

MISSISSIPPI-RIDEAU SOURCE PROTECTION REGION
Box 599, 3889 Rideau Valley Drive
Manotick, Ontario, K4M 1A5
613-692-3571, 1-800-267-3504

MINUTES

**Mississippi-Rideau
Source Protection Committee**

September 3, 2009

#7/09

Present:

George Braithwaite	Scott Bryce
Carol Dillon	Richard Fraser
Paul Knowles	Drew Lampman
Patricia Larkin	Christine Leadman
Randy Malcolm	Peter McLaren
Beverly Millar	Eleanor Renaud
Janet Stavinga (Chair)	Mary Trudeau

Jean Guy Albert (Medical Officer of Health Liaison)
Ken Graham (Source Protection Authority Liaison)
Mary Wooding (Ministry of the Environment Liaison)

Regrets: Alex Cullen

Staff: Sommer Casgrain-Robertson Karyn Cornfield
Rosalind Kee Brian Stratton

SPA Members: Mark Burnham (Chair, Mississippi Valley Conservation)

Guests: Dru Heagle (Intera Engineering)
Jacqueline Oblak (consultant)

1.0 Welcome

Chair Stavinga welcomed everyone to the meeting and introduced Reeve Aubrey Churchill of the Municipality of Drummond / North Elmsley. Reeve Churchill welcomed everyone to their newly expanded municipal office and introduced Deputy Reeve Gord McConnell and Councillor Russell Foster. Chair Stavinga thanked Reeve Churchill for allowing the Committee to hold their meeting in the council chambers of the municipal office.

Committee members introduced themselves and indicated what sector or interest they represent. Chair Stavinga then introduced new member Drew Lampman. Mr. Lampman works for Omya Canada Ltd. and will represent the aggregate industry. Chair Stavinga then welcomed municipal staff in attendance: Michel Kearney (City of Ottawa), Sarah Cooke and Ted Joynt (Town of Smith Falls), and Bob Moore (Township of Drummond / North Elmsley). Chair Stavinga thanked Mr. Moore for all of his help setting up for the meeting.

a) Agenda Review

Chair Stavinga went over the purpose of the meeting and the agenda.

b) **Notice of Proxies**

None

c) **Adoption of the Agenda**

Motion 1-07/09

That the Agenda be adopted.

Carried

d) **Declarations of Interest**

None

e) **Approval of Minutes**

Motion 2-07/09

That the minutes of the Mississippi-Rideau Source Protection Committee meeting of July 9, 2009 be approved as amended.

Carried

f) **Status of Action Items**

Chair Stavinga reported that the Ministry of the Environment is making progress behind the scenes on advancing the idea of an Ottawa River watershed inter-jurisdictional committee. There is a conference call with MOE on September 4 to discuss progress and next steps.

Motion 3-07/09

That the Mississippi-Rideau Source Protection Committee receive the following report for information.

Carried

g) **Correspondence**

There were no questions.

2.0 Assessment Report Development

Sommer Casgrain-Robertson reported on the Richmond/Munster, Westport and Almonte public open houses that were held July 20, 21 and 22 respectively. Approximately 35 people attended in Richmond/Munster, 14 attended in Westport, and 40 attended in Almonte. Once again the turnout was high relative to last years open houses and open houses in other regions. Area residents and business owners provided a lot of valuable local knowledge at the open houses about land uses in their communities and what they are concerned about. There were also many questions. People were

interested in understanding the science (e.g. how the modeling was done, level of certainty in the results, data sources fed into the model). Many questions pertained to the overall process (e.g. status of the studies, what the scientific information means and how it will be used to shape land use policies, what this will mean for properties in wellhead protection areas). There were also some concerns about what impact source protection planning would have on agricultural areas.

Ms. Casgrain-Robertson informed Members that comments from the public will be accepted until October 9. The comments will then be summarized and presented to the MRSPC for their consideration when developing the draft Assessment Report.

Patricia Larkin commended Ms. Casgrain-Robertson on her handling of questions during the staff presentation at the Almonte open house.

Ms. Casgrain-Robertson indicated that the approved Significant Groundwater Recharge Areas (SGRA) and Highly Vulnerable Aquifers (HVA) draft study summaries have been updated, circulated to municipalities, and will be posted on the web site.

Brian Stratton introduced Karyn Cornfield, water resources engineer for the Mississippi-Rideau region, and Dru Heagle, hydrogeologist with Intera Engineering. Ms. Cornfield and Mr. Heagle presented the preliminary draft water budget results.

Regarding Table 1 (Annual water budget – watershed and regional scale) of the study summary, a Member asked why the surface water flow values shown for the Mississippi and Rideau watersheds did not add up to the value shown for the entire Mississippi-Rideau region in the third row. Ms. Cornfield explained that the value for the Mississippi-Rideau region is an area-weighted average of the values for the two watersheds. The surface water flow value represents annual depth of flow, not volume of flow. Mr. Heagle added that the surface water flow values are in mm/year not total surface water flow volume for an average year. Annual surface water flow (in mm/year) is calculated by taking the total volume of flow per year (in m³), dividing by the surface area of the watershed (in m²) and converting to millimeters.

A Member noted that even though some values in Table 1 are calculated and some are estimated, surface water flow and evapotranspiration add up to equal the precipitation values exactly. Ms. Cornfield explained that since evapotranspiration cannot be measured it is derived. The numbers shown for evapotranspiration in Table 1 were derived by subtracting surface water flow from precipitation which results in the values adding up neatly. Ms. Cornfield further explained that evapotranspiration was also calculated using a mathematical methodology called Thornthwaite & Mather. The derived and calculated values were found to be within 3% of one another which provides a high level of confidence in the evapotranspiration values.

A Member asked if evapotranspiration rates were higher in areas with more water. Mr. Heagle responded that evapotranspiration is very difficult to calculate but it assumes constant humidity in the air. Soil moisture and air

temperature are used to calculate it, both of which are closely correlated with solar radiation which is a big cause of evapotranspiration. Mr. Heagle noted that Environment Canada has a multi-million dollar study trying to measure evapotranspiration and their measurements are off by 15% so it is a very difficult value to calculate.

A Member asked how our groundwater recharge values, which range from 40 to 332 mm/yr, compare to neighboring watersheds. Mr. Heagle explained that 40 mm/yr is a normal average, but 332 mm/yr was a little higher than expected, but it is understandable because of the eskers, sand and gravel deposits and Nepean formation at surface. Mr. Stratton added that our water budget studies were peer reviewed by a joint committee who also peer reviewed Quinte and Cataraqui's water budget studies. This allowed the peer review committee to compare values and methods among the three neighbouring regions.

A member asked if the groundwater recharge value was factored into the conceptual water budget study. Ms. Cornfield confirmed that it was and directed members to section 5.2 of the conceptual water budget study for a discussion on groundwater recharge calculations. Ms. Cornfield also noted that the same methodology was used in the Tier 1 water budget to calculate groundwater recharge (section 3.1.3 of the Tier 1 study). Mr. Heagle added that in reality, surface water flow includes some groundwater that is discharging into lakes and rivers, not just surface runoff running into water bodies. However, to ensure groundwater recharge is not double counted, groundwater recharge values only look at water that infiltrates and stays in underground aquifers.

Mr. Heagle explained that the residual value of minus 105 mm/yr for the Ottawa (West) subwatershed (shown in Table 2 – Annual Water Budget for All Subwatersheds) was an anomaly due to the fact that there is no stream flow gauge in that subwatershed. A member asked what the significance of that value was and if the MOE should fund a stream flow gauge in that area. Mr. Heagle explained that it would be difficult because there is not a single river to measure, that the subwatershed contains a number of small tributaries that flow directly into the Ottawa River. There are similar situations along the St. Lawrence River and Great Lakes so the MOE will have to identify priority areas and what to do about future data. The member asked if this large residual value had anything to do with the flooding in Glencairn, Kanata. Mr. Heagle confirmed that it did not.

A member asked if the list of subwatersheds was complete in Table 2. Ms. Cornfield confirmed that it was.

A member asked why the evapotranspiration values in Table 1 of the study summary were lower than the ones shown in Table 2 for each individual subwatershed. Ms. Cornfield explained that the values in Table 1 were derived for the conceptual water budget by subtracting surface water flow from precipitation while the values in Table 2 were calculated for the Tier 1 water budget. For consistency, only the calculated values will be presented throughout the study summary unless otherwise noted.

A member noted that in the subwatersheds that drain directly into the Ottawa River, much of the flow would be storm sewers as opposed to overland flow. The member wanted to ensure this was included in the surface water flow calculation. Mr. Heagle responded that the surface water flow values do include storm water flow. Measurements were not available because there is no long-term flow data on those streams, so data from Toronto streams was used to calculate a flow value. The impervious level in downtown Ottawa is more similar to that in Toronto than in neighbouring source protection regions. Flow values were adjusted for precipitation differences between the two cities. More details on the methodology are in the study.

A member commented that there are a lot of old wells that are not documented in the MOE's well database. The member asked if this was accounted for in the water budget as the water demand calculation incorporates 570 litres per day (l/day) per private well. Mr. Heagle responded that it was not feasible to undertake 'ground truthing' to get a more accurate number of how many private wells are being used in the Mississippi-Rideau region. Instead, a level of conservatism was built into the water demand calculation by not applying a consumptive demand factor to private well water use. That means that of the 570 l/day estimated as the amount of water used for each private well, the water budget assumed that all of that water was lost from the watershed and none was returned. We know this is not the case as most household water is returned as wastewater, therefore, the water demand value for private wells is conservative, which should compensate for undocumented wells that are not included in the initial calculation. The same method was applied to agricultural takings. Mr. Heagle noted that private wells and agricultural takings are the lowest water uses in this region. The big water uses are municipal water and permit to take water uses.

A member asked if the Rideau River At Ottawa subwatershed, which was identified as having a moderate groundwater stress, was located in the densely populated residential section of Ottawa or was that area subject to future growth and possibly more water demand. Mr. Heagle confirmed that the subwatershed is located within Ottawa's urban boundary, which is serviced by municipal water from the City of Ottawa municipal systems (Britannia and Lemieux Island water purification plants). There may be a handful of private wells in the area but there is not a large household demand on local groundwater (private or municipal) in that subwatershed. A member suggested showing Ottawa's urban boundary on the map.

Mr. Heagle clarified that subwatersheds identified as moderate surface water or groundwater stress only move on to a Tier 2 water budget if there is a municipal drinking water system in the subwatershed drawing from that source of water. For example, the three subwatersheds identified as having moderate surface water stress do not move on to a Tier 2 water budget because none of them contain a surface water municipal drinking water system. Chair Stavinga recommended to members that this issue (subwatersheds identified with moderate stresses) be flagged in the Assessment Report chapter on outstanding concerns.

A member asked how close some of the low stress subwatersheds are to

being moderate stress and if economic growth had been included in the calculations as that could increase future water demand. The member also asked if any low stress areas would be bumped to moderate stress if a sensitivity analysis was undertaken. Mr. Heagle responded that municipal water use factored in 20 year population growth predictions. Industry growth was not factored in because it is difficult to predict what industries will exist in the future and what their water use would be. Mary Wooding (MOE) noted that water budgets use the maximum volume of water takings allowed by a Permit to Take Water while in reality many industries use a fraction of their permitted water use. Mr. Heagle went on to highlight that the water budget was a very conservative exercise as it underestimates the amount of water available (groundwater recharge values were slightly underestimated), and overestimates the amount of water being used (uses maximum permitted water taking values and does not apply consumptive water use factor to private wells or agricultural takings). Mr. Heagle then explained that the Technical Rules require a sensitivity analysis if an area is just below the cut off for a moderate stress. For example, if a subwatershed's surface water monthly percent water demand is between 18% and 19.9% (a subwatershed is low surface water stress if the value is <20%) a sensitivity analysis must be undertaken. No sensitivity analyses were required in the Mississippi-Rideau.

A member noted that there are private wells in the former township of Bathurst that run dry most summers. This area may have significant groundwater stress but it is probably too small an area to study and show on this type of map. Mr. Heagle responded that groundwater and surface water stress was assessed at the subwatershed level, which can sometimes mask local scale conditions. The MOE's permit to take water process does require applicants to contact local property owners to identify any localized water quantity concerns. This is intended to flag local scale water quantity concerns before additional industrial water taking permits are granted.

The member also noted that there are areas within the urban boundary of Ottawa that are on private wells, not municipal water. Mr. Heagle acknowledged that was true but stated there are not many of those areas in the subwatershed that was identified with a moderate groundwater stress.

A member asked if transport pathways would affect the stress level of a subwatershed if they were factored in. Mr. Stratton clarified that transport pathways are strictly related to the groundwater vulnerability portion of the assessment process.

Mary Wooding reminded members that Ministry staff who review permit to take water applications are anxious to start using water budget data in their reviews.

A member asked if permits to take water for dewatering a pit or quarry are really a concern since the water is simply pumped out and returned as surface runoff nearby. Mr. Heagle explained that the dewatering process is usually pumping out groundwater and returning it to surface water. The consumptive use factor is 70% meaning 70% of the original groundwater is sent into surface water bodies and 30% infiltrates back into groundwater.

A member suggested dewatering permits be taken with a grain of salt because Omya dewaterers mostly surface water runoff from their pit. Drew Lampman confirmed that Omya is dewatering primarily surface water, but suggested pits in Ottawa may be dewatering groundwater and Omya may do so as well in the future as their pit gets larger and deeper. Chair Stavinga noted that Tomlinson works with a local community group to voluntarily monitor groundwater levels in the area surrounding their pits and quarries in Goulbourn.

Brian Stratton introduced Jacqueline Oblak who presented the findings of the climate change review.

A member stated that we do not know a lot about local climate change so we will only be able to make general statements about it. Another member added that regardless of people's beliefs about climate change it is important to plan for the possibility since this year we broke previous climate records dating back to the 1970s.

A member stated that a link needed to be made between the water budget study and climate change review as there is a relationship between future water demands, climate change and future water supplies. Chair Stavinga noted that there is a statement about the climate change review in the water budget summary under "Water Budget Study Components".

Chair Stavinga drew the discussion to a close and summarized the committees' amendments to the study summaries:

- Be consistent and clear throughout the study summary in the presentation of evapotranspiration values (calculated and derived);
- Provide clarity regarding the unit of measurement for surface water flows;
- Identify the four subwatersheds with moderate water quantity stress in the 'other items of concern' chapter of the Assessment Report and indicate to the MOE that further study should be done in these areas as there may be water quantity issues for private water users; and
- Strengthen the link in the water budget summary to the climate change review. Explain that climate change will play an increasing role in future assessment reports while this first round focuses on compiling known local climate change information and if there is enough data to state whether assessment report conclusions could be affected by climate change.

A member commented that there is an urgent need to look at current engineering standards because of climate change. An example is the flooding in Glencairn in Kanata. Perhaps this could also be put in the 'other items of concern' chapter. Chair Stavinga informed members that the Federation of Canadian Municipalities has produced reports on climate change and mitigation which demonstrates that municipalities are very aware of the challenges before them. There is also a lot of work being done by Environment Canada. Chair Stavinga will forward members a web link to the

2007/2008 reports from the Federation of Canadian Municipalities and Environment Canada.

Motion 4-07/09

That the Mississippi-Rideau Source Protection Committee approve the following studies and their summaries for *Draft* for public consultation, as amended:

- Conceptual Water Budget;
- Tier1 Water Budget;
- Climate Change Review;

Carried

3.0 Community Outreach

Ms. Casgrain-Robertson reported that 26 municipal participants from 18 different municipalities attended the source protection plan municipal 'dry run' session on September 1. The attendance was terrific and it was a very productive day as the feedback from participants was valuable and insightful. Ms. Casgrain-Robertson reminded members that their 'dry run' session is on September 11, members were asked to confirm their attendance. Staff will use the feedback from these dry run sessions to develop draft comments to submit to the Environmental Bill of Rights registry on the discussion paper. These draft comments will be considered by the MRSPC at their October 1 meeting.

Chair Stavinga reported that the quarterly Chairs Meeting is on September 21 and 22. The meeting will include a briefing of the Minister by the Chairs.

Eleanor Renaud reported that the council of Tiny Township passed a motion putting a moratorium on the application for Site 41 (landfill).

Mr. Stratton informed members that two documents were included in their blue folders pertaining to proposed technical rule amendments. One document outlines the proposed changes to the technical rules and the second document is a summary of the changes. The intent of the summary is to highlight those proposed changes that are significant.

Mr. Stratton also reported that the intake protection zone technical briefing by the MOE and the study consultants for MRSPC members on August 25 was well attended. The purpose of the briefing was to provide members with an opportunity to learn more about, and discuss in detail, the areas of the studies they were uncomfortable with back in May. There was good discussion about how the vulnerability scoring was done. The next step will be to simplify the approach used to score vulnerability by looking at how other consultants did it across the province. Once the reports have been revised there will be another technical briefing for MRSPC members, followed by deliberations at a future MRSPC meeting. Chair Stavinga acknowledged the participation of all members at this briefing session and the insight and attention to detail provided by Mary Trudeau, particularly on the issue of vulnerability scoring.

Chair Stavinga noted that staff may work with a consultant to provide a

critique of the current Technical Rules. It is hoped that this feedback would help improve the second wave of assessment reports post 2012.

Motion 5-07/09

That the Mississippi-Rideau Source Protection Committee receive the following report for information.

Carried

4.0 Other Business

None.

5.0 Member Inquiries

None

6.0 Next Meeting

Date: October 1, 2009

Time: 1:00 pm

Location: RVCA – Monterey Boardroom

7.0 Adjournment

The meeting was adjourned at 10:05 pm.

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Janet Stavinga
Chair

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Rosalind Kee
Recording Secretary