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GEOTECHNICAL SERVICES - CLASS ENVIRONMENTAL ASSESSMENT FOR THE EXPANSION OF THE KESWICK WPCP

The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, August 25, 2004, from the Commissioner of Transportation and Works:

1. RECOMMENDATIONS

It is recommended that:

1. The Commissioner of Transportation and Works be authorized to engage the firm of XCG Consultants Limited to provide geotechnical site investigation services in support of the Addendum to the Class Environmental Assessment for the Expansion of the Keswick Water Pollution Control Plant (WPCP) at an upset limit cost of \$82,565 (excluding GST).
2. The Purchasing By-law requirements be waived to permit this recommendation.

2. PURPOSE

The purpose of this report is to obtain Council authorization to permit the Commissioner of Transportation and Works to engage XCG Consultants Limited to provide geotechnical site investigation services at the Keswick WPCP.

3. BACKGROUND

Final treatment of sanitary waste from The Community of Keswick, located in the Town of Georgina, is currently provided through the Keswick WPCP, which is operated and maintained by York Region. The current serviceable capacity of the Keswick WPCP is approximately 33,000 persons. To increase the serviceable capacity beyond 33,000 people, the Keswick WPCP must be expanded.

In 1992, an Environmental Study Report (ESR) was prepared as the outcome of a Class Environmental Assessment (EA) to evaluate the potential to expand the Keswick WPCP to provide adequate sewage service capacity to accommodate an ultimate population of 60,000 people. This study suggested that the Keswick WPCP should be expanded in two phases. The five-year period for the validity of this ESR has expired, and an amendment to the ESR must be completed to proceed with the plant expansion.

In 1996, the Town of Georgina commissioned a Class EA to identify the appropriate method for the provision of sewage servicing to the Willow Beach and surrounding Lakeshore communities to address failing septic system issues. The EA identified the use of the Keswick WPCP as the recommended solution to service these communities

considering the planned expansion to the plant. Attachment 1 illustrates the service area of the Keswick WPCP, including the Willow Beach and Lakeshore Communities.

In 2004, a performance assessment and capacity evaluation of the Keswick WPCP was completed to confirm the serviceable capacity of the plant, identify opportunities to improve the performance of the plant, and confirm the timing of proposed upgrades to accommodate projected growth in the Keswick service area. The assessment indicated that a plant expansion may be required as early as 2007.

Timing for the Keswick WPCP expansion is reliant on the connection of the existing Willow Beach community to the Keswick WPCP. Currently, Regional contracts are underway for a new pumping station and forcemain to transport flow from the Willow Beach Community to the Keswick WPCP (*Attachment 1*). Furthermore, the Town of Georgina has proceeded with the construction of a new sanitary system to collect and transport sewage from the Willow Beach Community to the new Regional Pumping Station. Regional and Town works, along with residential connections, must be complete by December 31, 2005 to comply with requirements of Provincial funding provided to the Town of Georgina. With the completion of the Regional and Town works, the Keswick WPCP will be receiving flows from the existing serviceable Willow Beach Community by January 2006.

The current serviced population in the community of Keswick is approximately 20,500 persons. The existing Keswick WPCP has the capacity to service approximately 33,000 persons (based on sewage flow and population records for the period 1998 to 2002). The Town of Georgina has allocated the equivalent of 7,500 persons for the provision of services to the Willow Beach and surrounding areas, and 3,700 persons to existing and draft approved development in Keswick. With the extension of services to the Willow Beach area, the Keswick WPCP will have a remaining equivalent capacity of approximately 1,300 persons to service other development needs within the service area. Based on approved projected growth in Keswick, and the supply of sanitary services to the Willow Beach and surrounding communities, expansions to the Keswick WPCP may be required as early as 2007.

In April 2004, The Region issued a Request for Proposal (P-04-37) to retain a consultant to complete the addendum to the 1992 Class EA for the expansion of the Keswick WPCP. Submissions were received from XCG Consultants Limited and KMK Consultants Limited on April 28, 2004. Regional staff evaluated the technical and financial proposals, and recommended that XCG Consultants complete the project based on the highest overall score combined with the lowest cost. The project was awarded on June 21, 2004, at a cost of \$68,149.00 (excluding GST).

As part of their proposal, XCG Consultants indicated that a geotechnical investigation may be required within the scope of the project to adequately understand the technical challenges presented by existing conditions and to predict the effects of options for plant expansion. The geotechnical work proposed by XCG Consultants was not included in the accepted work program.

Geotechnical investigations were conducted as part of the original construction of the Keswick WPCP as well as the 1992 Class EA for the plant expansion. These investigations documented the complexity of the soil and groundwater conditions found on the Keswick WPCP site. Groundwater conditions at the time of construction identified requirements for dewatering during construction and the need to construct a permanent groundwater drainage system beneath the plant. Additional geotechnical work was not requested within the Scope of Work in the RFP for the Addendum to the Class EA as some additional work had been completed as part of the 1992 Class EA. As work on the EA Addendum has proceeded, XCG and Regional staff have discussed available knowledge and conditions and confirmed that additional geotechnical studies will be required to ensure that the EA Addendum addresses the current level of concern of the public and the Ministry of the Environment for projects involving temporary dewatering.

XCG have prepared an updated scope of work for geotechnical investigations that is intended to address current and future issues at this site. The additional costs associated with the proposed scope of work for geotechnical services are outside of the scope and contingency allowances outlined in the Purchasing By-Law, Regional staff is requesting that Council waive the purchasing By-Law and authorize the Commissioner of Transportation and Works to engage XCG Consultants to complete the geotechnical work in support of the Addendum to the Class Environmental Assessment for the Expansion of the Keswick WPCP.

4. ANALYSIS AND OPTIONS

The EA Addendum was initially scoped to revisit work performed in 1992 and update it to 2004. Additional geotechnical investigations were not included in the scope of the EA Addendum as the previous site work was believed to be sufficient.

Subsequent to the completion of the original Class EA in 1992, potential groundwater issues in construction projects have received considerably greater scrutiny from both a technical perspective on what is required to complete the project, but also from a public and regulatory perspective in terms of receiving approvals and addressing public concerns. Recent experiences include dewatering issues with the construction of the Willow Beach Water Treatment Plant and the 16th Avenue Trunk Sewer.

In review and discussion of the scope of the Class EA Addendum with XCG, Regional staff agreed that the scope of the Class EA Addendum needed to be expanded to ensure that all issues that could potentially affect the construction work and scheduling were fully understood. Potential requirements for dewatering, based on historical information obtained during plant construction were a primary motive for requesting for the previous geotechnical assessments to be updated so as to conform with current expectations of York Region, the public, the Ministry of The Environment, and the Lake Simcoe Region Conservation Authority.

4.1 Proposed Additional Geotechnical Work

The work proposed to be completed as “Additional Geotechnical Work” includes:

- Reviewing available documentation from historical work.
- Consulting with experts involved in historical work.
- Confirming existing site conditions and quantifying groundwater discharge from beneath the existing facility.
- Conducting additional soils and groundwater investigations and assessments in areas of proposed works.
- Determining requirements for Permits to Take Water.
- Determining requirements for future monitoring.
- Determining plans for managing groundwater issues before during and after construction.
- Evaluating the environmental effects of existing and proposed works.
- Integrating findings into the Class EA Addendum.

4.2 Benefits of Consolidating Services

Due to the timing of the required expansion at the Keswick WPCP, it is critical that the Addendum to the Class EA is completed as soon as possible so that design and construction of the plant can proceed in a timely fashion. XCG’s schedule for the Addendum for the Class EA indicates that their work should be complete by February 2005. They have also indicated that geotechnical information would be required by September 2004 in order to maintain their current schedule.

Due to the time constraints associated with the issuance of a new RFP or Request for Quotation (RFQ), it was determined that immediately awarding the geotechnical work to XCG was preferred so as not to delay the completion of the ongoing Class EA work. Furthermore, having XCG complete the geotechnical investigations would also provide better direction and facilitation of the geotechnical work and would ensure that the findings of the geotechnical work blended consistently with the progress and direction of the Class EA Addendum.

5. FINANCIAL IMPLICATIONS

The upset limit fee for the project is \$82,565 (excluding GST). Sufficient funds are available in the 2004 Capital Budget for this project.

6. LOCAL MUNICIPAL IMPACT

Timely completion of the Addendum to the Class EA for the Expansion of the Keswick WPCP would ensure that adequate servicing capacity is available to the Town of Georgina and the Keswick WPCP service area in accordance with the Official Plan population growth projections.

7. CONCLUSION

It is recommended that the scope of the Environmental Assessment Addendum for the expansion of the Keswick WPCP be increased to include detailed geotechnical investigations as determined through ongoing activities being undertaken by XCG Consultants.

XCG Consultants has provided an updated cost and scope of work for geotechnical investigations that is intended to address current and future issues at this site. The cost for this work is reasonable for the proposed work plan and it is recommended that the Commissioner of Transportation and Works be authorized to engage XCG Consultants to complete the geotechnical investigations at an upset limit of \$82,565 (excluding GST). There is sufficient funding in the 2004 Capital Budget to accommodate this increase.

The Senior Management Group has reviewed this report.

(A copy of the attachment referred to in the foregoing has been forwarded to each Member of Council with the September 8, 2004, Transportation and Works Committee agenda and a copy thereof is on file in the Regional Clerk's office.)