

Notes of Meeting #5

Community Liaison Committee – Clarington Transformer Station (TS)

Date of Meeting: Thursday, November 23, 2017
Time: 7:00 p.m. to 9:58 p.m.
Location: Solina Community Hall, 1964 Concession Rd. 6, Hampton

1.0 Participants

- Brad Bowness, Vice President of Distribution, Hydro One
- Andrew Spencer, Vice President of Transmission and Stations, Hydro One
- Jeff Cridland, Project Manager for Clarington TS, Hydro One
- Paul Dalmazzi, Environmental Planner for Clarington TS, Hydro One
- Doris Chee, Landscape Architect, Hydro One
- Denise Jamal, Senior Manager, Community Relations, Hydro One
- Roger Freymond, Stantec Consulting
- Brant Gill, Cole Engineering
- Clint Cole, Enniskillen Environmental Association (EEA)
- Jim Sullivan, EEA

Clarington TS CLC Meeting #5 Final Agenda

- Opening Remarks – Andrew Spencer (Hydro One), Brad Bowness (Hydro One) and Clint Cole (EEA)
- Review of Monitoring Results - Brant Gill, Cole Engineering and Roger Freymond, Stantec Consulting
- Construction update - Jeff Cridland, Hydro One
- Update on Habitat Creation & Visual Screening - Paul Dalmazzi and Doris Chee, Hydro One
- Break
- Review of Environmental Studies – Clint Cole on behalf of Doug Taylor, EEA
- Review of EA Process - Jim Sullivan, EEA
- Review of Well Monitoring Program - Clint Cole, EEA
- Facilitated Q&A
- Closing remarks

2.0 Introductions and Agenda Review

The meeting was called to order at 7:00 pm, with Charles Muggeridge, as moderator and Brad Bowness and Clint Cole as co-chairs.

Charles Muggeridge welcomed and thanked everyone for attending the CLC meeting. He walked through the meeting logistics, rules, treatment of questions and the agenda. Following a review of the meeting logistics, Charles asked that the co-chairs of the meeting provide their opening remarks.

3.0 Opening Remarks from Co-Chairs

Brad Bowness introduced himself as one of the accountable executives who has overseen the Clarington TS project for the past four years. He identified that the purpose of the meeting was to provide updates on the status of construction and review the 2017 data collected as part of the monitoring program. He also noted that this was the final CLC meeting, but that Hydro One would continue to communicate with the community and maintain a strong relationship with local residents. Brad concluded his opening remarks by confirming he had recently transitioned to a new role as Vice President (VP) of Distribution and that Andrew Spencer had taken on the role of VP of Transmission and Stations.

Andrew Spencer introduced himself and described his accountabilities for both the construction and maintenance of transformer/transmission projects throughout their lifecycle. He noted that he has been a part of the Clarington team for the past two years and participated in previous CLC meetings. He confirmed that station construction was completed earlier in 2017, that some connections to the system had been made, and confirmed that Clarington TS would be fully operational once the final 230 kV connections were made, anticipated to be completed in 2018. He discussed the importance of the project, noting that Clarington TS is one of the largest investments in Ontario's electricity system at this time and that the project will serve a crucial role in delivering power and reliability to the Eastern GTA in advance of the retirement of Pickering Nuclear Power Station. Andrew concluded his opening remarks by introducing the Hydro One team members presenting and provided a brief description of their roles on the project.

Clint Cole, co-chair, introduced himself and members of the Enniskillen Environmental Association (EEA). He provided a brief overview of the EEA's involvement with the project starting in 2006 with the Enfield TS project. He concluded by thanking all in attendance for participating and hoped that the information shared would be found helpful.

4.0 Feedback, Comments and Questions

The following summarizes the feedback, comments and questions that were raised throughout each presentation at the CLC meeting according to major themes. Subsequent responses to questions listed below are included in the attached appendix.

Presentation #1 – Review of 2017 Monitoring Results, Presented by Brant Gill, Cole Engineering and Roger Freymond, Stantec Consulting

Summary: 2017 Monitoring Program Overview

A review of the regional geology of the project site was presented, including the local subwatershed and topographic conditions, which have helped characterize the surface water and shallow groundwater conditions within the project area. Brant Gill presented maps identifying the locations of all boreholes, monitoring wells and surface monitoring stations that have been installed in the project area as part of the Groundwater and Surface Water Monitoring Program and introduced the Site Conceptual Hydrogeologic Model.

Historic Climatic Conditions and Water Levels

Mr. Gill described and reviewed the historic climatic conditions observed at the Clarington TS site based on data collected from Environment Canada and CLOCA monitoring stations over the years. Historic precipitation levels and hydrographs displaying observed water levels on-site were also presented, to illustrate the strong correlation between the two sets of data. The data presented demonstrated that water levels observed on site have continued to respond and fluctuate according to seasonal conditions and weather events, and that this trend has continued throughout the construction of the station, concluding there have been no adverse effects on the shallow and deep groundwater systems during construction.

Groundwater Drawdown Model Results and Groundwater Contour Map

Mr. Gill presented and explained the Groundwater Drawdown Model that was used as part of Hydro One's Permit to Take Water application. As part of the application, detailed calculations were performed to estimate groundwater seepage rates and predict the radius of influence of the shallow groundwater table drawdown that could occur as part of the planned grading activities. These predictions were then multiplied by conservative factors to over-estimate the potential effects. Following the completion of grading activities, Mr. Gill explained that data collected from monitoring wells over the past two years (post-grading) indicates that the groundwater drawdown observed on Site has been as predicted but far less than the conservatively over-estimated scenarios in the groundwater drawdown model. It was explained that the predicted model purposely used conservative assumptions, predicting a far greater drawdown effect than what has since been observed. The groundwater monitoring data collected over the past two years demonstrates that the nearest shallow and deep private wells have not been affected by construction activities because they are outside the maximum radius of influence of water taking. A groundwater contour map developed from the monitoring data was also presented to demonstrate that no shallow private wells are located immediately down gradient of the transformer station.

Groundwater Monitoring Results

An overview of the 2017 groundwater quality results were presented based on data collected from 14 shallow, 2 intermediate and 9 deep private wells. The groundwater quality parameters measured were listed and described in relation to the Ontario Drinking Water Quality Standards. Mr. Gill reiterated that the monitoring data collected continues to demonstrate that groundwater conditions and responses over time have remained consistent, and have not changed significantly throughout station construction.

Surface Water Monitoring Results

An overview of the 2017 surface water quality results was presented. The surface water parameters measured were listed and described in relation to the Provincial Water Quality Objectives. Mr. Gill reiterated that the data collected continues to demonstrate that local water quality and quantity conditions in nearby creeks have remained largely consistent throughout construction.

Storm Water Management Monitoring Results

Information about the Clarington TS shallow storm water management system and its function was presented. To help demonstrate how the system has been functioning, a graph was presented comparing the observed discharge flow from the station outlet in relation to precipitation events. Mr. Gill explained that the flow of water discharged from the station has been directly correlated to precipitation events and periods of low precipitation. The data presented confirmed the shallow storm water management system is working as it was designed; as the highest discharges have occurred immediately after large storm events and no discharge has been observed during extended dry periods. He also reiterated that water discharged from the storm water management system stays within the Harmony Creek subwatershed, which would have received the same precipitation prior to construction. Further, the shallow storm water management system delays and attenuates precipitation runoff from the Site, thereby allowing for increased infiltration and reduced erosion in Harmony Creek during and immediately following a storm event.

Site Conceptual Model Update

- Mr. Freymond described the site conceptual geologic model which has been informed by several years of data collected from the project area both before and during station construction. Mr. Freymond reiterated that the Newmarket Till is an effectively impermeable unit which serves to protect deep water aquifers. Mr. Freymond explained that this was confirmed by a continuous cored borehole drilled for the MW5 well nest, in collaboration with other researchers. The results from the continuous core found the Newmarket Till present at surface and confirmed that this till extended to a depth of approximately 76 m.

- Mr. Freymond presented information about the Newmarket Till and associated sand layers. It was explained that when the borehole was drilled for the MW5 well nest, small layers of sand were encountered at shallow depth (approx. 2 m below ground surface) and just above the Thorncliffe aquifer (approx. 52 m below ground surface). However, Mr. Freymond explained that if there were fractures or other vertical pathways through the protective till, then the monitoring data would indicate vertical connectivity between the upper and intermediate sand units. Mr. Freymond presented a hydrograph displaying water level data collected from the upper and intermediate sand units encountered in the Newmarket Till which displayed a large head difference (difference in water levels observed between monitoring wells at different depths) between the two units. The large head differential observed over time confirms there is no direct hydraulic connection between the two sand units. Mr. Freymond also presented groundwater quality data from the monitoring wells installed in the sand units displaying the geochemical variance between the units. Mr. Freymond explained that if the shallow and intermediate sand units were connected, chemical concentrations for certain parameters would be similar within both units. Monitoring data presented demonstrated that the chemical concentrations observed for common parameters differed within the sand units. Mr. Freymond concluded that based on the data collected, the Newmarket Till is as protective as initially hypothesized, and therefore, the transformer station could be constructed without presenting a risk to private wells.

Presentation #2 – Construction Update, Presented by Jeff Cridland, Hydro One

Summary of Accomplishments and Key Dates

Mr. Cridland presented on construction milestones and key completion dates for the remaining work at Clarington TS. He explained that station construction was completed in 2017, and confirmed that the first 500kV connection and two 230 kV connections into the transformer station have been made. Mr. Cridland noted that the remainder of equipment commissioning and further 230 kV connections, as well as landscaping and restoration work, would continue in 2018. Hydro One clarified that Clarington TS is scheduled to be fully operational by April 2018.

Presentation #3 – Update on Habitat Creation Plan and Visual Screening Activities, Presented by Paul Dalmazzi and Doris Chee, Hydro One

Habitat Creation Plan and Visual Screening Activities

Mr. Dalmazzi provided a brief overview and status update on the Habitat Creation and Visual Screening Plan. Mr. Dalmazzi stated that since the workshop held in May 2016, feedback received from community members had been incorporated into the final plan, including suggestions for more extensive control of invasive plant species. Mr. Dalmazzi informed the CLC that in 2017, a contractor had been selected and that habitat creation work, including Pit & Mound upland forest and some shrub thicket plantings, had been completed in the Fall 2017 planting window at the northwest end of the property. Mr. Dalmazzi also provided an overview of next steps for the habitat creation work, including the planting and restoration work that is planned for 2018.

In addition, Ms. Chee presented visual simulations of the berming and visual screening plantings, which are expected to occur in 2018.

Presentation #4 – Review of Environmental Studies, Presented by Mr. Cole

Mr. Cole, a member of the EEA, shared an analysis of literature reviews on behalf of another member of the EEA on the Oak Ridges Moraine and hydrogeology. A series of questions were presented to Stantec based on the literature review completed. These questions and Hydro One's responses have been captured in the attached appendices (refer to Q/A 1a,b,c). A series of excerpts from research papers discussing hydraulic conductivity was shared and it was suggested that additional research to confirm whether fractures may be present at the Clarington TS site must be completed. Specific questions and answers related to this topic have been captured in the attached appendices (refer to Q/A 2 in addition to subsequent Q/A 10, 12 a,b,c).

Presentation #5 – Review of EA Process, Presented by Mr. Sullivan

Mr. Sullivan, a member of the EEA presented an overview of his involvement with both the Enfield TS and Clarington TS projects. He expressed concern with the health assessments required for infrastructure projects in general. Mr. Sullivan also described his experience as a stakeholder during the Enfield Transformer Station (TS) Class EA Process. A question was posed to Hydro One about the timing of when the need for Clarington TS was identified. Hydro One's response has been captured in the attached appendices (refer to Q/A3). Mr. Sullivan recommended Hydro One provide more clarity at the onset of all environmental assessment projects moving forward to ensure stakeholders clearly understand the scope of the undertaking.

Presentation #6 – Review of Well Monitoring Program, Presented by Mr. Cole

Mr. Cole noted the absence of MOECC staff at the meeting and suggested the forum of the Community Liaison Committee (CLC) could be more efficient. Mr. Cole also shared that in his opinion more data could have been collected

including for the Enfield project. It was also noted that there was concern that a sufficient baseline monitoring platform had not been established and that additional research should be conducted to determine if the conclusions made to date are accurate.

- Mr. Cole concluded his presentation with the following requests:

Action #1: *Request that local shallow wells be replaced by Hydro One.*

Action #2: *Request that the monitoring program be extended for the life of Clarington TS in place of the current two year extension (i.e. operational life).*

Action #3: *Request that soil be tested both inside and outside the Clarington Transformer station fence (semi-annually for the first three years; quarterly for three years after).*

Action #4: *Request that the sonic well data collected from the CLOCA license be shared with the EEA and members of the public.*

Action #5: *Request that property owners be compensated by Hydro One for decreased property values as a result of Clarington TS construction.*

Action #6: *Request that all Enfield TS construction be stopped until additional hydrogeological data is collected from the rotonomic monitoring well and reviewed.*

Following the CLC meeting, Hydro One provided the below responses to each of the action items:

1. Hydro One response: As communicated during the early stages of the project, Hydro One's team has maintained our commitment to ensuring that the Clarington TS does not adversely affect well water for neighbours in the area during the construction and operation of the Clarington Transformer Station. Throughout our work at the site over the past few years we've made this commitment a priority by investing in initiatives to study and obtain scientific data directly from the site. For the past four years, substantive studies and monitoring activities have confirmed that construction activities have not had an impact on the quality or quantity of private well water. We remain committed to protecting the local water supply through our Well Interference Process. On each occasion we've received a well complaint, Stantec has initiated an immediate review of the complaint within 24 hours. Upon Stantec's review of each complaint received to date, it was determined that there was no connection to Hydro One's construction activity. We take each of these complaints very seriously and saw that the proper steps were followed diligently.

We remain confident in this process set in place which will continue throughout the duration of the private well monitoring program. If it is determined that well interference has occurred as a result of the construction and operation of the station, Hydro One will ensure a safe water supply is provided for affected homeowners. We remain firm on this commitment.

2. Hydro One response: The Groundwater and Surface water Monitoring Program for the Clarington TS project was approved by the MOECC Central Region Director in June 2014, with the condition that it continue throughout the construction of the station and during the first two years of operation, extending into 2020.

Our team agreed to extend the private well monitoring portion of the program for two additional years post-operation, following a request received by community members at the CLC meeting held in March 2017. Our team is pleased that the community sees value in this program, and we look forward to the continued sharing of these data two years beyond our initial commitment, extending into 2022.

3. Hydro One response: Hydro One collected soil samples during the installation of the initial well nests for the Groundwater and Surface Water Monitoring Program and the results of these samples are presented in Table G1, Appendix G of the Baseline Conditions Report. There is no requirement for soil testing on an on-going basis.

Hydro One has a robust proactive maintenance system in place at Clarington TS in order to ensure our equipment operates safely and the environment remains protected. This consists of several layers of protection including 24/7 monitoring, a self-containment system located on each of the transformers and an oil-water separator. This equipment is designed to protect the natural environment at all times.

4. Hydro One response: Hydro One looks forward to the continued opportunity to support regional research in the Clarington area and collaborate with local researchers. The agreement between Hydro One and CLOCA for the drilling of the rotonomic borehole is intended to further facilitate this purpose. We also recognize there is interest from the community in accessing and viewing this data. As per the license agreement in place, data obtained through this agreement is done so on behalf of CLOCA and therefore considered their property.

However, at the latest CLC meeting, Dr. Rick Gerber confirmed it has always been CLOCA's intent to make this information publically available. For any other questions about these data, we encourage you to follow up with Dr. Rick Gerber directly.

5. Hydro One: When constructing infrastructure throughout the province, it's not Hydro One's practice to provide compensation when expropriation of property is not involved. With that in mind, throughout the lifetime of the construction of Clarington TS, our team has looked for opportunities to meaningfully invest in the community and we continue to look for opportunities to mitigate any disruption caused by construction. This includes the significant habitat creation and visual screening plan for the site that will continue to be implemented after construction completion.

5.0 Closing Remarks by Co-Chairs and Conclusion

In closing, members of EEA reiterated the group would like to continue working with Hydro One, but hoped closer communication could be achieved to ensure the timely sharing of information.

Mr. Bowness thanked all those in attendance for participating in the informative discussion. He reiterated Hydro One remains committed to protecting the environment and working with the community to ensure safe and reliable electricity is delivered to the residents of Ontario.

Charles Muggeridge adjourned the meeting following the closing remarks. The November 23, 2017, CLC meeting was completed at 9:58 pm.