant risk to the project schedule as well as the budget. The Proponent shall include details on the proposed strategy to secure permits and approvals in a timely fashion in order to mitigate project delays and cost overruns.