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**Project Delivery Proposal
To York Region**

**East Holland Trunk Sanitary Sewer
(Tableland Component)**

A Proposed Approach

By

**D. E. Aubie Consulting Ltd.
February 2005**

**Comments and Revisions by
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April 27, 2005**

1.0 INTRODUCTION

Project Description

On June 12, 2003, Regional Council approved the principles of a Prepaid Development Charge Credit Agreement with the Aurora 2B Developer Group (Developers Group). The principles included: the advanced construction of the East Holland Trunk Sewer (EHTS) (St. John's Sideroad portion) at an estimated cost of \$7.0 million; Bayview Avenue widening from Wellington Street to St. John's Sideroad at an estimated cost of \$4.0 million; and the Aurora Equalization Tank Environmental Assessment, estimated at \$250,000.

The EHTS and the Aurora Equalization Tank are required in order to achieve the ultimate servicing requirements of the Town of Aurora. The EHTS consists of two portions, an east-west section known as the St. John's Sideroad portion and a north-south section known as the Tableland portion. As mentioned above, the Developer Group has advanced the construction timing of the St. John's Sideroad portion. However, in order to proceed with the buildout of the Aurora 2B lands, the Tableland portion of the EHTS is also required.

The Developer Group is in the initial stages of their subdivision design and are now in a position to co-ordinate the installation of Regional and local infrastructure through their lands.

This portion of the EHTS is to be constructed almost entirely on the tableland portion of the Aurora 2B Developer Group lands. A small portion of the sewer alignment lies on private property, the sewer alignment will be temporarily diverted around the property until property issues have been resolved. Costs related to the construction of the sewer, including the temporary sewer diversion around the private Property, will be eligible for development credits. The Developer Group will be responsible for all cost related to the future construction of the permanent sewer over the private property, including decommissioning of the temporary sewer diversion; these costs will not be eligible for development credits. The temporary solution of diverting the sewer is contingent on design feasibility which will be confirmed in the coming weeks.

The Developer Group will provide the Region of York with a permanent easement over the Mavrinnac Boulevard right-of-way through the Mattamy Lands. In addition, a permanent easement will be provided, as may be required, over the temporary sewer diversion lands (frozen building lots). A blanket grading and servicing easement will be provided to the Region over all draft approved lands (Preserve, Prato, Minto and St Johns). The developer group will convey to the Region free of cost, any lands or interest in lands, including but not limited to easements, required by the Region for the maintenance of the works.

The developer group has proposed that they be permitted to construct this portion of the trunk sewer. Since the developer group owns the lands on which the sewer would be constructed, the developer group would be able to co-ordinate the construction of the trunk sewer in connection with the installation of other services within their subdivisions, resulting in construction efficiencies and cost savings for the Region. Region staff has reviewed this request and has indicated that this arrangement would be acceptable based on the principles and conditions set out below. The Developer Group and the Region of York will pre-qualify a short list of contractors on the basis of their ability to successfully undertake projects of this nature. Tender packages will be issued to qualified parties only. The contractor with the lowest tender price will be selected to construct the works. Tender documents will be approved by the Region and tender submissions will be opened in the presence of a Region of York representative.

The construction of the tableland portion of the East Holland Trunk Sewer will proceed as a single project from 240 m north of Wellington Street, along Mavrinac Boulevard to St. John's Sideroad. The Developers Group proposes to pre-cut the sewer corridor with the individual Landowners contractor; construct the sewer with the Developer Group contractor, and backfill the right-of-way to sub-grade with Landowners contractor. The cost of pre-cutting and backfilling the trench, to sub-grade, will be eligible for development credits. The cost savings to the Region of York come in the form of efficiencies from utilizing earth scrapers to pre-cut the sewer trench as compared to utilizing several backhoes to cast and double handle material.

The Developer Group Consultants (Project Management, Geotechnical and Contract Administration) for the project will be sole sourced. The fee structure for the Developer Group Consultants will be subject to the approval of the Commissioner of Transportation and Works.

Project Status

The Region of York has completed the Environmental Assessment for the EHTS.

The Region has retained MacViro Consultants Inc. as their design consultant. The design consultant is responsible for the design of the Tableland portion of the East Holland Trunk Sewer (excluding approvals and dewatering).

Design of approximately 240 metres of Tableland wastewater infrastructure immediately north of Wellington Street is complete and has been approved through the Preserve Homes development. Construction of this section of infrastructure is underway.

The design of the remaining portion of the Tableland sanitary sewer to St. John's Sideroad is underway and an agreement with the various developers is forthcoming.

Proposed General Approach

The Region has been working with the Developers Group to develop a model for the delivery of the required Regional Infrastructure that meets the objectives of the Region and the landowners. The following ‘governing principles’ shall be considered:

- *The Region of York and their design consultant will assume all responsibilities associated with design of the wastewater infrastructure.*
- *The Aurora 2B Developer Group would assume all responsibilities associated with the tendering and construction of the wastewater infrastructure project.*
- *The Developer Group and the Region of York will pre-qualify a short list of contractors on the basis of their ability to successfully undertake projects of this nature. Tender packages will be issued to qualified parties only. The contractor with the lowest tender price will be selected to construct the works. Tender documents will be approved by the Region and tender submissions will be opened in the presence of a Region of York representative.*
- *The tendering process and the selected bid shall be, subject to the approval of the Region and in accordance with the general requirements of the Region’s Purchasing By-Law to ensure competitive bidding.*
- *The Aurora 2B Developer Group will be responsible for constructing the East Holland Trunk Sewer in accordance with Regional standards and specifications and as per the approved design prepared under the direction of Regional staff;*
- *The Aurora 2B Developer Group would assume all responsibilities associated with the inspection of the wastewater infrastructure project.*
- *Additional Independent inspectors will be retained by the Region in order to conduct regular inspections of the works. Costs associated with the inspections will be eligible for development credits.*
- *The Developers Group consultants (Stantec) will be responsible for review and approval of all shop drawings and recording of as-built drawings including GPS coordinates. As-built drawings of the Regional infrastructure will not include local infrastructure.*
- *The Developers Group consultants (Stantec and D.E. Aubie) will obtain all necessary approvals and permits including, but not limited to, permits for the MOE, TRCA, DFO, Coast Guard, and MNR. The Region may, if necessary, be named on permits as co-applicant.*

- *The Developer Group agrees to adhere to all Regional requirements with respect to the proactive monitoring and mitigation of all construction impacts including those related to dewatering and any potential impacts to private wells or adjacent wetlands. The cost of this work is to be included in the total project cost and will be eligible for development credits.*

The project delivery approach is further developed in this PDP based upon the above governing principles, objectives and approach.

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2.0 PROJECT TEAM

Developers Team

- Aurora 2B Developer Group

Developers Professional Team

- Financing - Aurora 2B Developer Group
- Project Advisor – Mr. Duane E. Aubie, P.Eng. - D.E. Aubie Consulting Ltd.
- Contract Administration and Inspection – Mr. Stuart Elliott, P.Eng. - Stantec Consulting Ltd.
- Legal – Bratty and Partners
- Surveyor – TBA
- Geotechnical Engineer – Mr. Ivan Corbett, P.Eng. - Geoterre Limited

Details of the Region of York's Project Team

- Project Manager - Mr. Henry Verbruggen, P.Eng. – Cole Engineering Group Ltd.
- Design – Mr. Stuart Dixon, P.Eng. - MacViro Consultants Inc.
- Geotechnical Engineer – Mr. Ivan Corbett, P.Eng - Geoterre Limited
- Hydrogeologist – The Region of York to request proposals. (pending)

QA/QC Team

- The QA/QC team will be developed cooperatively by the Region, Stantec Consulting Ltd. and the sewer contractor.
- Independent inspectors will be retained by the Region in order to conduct regular inspections of the works. As noted in the General Approach Section, bullet number 7, *“Additional Independent inspectors will be retained by the Region in order to conduct regular inspections of the works. **Costs associated with the inspections will be eligible for development credits.**”*

3.0 PROPOSED DELIVERY APPROACH

Details of the Project

The tableland portion of the East Holland Trunk Sewer (EHTS – refer to Figure 1) is an extension of the St. John's Sideroad portion of the EHTS. This portion of the EHTS is to be constructed almost entirely on the tableland portion of the Aurora 2B Developer Group lands. A small portion of the sewer alignment lies on private property, the sewer alignment will be temporarily diverted around the property until property issues have been resolved. Costs related to the construction of the sewer, including the temporary sewer diversion around the private Property, will be eligible for development credits. The Developer Group will be responsible for all cost related to the future construction of the permanent sewer over the private property, including decommissioning of the temporary sewer diversion; these costs will not be eligible for development credits. The temporary solution of diverting the sewer is contingent on design feasibility which will be confirmed in the coming weeks.

The first portion of the project is to be located on Mavrinac Boulevard from Wellington Street North approximately 240m to a point just north of the future Halldorson Avenue. This sewer will be a 750mm diameter AWWA C-302 sanitary sewer located at depths from 5 to 11 metres and generally located above the local water table. This portion of the work is currently under construction.

The balance of the trunk sewer will, in general, follow the alignment of Mavrinac Boulevard on a north-south alignment to connect to the existing trunk sewer on St. John's Sideroad to the 240m portion just north of Wellington. This sewer will be approximately 1760m long.

Sections of the trunk sewer will be located below the local water table and may require dewatering to permit construction of the sewer by open cut means. The developer group will be responsible for obtaining the PTTW.

Details of Approach for Project

Engineering Design Services

- The Region of York is responsible for the design of the East Holland Trunk Sewer (EHTS). MacViro Consultants Inc. has been retained by the Region to complete the design.
- The Regional design will be in accordance with the Regional standards and requirements. It will incorporate recommendations by environmental consultants, Hydrogeologist, arborists and geotechnical consultants. If required, other specialty consultants acceptable to the Region will be invited to address specific issues that may arise during the development stage.

- The Developer Group, through their consultants at Stantec Consulting Ltd., is responsible for the development of all other subdivision services.

Environmental Approvals

- The Developer Group is responsible for obtaining all design related approvals including the Ministry of Environment Certification of Approval to construct the trunk sewer.
- The Developer Group in concert with D.E. Aubie Consulting, Stantec Consulting Ltd. and the sewer contractor will be responsible for obtaining the Permit to Take Water, if required. The Developer Group will be responsible for the proactive monitoring and mitigation of all construction impacts including those related to dewatering, complying with the Permit to Take Water, any potential impacts to private wells or the adjacent wetlands and creeks to the satisfaction of the Region. The cost of these works *will be eligible for development credits*.

Procurement

- The Aurora 2B Developer Group will be responsible for constructing the East Holland Trunk Sewer in accordance with Regional Standards and specifications and as per the approved design prepared under the direction of Regional staff;
- Subject to the Regional approval, the Developer Group would retain Stantec to issue the tender documents, award and administer the contract;
- The tendering process and the selected bid shall be subject to the approval of the Commissioner of Transportation and Works;
- Preparation of tender documents and the administration of the tendering process by Stantec will be in accordance with the Development Charge Credit Agreement and the general conditions of the Region's Purchasing By-law. Prior to tendering Stantec will meet with the Regional staff to review the tendering process and the contract documents. The works associated with the EHTS will be clearly delineated from all other works including works associated with servicing of the development. If required, follow up meetings between the Regional staff and Stantec will be organized to resolve any outstanding issues.

Control of Installation and Construction

Upon completion of the design by the Region for the Trunk Sewer, the Developer Group shall apply and obtain:

- (a) permit from LSRCA/MNR for valley crossings (if required) and siltation control;
- (b) fill construction and alternation to waterways permit from the LSRCA (if required);
- (c) Permit to take water from MOE (if required);

- (d) Any other permits required for this project including, but not limited to, permits from the Town of Aurora, MOE, LSRCA, DFO, Coast Guard, and MNR;
 - (e) Traffic management and Protection Plans (if required); and,
 - (f) Utilities coordination.
- Developer Group is to develop a Construction Quality Plan that will contain all the construction deliverables for the Project. The Plan will list the relevant deliverables, specification requirements, milestones and inspection points. For each inspection or verification item, the responsible parties will be noted, and the required documentation will be provided. The Construction Quality Plan will contain the planned schedule for all the required inspections, tests and approvals for the work. Updated versions of the Construction Quality Plan will be made available to the Region.
 - During construction, Stantec inspection team will work together with the inspectors of the Region, LSRCA and the Town in order to ensure completion of the works to the satisfaction of the approval agencies and the Region. Stantec will appoint one full-time inspector for every sewer installation crew working on the Regional trunk sewer; the inspector will be devoted to the installation of Regional works only. When required, Stantec will consult with specialty consultants for matters requiring their expertise. Mitigative measures to be implemented to the satisfaction of LSRCA/MNR and the Region will be as described as below:
 - (a) Any area disturbed by construction will be stabilized and restored as directed by the Region with terraseed.
 - (b) Sedimentation erosion control will be implemented as described in “Guidelines on Erosion and Sediment Control for Urban Construction Sites” (MNR May 1987) and “Technical Guidelines Erosion and Sediment Control” (MNR February 1989), and as directed by the Environmental consultants.
 - (c) Stockpiling of excavation material will not be allowed in or adjacent to watercourses. Excavated excess fill to be removed off site immediately, OPS 180 will be provided.
 - (d) Contamination of soils through spills and leaks will be avoided by ensuring that fuel storage, refueling and maintenance of construction equipment is handled properly and not allowed in or adjacent to watercourses. Contingency plans will be prepared, and submitted for review, before the start of the construction, for the control and clean-up of a spill if one should occur. On site spill kits will be maintained at all times.
 - (e) Dust control, if required will be implemented with water and calcium chloride. Use of the calcium chloride will be restricted to the day shift and the contractor will be required to comply with the local noise by-laws.

- (f) Environmental protection, siltation and erosion control to be monitored and inspected 7 days a week by a recognized Environmental Consultant.
- (g) Retain a biologist where construction activities encroach upon environmentally sensitive areas for the duration of such work.
- Regular bi-weekly site meetings, between all parties concerned, will be held to review the progress, deal with any issues raised by the contractor and/or other parties. Potential problem areas will be reviewed in detail and the contractor will be asked to submit an action plan prior to commencing work in such areas. Final go ahead to the contractor will be given upon acceptance of the action plan by all parties.
- Upon satisfactory completion of the works based on inspections by the Region and Stantec inspectors, the maintenance period will commence. At the end of the maintenance period further inspections will be carried out and if no deficiencies are found, the works will be assumed but the Region, in accordance with the development charge agreement.

Property Acquisition (responsibilities, approach)

- The Developer Group shall obtain all rights-of-way and/or easements required for the construction of EHTS.
- The Developer Group will provide an easement through the Tablelands where the EHTS is aligned to secure for Aurora East 2B & 2C servicing. .

QA/QC (engineering, construction)

- Design Phase – MacViro Consultants
- Construction Phase - Stantec Consulting Ltd.
- The Developer Group is to develop and implement a comprehensive integrated program of quality control (QC) and quality assurance (QA) inspection and testing (the Construction Quality Plan) to ensure that all aspects of the project construction have been provided in conformance with the approved drawings and Region's standards. The Developer's Quality Assurance Manager will provide the management and administration of the QC/QA program.
- A Complaint Review Committee (CRC) to be comprised of the Developer Group members and Region appointees will review complaints from residents, businesses, municipalities, LCSRA and MNR in a timely appropriate manner

A hydrogeological, environmental and geotechnical report for the selected route of the proposed sewer will be prepared. Their recommendations for dewatering, erosion control, pipe bedding, etc. will be fully implemented. Areas of dewatering will be identifiable and permit to take water will be obtained (if required) by the Developer Group prior to the start of the construction. A well monitoring scheme will be put in place by the Hydrogeologist to verify the impact, if any, on the

wells in the area of the construction. Residents will be able to contact the 24 hour emergency numbers, to be provided to them, to relay their complaints, if any. The CRC will review any complaints and will direct the engineer/contractor to rectify the problem as soon as possible.

- A Community Liaison Committee (CLC) to be comprised of Developer Group members and Region appointees will maintain contact with the public. The CLC will inform all residents, businesses and institutions affected by the proposed works on the details of construction and the effects to their properties, businesses.
- Stantec Consultants Ltd. shall maintain contact with all municipal and agencies during the construction stage in consultation with the Region of York.

Cost Control

- Project cost will be controlled strictly by adhering to the contract prices. Any change order has to be approved by the Developers Coordinator, and the Region.

The Developer Group to Co-ordinate and/or Develop:

1. Preconditions survey of any existing dwellings, buildings and or structures as required.
2. Precondition survey of any existing sewers, watermain, culverts and or other utilities as required.
3. Vibration air quality and or noise monitoring programs.
4. Consultant to maintain:
 - a) Site diary
 - b) Traffic Management / control log book and photos. According to Ontario traffic manual Book 7
 - c) Environmental protection / siltation and erosion control, log book and photos. According to M.O.T. construction inspector's environmental field guide
5. Incident reporting
6. Complaint recording and resolution
7. Consultant will ensure contractor complies with Ontario Occupational Health & Safety Act (OHSA) and co-ordinate and document Environmental protection, siltation control meetings with respective agencies and enforcement officers on a regular basis, monthly or more often as required:
8. Consultant to issue a Contemplated Change Notice, review, provide estimate and recommend Change Order for approval to this region in a timely manner.

Communication and Municipal Liaison

- The Region and MacViro Consultants will be the principal point of contact with the Town of Aurora, LSRCA, MNR and DFO during the design phase of the project.
- Contact with all agencies will be established prior to construction and will be maintained as appropriate for the duration of the project. Regularly scheduled site meetings will be an important component of the EHTS project.

Schedule

- The Developer Group to provide regular project schedule updates regarding the status of approval of the various subdivision lands and the dedication of easements so that the Region may reasonably proceed with design of the EHTS

Sewer Use

- Upon substantial completion of the East Holland Trunk Sewer Tablelands portion, the Developer Group will commission to the Region to provide sewage servicing to the Town of Aurora;
- The Developer Group agrees to a maintenance period of five years
- Once the maintenance period has lapsed the Developer Group will transfer the ownership of the infrastructure to the Region free of all costs and encumbrances

Substantial Completion Conditions:

1. Video inspection of entire sewer reviewed and accepted by Region
2. Weir testing by Region
3. Manhole inspection by Region

Final Acceptance Conditions:

1. Video inspection reviewed by Region
2. Manhole inspection by others

4.0 FINANCE, FUNDING AND RISK MANAGEMENT

Insurance

- Geotechnical Engineer, Hydrogeologist and Engineer to carry insurance of not less than \$2,000,000 for professional and general liability
- Other consultants to carry insurance of not less than \$2,000,000
- Contractors to provide insurance naming Region in amount of not less than \$10,000,000, with a minimum of \$ 5,000,000 for each occurrence.

Bonding

- Contractors to provide to Owners (Aurora 2B Landowners) bonds for performance of the work to 100% of the value of the work in accordance with normal terms.

Indemnification Issues

- The Developer Group agrees to fully indemnify the Region of York against any and all legal action that may arise during the construction of the EHTS and thereafter.

Project Securities

- All works to be secured to Region of York by letter of credit prior to the commencement of construction (on a contract by contract basis) for 100% of estimated cost of construction.
- Letter of credit to be reduced over time in accordance with normal procedures to a minimum of 3% which is to be held until the end of the warranty period.

Warranty Period

- Warranty provisions for the sanitary sewers will be in effect from the date of Substantial Completion of the works and extend for a 5 year period ending with the total performance of the Contract.
- An inspection shall be undertaken at the end of the Warranty Period and any deficiencies shall be rectified before final acceptance and the release of the final 3% of the project security.
- All warranty work associated with factory manufactured products (i.e. Sewer pipe and manholes etc.) will be required to be carried out by the manufacturer or its authorized representatives. All routine warranty repairs must be completed within 2 weeks of notification to minimize disruption to operations. In the event of an emergency, repairs under warranty may be carried out by the Region, and the costs of repairs charged to the Aurora 2B Developer Group

Overall Funding Issues

- Funding for this project will be front ended by the Developer Group and will be credited to Development Charges in accordance with the Prepaid Development Charge Agreement.

Payment Approach

- The Developer Group will front end the cost of construction. Upon completion of the works to the satisfaction of the Region, the Region will pay their share of 20% of the total cost.

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