Lake Erie Source Protection Region
Guelph-Guelph/Eramosa Water Quantity Policy Development

Summary of
Community Liaison Group Workshop
May 23, 2018

7:00 p.m. – 9:00 p.m.
Victoria Park East Golf Club
1096 Victoria Rd. S., Guelph

Summary Prepared by Lura Consulting

1 Introduction

Meeting Purpose

The purpose of the workshop was to provide context and information about the technical studies that help guide the development of source protection water quantity policies, including a review of the results of the Tier 3 Technical Study and an update of the Risk Management Measures Evaluation Process (RMMEP). The workshop also aimed to provide an update on the current state of the policy development process.

Background Materials

Committee members were provided responses to CLG questions from the February 13, 2018 workshop summary as well as an updated FAQ sheet (Version 2). The Tier 3 study, all previously shared documents, meeting summaries, and a copy of the CLG Terms of Reference remain available to participants online.

Meeting Format

The workshop opened with a welcome, agenda review, and introductions, facilitated by Susan Hall, of Lura Consulting and Martin Keller, of the Grand River Conservation Authority. Ms. Hall provided an overview of the March 7th workshop summary; the CLG approved the summary. Mr. Keller presented a summary of the completed Tier 3 Technical Study results, an update on the Risk Management Measures Evaluation Process, and an update on the current state of policy development process. Committee members were provided the opportunity to ask questions following each presentation.

2 Summary of Community Liaison Group Feedback

The following is a summary of the Community Liaison Group's questions and comments, provided after the presentations. Questions are marked with a '**Q**,' answers are marked with an '**A**' and comments are marked with a '**C**.'

Completed Tier 3 Technical Study Results and the Risk Management, Monitoring and Evaluation Process (RMMEP)

Following presentations on the Completed Tier 3 Technical Study results and the RMMEP by Mr. Keller, CLG members asked the following questions:

Q. I'm concerned that the Tier 3 uses a regional model to predict local situations, and that it can be manipulated to provide certain outcomes. I'm also concerned about population growth projections and areas of development being used in the modeling, as these projections are not certain. Therefore, there should be some hesitancy about using this model.

I'm also concerned about how this model predicts impacts on wells (e.g. Rockwood, where Well 3 might be impacted in 5 or 6 years). Additionally, in terms of drawdowns there are also catchment zones to consider. There is no problem in Rockwood with drawdowns, but the draw down or zone of influence and the capture zone may be different. How does that all fit into this?

A. The model has been built using a regional perspective to focus on the sustainability of the municipal supply. It is not built for a specific location that is not focused on the municipal supply. That is not the purpose of the model. However, the model is calibrated at a very local scale by municipal wells (including Well 3) based on field data to ensure that it adequately replicates reality. We are confident that, from the wellfield perspective, it does match the data – it is a regional model that is also calibrated locally.

A. Regarding growth projections, there are well established provincial and municipal processes for growth projections and water supply projections. The projections used in the Tier 3 follow these processes. It allows the Township and City to forecast how much population growth is expected and where it should be located in terms of intensification. This is a municipal process that is also tied to the City's Water Supply Master Plan (WSMP) and is updated continuously. The City uses the same numbers in the Tier 3 model as is in the WSMP. There is, of course, some uncertainty with these projections, but the City uses the best available information.

C. This would depend on how many samples are taken. There is variation in how many boreholes are drilled and what calculations were used.

A. The model uses the best available data and is the best tool currently available to assess water quantity in the study area. It will be continually updated when new information becomes available.

Q. How do drawdowns influence your decision as to whether or not there is a high risk or threats? How does that get included in calculations?

A. The Tier 3 follows the technical rules of the Ministry of the Environment and Climate Change. Capture zones are used to measure water quality and drawdowns are used for water quantity. They are somewhat different concepts for different purposes – protection of water quality versus protection of water quantity. Capture zones are used for wellhead protection areas for quality and relate to time of travel to the municipal well and level of risk. While drawdown

cones are used for quantity as it relates more directly to the amount of water available. Drawdown measures how big of an area is needed to provide a certain amount of water to meet the water supply needs. There are different rationales and technical rules used in terms of water quantity and water quality protection areas. In the Tier 3 study, a 2 metre drawdown limit was used, based on professional judgement as seasonal variation is approximately 2 metres.

A. There is a technical project currently underway to re-evaluate the wellhead protection areas – quality for the Township. The results will be available soon. This is a good example of how learnings from the quantity model are being translated into updates to the quality model.

Q. Why is quality considered separate from quantity? If we have a contamination event, why is that not considered part of the stressors on quantity?

A. The MOECC separates the process because currently, modeling is not advanced enough to capture both quantity and quality measures at the same time at a regional extent. Concerns identified about water quality are, however, accounted for in the water quantity assessments (i.e. by running scenarios with certain municipal wells off line).

Q. There was an active chemical plant on the shore of the Eramosa River. The river provides a lot of Guelph's water. If there was a breach for example, would that not have an impact on water quantity?

A. In the WSMP, the City runs through different scenarios such as droughts and contamination events. The City typically holds back ten percent of its water capacity in the event that a main well is lost temporarily. This provides for some security of water supply. When the City receives development applications, the City only allocates up to ninety percent of existing capacity to account for the potential loss of a well. Typically, the loss of a well may extend over the course of a two or three-year period before it can be brought back on line. It is expensive, but the City has the ability to manage the loss of a well (e.g., through contamination).

Q. Are there no restrictions on the predicted growth of industrial activity? Can all industrial and residential growth be accommodated in the current system?

A. Industrial, commercial and institutional (ICI) growth is included in this process in that it is included in the water demand forecasts in the WSMP. As population increases, it is assumed there is a certain amount of ICI growth within it. For example, municipal growth forecasts to 2041 includes population and ICI growth which increases water demand. The overall increases in water demand are included in the study.

Q. With regard to the Xinyi Glass plant that may apply for a new Permit to Take Water, is there a point where we could say no to the application? This is 1.6 million to 2.4 million litres of water takings for that plant. Can you plug those values into the model to see the impact?

A. The City evaluates new, large water takers on the municipal system to assess the available capacity of the system and the benefit to the City. If an application is a large water taker with few employees, it may, under some circumstances, be declined.

In addition, provincial approvals are required for any development of this type within a wellhead protection area. The process for the Xinyi Glass plant has just begun. The facility has a permit in place for a pumping test to evaluate the yield and how it would be sustained under the Permit to Take Water process. The results of this study would be used to evaluate the PTTW and to support the planning application. There is a separate planning process for zoning amendments and site plan.

We understand the concerns around industrial takings. Moving forward, the model is now a tool to help the province and municipalities assess the impact from new or increased water taking requests from water users outside of the municipal water taking system. As a part of every Permit to Take Water (PTTW) application, proponents have to do a site characterization and hydraulic testing. That data is also used to update the model.

Q. The Guelph-Guelph/Eramosa WHPA-Q is a significant risk due only because the Queensdale well is “predicted to not be able to meet future needs under normal climate conditions and during prolonged drought”?

A. The Queensdale well is one well that triggers the significant risk level, followed by the Arkell 1 well which has a “high level of uncertainty”, which would also trigger a significant risk level.

Q. So, if the risk was not there for the Queensdale well, the Guelph-Guelph/Eramosa WHPA-Q wouldn’t be at a significant risk?

A. The way the rules work, you can have one well triggering a significant risk level, and the significant risk level applies in the whole WHPA-Q. The presence of the Arkell 1 well alone would be a sufficient trigger. Triggers require that all future applications for increased water takings must ensure sustainability of water supplies.

C. It’s obvious that a city the size of Guelph dependent on groundwater is at a high risk because groundwater is not one hundred percent rechargeable. Other cities have to pipe from Lake Erie, so it makes sense to protect local groundwater.

A. We need to understand that groundwater is part of the hydrologic water cycle. It does cycle through. We aren't mining any ancient water sources in this area. The water used in Guelph-Guelph/Eramosa is being replenished over time.

Q. How many of the City's wells are redundant?

A. The City currently has a maximum planning capacity of about 84,000 cubic metres per day (firm capacity of about 75,000 cubic metres per day) and uses about 45,000 – 48,000 cubic metres per day. There is a lot of reserve capacity currently, but that is to feed growth to 2041 and to be prepared for drought periods, contamination events and maintenance activities.

Q. Is Nestle's water taking included in the model? Or other companies estimated water takings? How did you determine what to include and what not to include?

A. The model includes the current usage of existing water users from the provincial Water Taking Reporting System (WTRS). It did not include any proposed water takings. Some water takers like Nestle provided more information, so in those spots more data was included in the model to ensure better calibration at those points.

Update on the Current State of the Policy Development Process

Following a presentation from Mr. Keller on the current state of the policy development process, CLG members asked the following questions:

C. The presentation noted influence on the Tier 3 Study from the Greenbelt Plan, which is confusing because the previous Tier 3 said there was no connection with Greenbelt Policies.

A. We mentioned the Greenbelt Plan in reference to the existing policies and programs that can impact water management. It doesn't mean it is necessary to or possible to address a specific Greenbelt Plan policy through this process. That is a separate process. But in the overall scheme of managing water there are impacts on recharge based on where building occurs, therefore there is a connection to the Greenbelt Plan.

C. This study should be connected into the Greenbelt Plan because the Greenbelt is the "Bluebelt"; it recharges our groundwater system.

A. This study looks at local water quantity, not the whole Greenbelt. However, recharge more generally is within scope. The Greenbelt policy review is now complete as part of the Coordinated Plan Review. The provincial government is currently reviewing all feedback received during consultation. In summer of 2018 the provincial government will continue to work with municipalities, conservation authorities, stakeholders, the public and Indigenous communities and organizations on the proposal to further grow the Greenbelt. There will be

additional opportunities for the public to provide input on this process in the future.

Q. Is the Guelph-Guelph/Eramosa water quantity policy discussion paper complete?

A. No. It is almost ready. The next project team meeting will work towards presenting the discussion paper and threats management strategy. On June 26 we will come back to present both documents to this group.

Q. I recognize that Cape Town, South Africa is in an incredibly different geological, geographical, economic, and population position than Guelph, but are there any recommendations to the rest of the world on what to do to ensure others don't run out of water?

A. Cape Town is not the most relevant example for Southern Ontario. For places like Vancouver; however, where they also have a reliance on precipitation-fed reservoirs, there may be lessons learned. This model will look at climate change scenarios and prolonged drought and will look at how that impacts the municipal supply.

Q. When was it that the City of Guelph was considering piping into Lake Erie to solve potential water quality challenges?

A. During the first WSMP (2006) a Great Lakes pipeline option was considered. It was a fifty-year water supply, which is when the City thought we may be at the limit of what could be sustained from groundwater. Ultimately, City council rejected it. The most recent WSMP (2014) is a twenty-five-year plan and there are enough water resources to meet demand so a pipe was not considered. A pipeline was a very expensive proposal. The City found that through conservation programs, the need to seek new sources outside the immediate area of the municipality was reduced.

Q. Since we are at a significant risk level, it seems like we're forgetting how much risk we anticipated in the first WSMP not so long ago. Was conservation part of that solution?

A. Yes, and the City has added two new wells since 2006. Conservation programs and a national recession that slowed growth and reduced ICI demands, meant that water demand went down. Even though we have more industry now, our demand per capita is lower.

C. If we were looking at a $700,000,000 pipe project twelve years ago, we need to step up our conservation and our thoughts around how much water is given through permits.

A. This is why the Tier 3 Study and the PTTW programs exist. We don't want to find ourselves stuck fifteen years from now.

C. We should plan for seven generations. That should be the baseline.

Q. Do you measure the age of water in these studies?

A. We have done some aging data. The water is from about two to twenty-five to fifty years old depending on the location. The City well system is a major pumping centre so we have major drawdown beneath the city which means waters of different ages are mixed.

Q. Centre Wellington's water was found to be between fifty to five hundred years old. Why is Guelph's younger? Is that not more of a concern related to climate change? How does the age of water factor in?

A. Nestle age-dated water in Centre Wellington and it was about twenty-five years old. It depends on where the recharge area is. When we get shorter travel times into aquifers we find younger water.

3 Closing

Follow-up

Participants were invited to direct any additional questions or comments to either Susan Hall (shall@lura.ca) or Martin Keller (mkeller@grandriver.ca) by May 30, 2018.

More information about the Guelph-Guelph/Eramosa Tier 3 Water Budget and Risk Assessment, including technical reports, presentations, executive summary, existing FAQ, a project outline for the policy development study, and a glossary, are available at www.sourcewater.ca/GGET-Tier3

Next Steps

The project team will circulate a draft copy of the workshop summary after May 30th. CLG members are to provide any feedback on the workshop summary with two weeks of receiving the draft. The next workshop will be held on **June 26, 2018**. During the next workshop, CLG members will receive the results of the technical study and discussion.