

Community Liaison Group Meeting #4 Summary



Centre Wellington Tier 3 Water Budget Assessment Community Liaison Group Meeting #4

Monday, November 18, 2019
7:00 – 8:40 pm
Aboyne Hall, Wellington County Museum
536 Wellington County Rd 18, Fergus

Meeting Summary

Welcome, Agenda Review, and Introductions

Mr. Jim Faught, Director, Community Engagement with LURA Consulting, welcomed attendees to the meeting and introduced himself as the neutral, third-party meeting facilitator and Mr. Amitai Zand, Community Engagement Coordinator with LURA Consulting, as the note taker. Mr. Faught reminded attendees of the purpose of the night's fourth Community Liaison Group (CLG) meeting, which was to provide a refresh of the Centre Wellington Tier 3 Water Budget Study process, scope and key participants, and to provide an overview of the results of the recently completed Risk Assessment Report. He also reviewed the mandate of the CLG and the group's code of conduct and terms of reference (available on the project [website](#)). Mr. Faught clarified that members of the public in attendance who were not members of the CLG were welcome to participate in the meeting in an observational capacity only.

Mr. Faught provided an overview of the meeting's agenda. The agenda can be found in Appendix A of this summary.

Mr. Faught led a round of project team member and CLG member introductions. The list of project team members and CLG members in attendance can be found in Appendix B of this summary.

Presentations

Four presentations were given: a project context update and a review of the Tier 3 process, a review of the groundwater flow model, an update on the Township's Water Supply Master Plan (WSMP), and a presentation of the risk assessment results. A combined copy of all four presentations is available on the project [website](#).

(1) Project Context Update and Review of the Tier 3 Study Process

Martin Keller, Lake Erie Region Source Protection Program Manager

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Mr. Martin Keller began by updating attendees that the Ontario provincial government announced today a proposal to extend the current moratorium on new water bottling permits for nine more months, until October 1, 2020.

Mr. Keller informed attendees that the Province has completed a review of policies, programs, and science for its Water Quantity Strategy.

Mr. Keller provided updates on the Middlebrook Well, owned by Nestle Waters Canada. He noted that the well was incorporated into the groundwater model but not a part of the Tier 3 Risk Assessment. The Risk Assessment recommends a more fulsome evaluation of the Middlebrook Well for future water taking, as currently there is a lack of local information about the well, and water taking from the well is not currently permitted through the provincial Permit to Take Water (PTTW) program.

Mr. Keller explained that the PTTW program entails a review of site-specific assessments of impacts to other water takings and the natural environment.

Mr. Keller provided an overview of the Tier 3 study components and where the study fits within the current system of regulatory processes (e.g. PTTW, the Safe Drinking Water Act, WSMP, Provincial Policy Statement, and Environmental Assessments).

Mr. Keller concluded his presentation with an overview of the CLG input and peer review process.

(2) Groundwater Flow Modeling Review

David Van Vliet, Vice President, Technical Practice Areas, Matrix Solutions Inc.

Mr. David Van Vliet began by presenting a timeline of the Tier 3 study with major report milestones:

- Late 2017: Characterization report
- Early 2019: Model report
- Now: Risk assessment report
- Next: Policy development

Mr. Van Vliet gave an overview of the geographic study area for the project, the background review, and the project's various data inputs. He then explained how groundwater flow can be interpreted using the provincial domestic well database and other high quality well data, showing a map of groundwater flow in and around the Centre Wellington area, with much of the flow moving south towards the Grand River and other coldwater streams, with some removal by groundwater wells along the way.

Mr. Van Vliet presented a pie chart showing estimated groundwater demands in the area, proportionally by user type, and then showed a map of water well monitoring locations in the area.

Mr. Van Vliet presented an overview of how groundwater models are developed, what they are, and how they are used. He explained that they mimic real-life circumstances that cannot be tested in the field, in order to answer "what if" questions of groundwater flow and supply. He continued by explaining

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how characterization (geological interpretations, layer property interpretations, and water demand/water level data) contributes to the groundwater flow model, and how the model is calibrated. As an example, he noted that a municipal well shutdown test in 2012 provided information to help calibrate the Centre Wellington groundwater flow model, acknowledging however that uncertainty in the model grows further outside the Township's serviced area where the availability of high quality data decreases.

Mr. Van Vliet guided attendees through an animation of the groundwater flow model for Centre Wellington showing a cut out of the local geological layers and hydraulic conductivity.

Mr. Van Vliet concluded his presentation with a review of what a water budget is (i.e. a quantification of water flow inputs [sources] and outputs [uses]).

(3) Centre Wellington Water Supply Master Plan (WSMP) Update

Colin Baker, Managing Director of Infrastructure Services, Township of Centre Wellington

Mr. Colin Baker updated attendees on the status of the Township's Water Supply Master Plan. Local council approved the WSMP in June, 2019 and the Township has filed a notice of completion with the province. The WSMP indicates that the serviced population of Centre Wellington is projected to double by 2041. Mr. Baker presented a graph of the average and maximum day demand for water in Centre Wellington and noted that the WSMP determined that the municipality would require a new water supply source before 2031.

Mr. Baker remarked that Phase 2 of the WSMP involves developing and evaluating alternatives, identifying and mitigating impacts, and developing an implementation strategy. He also noted that the WSMP recommends that some Centre Wellington wells be deepened, and that new water sources must be identified.

Mr. Faught asked attendees if they had any questions of clarification so far. They had none.

(4) Presentation of Risk Assessment Results

David Van Vliet, Vice President, Technical Practice Areas, Matrix Solutions Inc.

Mr. David Van Vliet presented an overview of the Tier 3 Risk Assessment (RA). He noted that the province lays out specific steps that must be followed to complete an RA.

He explained that an RA evaluates a number of "what if" scenarios that could impact the local water supply, such as current demand, drought, projected population growth, increased development, etc. He noted that groundwater recharge decreases with increased paved development, and to illustrate, presented Centre Wellington's Official Plan map with areas slated for redevelopment highlighted. Mr. Van Vliet presented a scenario matrix, saying that Centre Wellington's water demand can successfully be met until 2031 under multiple scenarios barring any unforeseen issues. Past 2031, however, a new water source will need to be found to meet demand since the current well infrastructure capacity cannot sufficiently meet the projected average day demand in 2041, representing a significant level of risk to local water security.

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Mr. Van Vliet gave an overview of a municipal well diagram, explaining that numerical model scenarios are run, and if water falls below the safe operating level of the well, then water demand will not be met, or the well may not operate reliably.

Mr. Van Vliet showed a map of coldwater streams and wetlands in and around Centre Wellington, as well as a map from the RA showing the delineation of Centre Wellington's Vulnerable Area with the drawdown cones within it. He explained that drawdown cones form when water is extracted by a well. As the water is withdrawn, the water table's elevation decreases in the shape of a cone. Mr. Van Vliet explained that multiple wells, increased rates of pumping, and proximity to other water takings increase the size of drawdown cones and may affect nearby cones. . Mr. Van Vliet noted that although water takings and future developments within the Vulnerable Area do not necessarily affect the municipal water supply, the Vulnerable Area is assigned a significant risk level and all groundwater takings and potential groundwater recharge reductions within it is classified as significant water quantity threats.

An attendee asked Mr. Van Vliet to clarify whether the RA was part of a Risk Management Measures Evaluation Process (RMMEP), and Mr. Van Vliet responded affirmatively.

Mr. Van Vliet presented a map of water quantity threats in the Vulnerable Area and a number of insights gained from the RA, including (among other insights) the conclusion that unserviced domestic water well pumping, as well as other existing water uses like livestock watering, only minimally or negligibly affect Centre Wellington's water supply aquifer. He also gave an overview of the Tier 3 study's peer review process and peer review committee, and how they ensure that the Tier 3 water study work is scientifically defensible.

Facilitated Discussion

Questions of Clarification

A summary of the questions of clarification is provided below. Questions are noted with **Q** and responses are noted by **A**. Please note this is not a verbatim summary.

CLG members were given the opportunity to ask questions and share comments or concerns relating to the risk assessment report.

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Q. Was the Vulnerable Area assessed to 2031? Will it become wider and deeper in the future?

A. Yes, it was, using the 2031 projected municipal water pumping rate. The delineation of the vulnerable area is not expected to change significantly in the future but could change in shape with the additional of new or private permitted takings. The municipal wells will have minimal impact on the shallow system.

Q. What impact does the Vulnerable Area have on other uses like private wells? How will the municipal water system affect private unserviced supply and deep livestock watering wells?

A. Most agricultural wells interact with water above the aquitard. Increased pumping has a very minimal impact to shallow water levels or ecological features. If the livestock wells are deep and further from the municipality, they will not have a significant impact on municipal well water levels. Aquaculture wells, for example, have a high pumping rate and this does affect overall water levels in the aquifer, but it does not translate to impacts to municipal well water levels.

Q. Given the amount of uncertainty and data gaps, how confident are you in the delineations of the vulnerable areas?

A. The closer to the service area/municipal area, the higher the confidence. Everything we know about the Gasport Aquifer implies a larger area. Leakage rates can affect the delineations.

Q. As you collect more data, could you refine the vulnerable area delineations?

A. The municipality can re-run the scenarios to see if the delineations change.

Q. Pump tests yield a lot of data, but could the township not conduct its pump tests first? Which pump test would come first?

A. There is no set sequence for this, but as we look at new areas for water supply, there would be a process to update this work and the model. It is legislated under the Clean Water Act that we need to update the vulnerable area delineations before doing that.

Q. I have been impressed with what I have seen in the Tier 3 work so far. The work is very thorough despite the uncertainties. Will the transparency continue going forward with stakeholder engagement? It is important to me that the process and data are transparent and accountable.

Thank you for the kind words, but it is a question we will need to ask ourselves going forward. Eventually there will be new information available, and at that time we will be talking to the township about the process. It may not look the same as the Tier 3 process, but we will explore ways to maintain the engagement. Further, more formal engagement will take place with the Source Protection Committee before we can submit the entire product to the province.

Q. Does the model take into account any growth in aquaculture uses?

A. No, it does not. In other Tier 3 studies in the province, however, we have looked at how changes in uses could impact the municipality's water supply. That said, if you were to redo the Tier 3 here after a number of years, you may see changes in uses. If new uses are introduced in this area, policy could call for running the model again. You would have to look at it on a case-by-case basis. There is no process for changes for non-municipal water uses, although there is for municipal uses (e.g. official plan, land use and development targets).

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Q. The Vulnerable Area Delineation map looks to me like a bucket of water. Each area within the map has different water conductivity rates. The municipality has identified future well sites with good conductivity rates. Once you have identified the best municipal well sites, should those areas be granted special protections, standards, and policies? Because some areas are more ideal for taking water than others and should be protected.

A. The idea of the vulnerable area is to map out an area to protect and further study water takings within that area. There are wells that are highly productive and areas that are not, so testing is important, but viability of individual wells are not guaranteed so it is difficult to protect them for that reason. The uncertainty of current data does not make it feasible to subdivide the vulnerable areas into smaller areas and protect some but not others. The larger area does not experience impacts universally the same across the whole area, but insights from this stage of the study will translate into policy development that addresses changes across the whole vulnerable area. The AECOM map shows ideal scenarios and locations for future wells based on these ideal scenarios. But the underlying geology of installing pumping wells at these locations is unknown, and so are effects of those individual future wells on water supply. We would need more studies, testing and data to be able to subdivide the WHPA into areas that would need to be protected, however, this takes a lot of time and money and is not currently feasible as we cannot protect something that isn't certain.

Q. With the boundaries of your modelling study, the boundaries for drought surprise me. They are relatively limited and based on the facts you have. But considering what is happening with droughts in California and Australia, no one thought there would be major droughts there but now there are. If in 2035 there is a major drought here, what security is there for the local water supply?

A: Climate change assessment and drought assessment do address the risk due to major droughts and climate change. There was a period in the 1960s when there were significant drought conditions here in Centre Wellington. We run models using the 1960s drought experience see how the municipal water supply would respond to those conditions if the drought reoccurred. In this part of the world (Southern Ontario), the general effects projecting from climate change is wetter, warmer winters. This will result in greater groundwater recharge, so our groundwater supplies may not be adversely affected by climate change. We feel therefore that Centre Wellington's water supply is more resilient to climate change as compared to other areas of the world.

Q. Are you making assumptions that current climate change predictions from today will hold for all of the next 25 years?

A: We are making the assumption that the current climate change projections are the best estimate at this point in time to predict climate change effects on our water supply over the next 25 years. Climate change projections are updated approximately every 5 years and we always recommend updating our effects modelling as new data becomes available.

Q. What about the precautionary principle? Does it figure in the policy framework? Decision makers have different levels of risk aversion when it comes to making policy.

A. The Water Supply Master Plan does use that principle when we theoretically take the largest well offline during modelling. This ensures that we plan for a resilient supply under multiple scenarios.

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Q. Is there consideration for potential contamination in the modelling?

A. No, not in the quantity assessment. That is a separate process: There is a whole other side of the source protection program that focuses on quality and evaluates the impact of contamination on municipal wells.

Q. Has the preferred strategy been published yet?

A. Yes, the report is public. Deepening some of the wells (F2 and F5) and optimizing others is one of the recommendations from the assessment. Water conservation measures are also part of the WSMP recommendations. These are in addition to exploration for new groundwater sources. The Water Supply Master Plan is available to view on the Centre Wellington website.

Q. Who would pay for a study on contaminant flow/transport? Climate change was not included in this assessment, the report says, only drought. Is the ministry going to keep funding the Tier Three and other needed work? There is more to study but the funding seems to be running out.

A. Contaminant flow and transport is not within the scope of the Tier 3 and we need to be careful about the scale of these studies. The scale of the Tier 3 is quite large, and the scale needed to assess local contamination issues is quite small. We are fairly close to having completed the climate change component of this study and this will be published separately.

In addition to the Tier 3, the municipality will always continue its work to secure a long-term reliable water supply. Much of the township's work is to service growth, and these studies, such as the WSMP, are funded by the growth itself through development charges.

Contaminated sites are being monitored but it is the MECP responsibility. They have offsite assessments and hydrogeological studies which are not always made public. The contaminated sites is a process carried out by the MECP, not by the Township.

Q. Would Tier 3 do the groundwater contamination modelling? Who will do it?

A. The MECP (Ministry of Environment, Conservation and Parks) through legislation requires the identification, monitoring and clean-up of potential contamination sites.

Q. Is this work part of the off-site assessment and monitoring?

A. It is out of scope of the Tier 3 study. A site-specific contamination or contaminant fate and transport assessment is totally different from this water quantity assessment. Insights from each can certainly inform the other, but they are separate processes.

Q. Will the policies coming out of the Tier 3 study be approved when the moratorium ends? Why the October 2020 date for the moratorium?

A. The moratorium is under the province's purview, but we will not have approved policies before the moratorium expires. The October public consultation period has no connection to the proposed end date for the moratorium.

Q. Is there an opportunity for additional input or review of the risk assessment?

A. You will have two weeks from the release of the meeting notes to comment, which will be within two weeks from today.

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Next Steps and Adjournment

Mr. Keller confirmed with CLG members that they should provide any additional comments or questions regarding the Risk Assessment and Report within two weeks by December 6, 2019. He explained that these comments will be summarized and posted on the project website. Mr. Keller stated that presentations from the meeting will be posted on the project website. Mr. Keller explained that the next steps include the project team developing draft policies using the insights from the Tier 3 study process to date. The draft policies will be presented to CLG members for feedback at the next CLG meeting. The date for the next CLG meeting is to be determined but will likely occur in February or March 2020.

Mr. Faught and Mr. Keller thanked CLG members for contributing to the discussion and adjourned the meeting.

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Appendix A – Agenda

Centre Wellington Tier 3 Water Budget Study

Community Liaison Group Meeting #4

Monday, November 18, 2019

7:00 – 9:00 pm

Aboyne Hall, Wellington County Museum

Meeting Purpose:

- 1) Provide a refresh of the study process, scope and key participants;
- 2) Provide an overview of the water budget and risk assessment process;
- 3) Receive feedback on the Risk Assessment Report; and
- 4) Address any questions about the process overall.

AGENDA

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| 7:00 pm | Welcome
Jim Faught, Facilitator, Lura Consulting |
| 7:05 pm | Introductions and Updates
Martin Keller, Lake Erie Source Protection Region |
| 7:15 pm | Review Summary
David Van Vliet, Matrix Solutions Inc., and Colin Baker, Township of Centre Wellington |
| 7:25 pm | Water Budget Review
David Van Vliet |
| 7:40 pm | Risk Assessment
David Van Vliet |
| 8:00 pm | Discussion and Feedback <ul style="list-style-type: none">• <i>What did you like or confirmed your thinking in the Risk Assessment Report?</i>• <i>Was there anything surprising or concerning in the Risk Assessment Report?</i>• <i>Any other comments?</i> |
| 8:30 pm | Next Steps and Wrap Up
Martin Keller and Jim Faught |
| 8:40 pm | Adjourn |

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Appendix B – List of Attendees

A. Community Liaison Group Members Present

Member	Organization
Andreanne Simard	Nestlé Waters Canada
Dave Blacklock	Wellington Water Watchers
Derek Graham	Chamber of Commerce
Jan Beveridge	Save Our Water
Jim Wilton	Save Our Water (alternate member)
Colin Richardson	Public Interest
Tom Nudds	Public Interest

B. Project Team Members Present

Core Team	Support Team	Organization
Martin Keller Sonja Strynatka		Grand River Conservation Authority
David Van Vliet	Jeff Melchin Christian Gabriel	Matrix Solutions Inc.
Kyle Davis	Emily Vandermeulen	Wellington Source Water Protection
Colin Baker	Courtney Fish	Township of Centre Wellington
Jim Faught	Amitai Zand	Lura Consulting
Kathryn Baker		Ministry of Environment, Conservation and Parks

In addition to the participants listed above, 5 observers were in attendance at the meeting including members of the public and Ian MacRae and Neil Dunsmore, two councillors for the Township of Centre Wellington.