



## Source Protection Committee

Wednesday, February 27, 2008

9:30 a.m. to 4:00 p.m.

South Huron Municipal Offices, Exeter

### MEMBERS PRESENT

Keith Black, Ian Brebner, Larry Brown, Karen Galbraith, Al Hamilton, Don Jones, Mike McElhone, Jim Nelemans, Matt Pearson, Bill Rowat, Gerry Rupke, Mert Schneider, Mike Strang, Rowena Wallace

### LIAISONS PRESENT

MOE Liaison Jennifer Arthur; Source Protection Authorities Liaison Jim Ginn; Walpole Island First Nation Liaison Kennon Johnson; Health Liaison Bob Worsell

### WITH REGRETS

SPC Members Gib Dow and Marilyn Miltenburg; Stony and Kettle Point First Nation Liaison Bob Bresette

### DWSP STAFF PRESENT

Sue Brocklebank, Cathie Brown, Tim Cumming

### OTHERS PRESENT

Brian Luinstra, Hydrogeologist, Luinstra Earth Sciences; Kevin McKague, Water Resources Engineer, OMAFRA; Alistair Fairweather, Auditor with the Treasury Board, Ministry of Finance and Internal Audit Division.

### CALL TO ORDER

Larry Brown, Chair of the Source Protection Committee, called the meeting to order at 9:37. Kennon Johnson, from Walpole Island First Nation, was welcomed as the newest SPC Liaison member.

### AGENDA

**MOTION #SPC: 2008-02-01**

Moved by Gerry Rupke  
Seconded by Al Hamilton

**That the agenda be approved as circulated.**

Carried by Consensus.

MINUTES FROM JANUARY 30, 2008

On the issue of recorded votes, Chair Brown proposed an amendment to change the wording to “objections on critical votes may be recorded.”

**MOTION #SPC: 2008-02-02**

Moved by Don Jones

Seconded by Ian Brebner

**That the minutes from January 30, 2008 be approved as amended.**

Carried by Consensus.

DECLARATION OF PECUNIARY INTEREST

None

TERMS OF REFERENCE UPDATE

This update was expanded upon from the previous meeting. Key points include:

- A notice of commencement was sent to all municipalities in January, as per Regulation.
- There is a municipal meeting to be held on Thursday, March 6<sup>th</sup>, 9:00 a.m. to 2:00 p.m. at the HCHU
- Some municipalities have sent in responses to questions posed in the notice of commencement. No municipality has indicated that they wish to elevate a drinking water system. North Perth indicated that the Molesworth drinking water system should be included in the Terms of Reference.
- The timeline has been moved forward to leave room for unanticipated delays.

WATERSHED CHARACTERIZATION

The evolution of the information in the Watershed Characterization (WC) can be defined into ‘What’, ‘So What’, and ‘Now What’. Currently, the WC represents the ‘What’ in what we know right now in our watershed and what might be out there that affects the water source. The objective was not to do any new research, but to pull together what was currently known and serve as a foundation for other reports. When it came time to submit the WC for review, work had to close on the document, and information ends in 2006. The WC was peer reviewed and was also submitted to Conservation Ontario for review in January 2007. Comments were returned by Conservation Ontario in December 2007 and S. Brocklebank will be modifying the WC based on these comments. The deadline to submit the document to the MOE is March 31, 2008.

The Assessment Report (AR) represents the ‘So What’. The AR will tie together the seven assessment modules, one of which is the WC, to determine how this information affects drinking water source protection. The Source Protection Plan (SPP) represents the ‘Now What’. Now that the information is known, what are the policies or programs that will be implemented?

### *Gaps in the Watershed Characterization*

One of the comments from Conservation Ontario is to highlight identified gaps at the end of each chapter, rather than in the Summary section.

### *SPC Comments*

1. Bill Rowat made a number of comments on the WC relating to population projections, population seasonality, water quality seasonality, agricultural distribution and trends, and Bluewater shoreline data. These comments will be posted on the web to share with all members of the SPC.
2. Al Hamilton indicated that the statement on the toxicity of salt in the Threats Chapter is incorrect. It is the Federal Cabinet that determines what substances go on Schedule 1 (list of toxic substances) in the Canadian Environmental Protection Act and this has not been done. Environment Canada issued their Final Assessment Report on road salts in 2001. After the report was issued, there was a comment period and the majority of the comments opposed the toxic listing. However, the Minister of Environment recommended to Cabinet that road salts be put on Schedule 1. Cabinet has not accepted the recommendation. In 2002, Environment Canada also formed a Working Group comprised of salt users (provinces and municipalities), salt producers, other government departments and two environmental groups. The Working Group provided input to Environment Canada on the development of a voluntary Code of Practice for the management of road salts, which was issued in 2004. Environment Canada has decided to wait to determine how the Code is working before making a decision on whether they think further action is necessary. The salt companies endorse the implementation of the Code. Also, many of the recommendations in the TAC Synthesis of Best Management Practices mirror the Sensible Salting program that has been promoted by the salt industry for the last 30 years. The SPC agreed to change the language around salt from 'toxic' to 'potential contaminant'.
3. p252 – The document indicates that the Bluewater shoreline is on municipal water. Lakeshore, however, the majority of Bayfield is not on municipal water. The South end of Bayfield is on municipal water, but that is only 200 houses.
4. Map 4-5, Transportation Threats, Issues and Concerns, has railways that are no longer in use on the map. This information was delivered by the MOE and historic rail corridors are important to know because they might be a historic spill site.
5. The Watershed Characterization has a lack of analysis in document because all of pieces (modules) are needed to do this. Analysis will occur in the Assessment Report.

***Action Item #1:*** *SPC members to respond to comments made by Bill Rowat and any other comments that arise during the next two weeks. Bill Rowat's comments will be posted on the web in the SPC area.*

### *Water Quality Comments from Brian Luinstra*

There are not a lot of data points and there is not a long amount of time over which the data points were collected, so it is hard to make a conclusive analysis on water quality in the area. Overall, contamination is low and the main problem is with wells, and not so much with aquifers. Fluoride and iron are two elements that naturally occur in the area.

At this time, the project is still waiting for guidance with respect to village wellfields. There is also no supporting information for Highly Vulnerable Aquifers and Significant Groundwater Recharge Areas.

Not a long is known about how managed developed has impacted the aquifer. The water that is being extracted from the bedrock aquifer predates water that was recharged during settlement times because there is a potential residence time up to 500 years. Drinking Water Source Protection is the protection of water for use by generations in the future.

#### CURRICULUM MODULES NINE AND TEN

The Water Budget in Concept

The Water Budget in the Region

Water is constant in the world, but local inequities with climate change or population lead to differences in water availability. Being in the Great Lakes Basin, we have an abundant source of freshwater. However, there are even pockets within our region where water is not as abundant, like the local concern in Lambton Shores where private wells run dry and water has to be trucked in. The rock strata off of Kettle Point also have very little abundance and bad water quality. Two examples of what might affect flow and availability of water in our region are climate change and increased usage.

#### WATER BUDGET PRESENTATION

##### *Groundwater Budget (Brian Luinstra)*

The Water Budget is a decision making tool that accounts for water as it moves through the system; it does included uses outside of source protection planning. In our region, water from aquifers end up in Lake Huron and groundwater levels seem to mirror lake levels. Aquifer storage is not to be considered in the water budget; there is not enough data provincially to quantify how much aquifers are storing.

The process to follow creating a conceptual water budget was given in guidance from the MOE. It gathers the information we have today on water quantity and is a groundwater derived way of thinking. The CWB has been vetted through a Peer Review Committee.

After the Conceptual Water Budget, there is the numerical water budget stage. Tier 1 is a coarse regional scale, and our region's Tier 1 water budget is in the process of being completed. Every Source Protection Region must do a Tier 1, and it depends on each region's finding on whether they go on to a Tier 2 (sub-watershed) or Tier 3 (local scale). Orangeville is the only area that is looking at doing a Tier 3 water budget.

Eventually, the Conceptual Water Budget had to separate the groundwater system from surface water system because they work on different time scales. When considering groundwater, recharge occurs over months and decades. When it comes to surface water, changes can occur hourly. Groundwater was modelled daily and surface water was modelled hourly, and this was done according to guidance.

*Surface Water Budget (Kevin McKague)*

Kevin McKague, Water Resources Engineer for the project, presented the surface water elements of the water budget study. He explained the methodologies for putting numbers to the various elements of the water inputs, storage and outputs. A simplified water budget equation was presented. He outlined the sources of data, such as rain and stream gauges; the complexities of calculating time factors and where estimations for data need to be made.

Six major water systems were studied: Lucknow (9 Mile), Maitland, Bayfield, Ausable, Parkhill and Shoreline Gullies. Maps showing amounts and location of precipitation, and relative streamflows were presented and referenced in the Conceptual Water Budget document.

Both hydrologic models GAWER and SWAT (Soil and Water Assessment Tool) were tested in detail with SWAT being chosen as the preferred model to use with both subjective and objective criteria considered. SWAT uses a GIS-based interface to delineate subwatersheds and determine the direction of overland flow, channel length and slope. Soil and landcover/landuse were inputted into the model. Although landcover mapping was from 1983, some testing was done to confirm that there has not been any significant land use change since the 1980s. A baseflow study was undertaken in the summer of 2007 to compare the output from the SWAT model.

A summary of all the sub-basins modelled is on Map E-10.

*Geology of Area (Brian Luinstra)*

The Michigan Basin is one regional structure that controlled the deposition of carbonate rocks, which are related to limestone, and helped to develop the aquifers in our region. The rocks in our area all slope to the middle of Michigan, at the centre of the basin. These rocks were deposited during a period when the area was covered by a warm sea.

Looking vertically, the area of freshwater is very shallow. As you move to depth the water gets more and more saline and the water does not move. Deep, formational water is thousands of times more salty than sea water.

In southwestern Ontario, the height of land is located at the Dundalk dome (highlands) and water to the west of this highland flows to Lake Huron. In our region, bedrock aquifers contain water that runs east to west toward Lake Huron. The overburden aquifers contain high clay content and are vulnerable to seasonal and climactic variations. Flow tends to follow topography and there are many individual wells in these formations.

For water use, specific numbers were not put together because these numbers can be misleading. Water takers need a Permit-to-take-Water (PTTW) only if they take more than 50,000 L/day and don't necessarily use up to their Permit Limit. In addition, there are probably a lot of small water takers that are not known about. There are approximately 100 PTTW users in the region, which is low, and most are non-consumptive. Livestock is the biggest water user in our area. Other areas of the province have 10 PTTW in a square kilometre. The number of PTTW users does not count those that take water from Lake

Huron. The Lake is an international water body and the Minister himself will deal with that. Ultimately, the region is not going to hit a stress threshold, there is not enough water taking here for that to occur.

Currently, the groundwater and surface water models are complete and are being incorporated into the Tier 1 Water Budget Assessment. The Tier 1 is in the report production stage.

*Tier 1 Teaser (Brian Luinstra)*

The Tier 1 Water Budget is to look at water quantity stress at a watershed level. The modelling used a 3-D FeFlow model for six southwestern Conservation Authorities.

From the groundwater model, it was determined that 26% of water from Maitland Valley is given to the Upper Thames and Ausable Bayfield, and Ausable Bayfield also gains some water from Upper Thames. Approximately 2% of water in the region goes to Lake Huron.

The consumptive usage estimate represents somewhere between 0 and 4 mm of annual precipitation. Most of the water taking is considered to go back into system and municipal water supplies are likely considered a low stress. At current pumping rates, the region is only using 0.25% of the water that is being recharged in the region. A Tier 2 Water Budget is not recommended.

The US is not happy that Canada is allowing water systems to move water from basin to basin, for example, the Lake Huron water that is used by London and is discharged to Lake Erie. One proposal looks to twin the pipeline of treated London water back up Lake Huron.

**MOTION # SPC: 2008-02-03**

Moved by Ian Brebner  
Seconded by Gerry Rupke

**That the Conceptual Water Budget be adopted, subject to future amendment and review.**

Carried by Consensus.

**MOTION # SPC: 2008-02-04**

Moved by Karen Galbraith  
Seconded by Don Jones

**That the Ausable Bayfield Maitland Valley Source Protection Committee request the Minister of the Environment to undertake work to update the Agricultural Systems Mapping information from 1983 including land use, soils, tile drainage and land cover data sets, and further, that this information be made available to Ontario's Source Protection Committees in order that they may complete their Source Protection Plans with the highest level of accuracy and reliability.**

Carried by Majority.

### DELEGATION

Alistair Fairweather, Auditor with the Treasury Board, Ministry of Finance and Internal Audit Division, has been working out the ABCA to review how MOE and MNR have been implementing Drinking Water Source Protection. In particular, he also looked at the contracts involving the three technical studies grants in the region: Seaforth, Goderich and the municipal wellheads. The process has come together quite fast and he was on hand to see how the relationships between lead Conservation Authorities and Conservation Ontario are implemented, and if the Clean Water Act is being implemented as envisioned. The project is continuing after the March 31, 2008, fiscal year end.

Although not a specialist in technical matters, his responsibility is to comment on the legislation around governance. He recognizes that there is some frustration because of various external pressures and that the program was implemented quickly without a lot of preparation. Fairweather asked the committee if there were any comments that the members wished to share about governance or the program. In the next round of implementation, the process will hopefully be improved.

### WORKING GROUPS REPORT

Six of the seven working groups met during the month of February. The Kingsbridge working group's meeting was postponed due to inclement weather, and will be meeting on Monday March 3, 2008. These working groups will be able to offer input on the ToR, AR and SPPs and make informed comments on the draft documents. The groups will initially start behind the SPC in learning about the Watershed Description and Water Quality etc., but will end up ahead of the SPC in terms of the Curriculum. The groups will run from February 2008 to June 2009 with some months off for the summer and Christmas. After June 2009, the SPC may wish to call together the participants in an *ad hoc* form to grapple with issues of evaluation and implementation.

The seven topics brought forward by the working groups were discussed. It was suggested that a running list be kept of topics. An appendix will be included to each monthly report that lists all of the comments or concerns from previous meetings. At some stage, there should be a specific response, which can be either delivered on the SPC's behalf or the Chair could post a response on the website. SPC members also vocalized that they were not averse to being approached individually by the public about concerns.

### LIAISON UPDATES AND OTHER BUSINESS

**MOE** – New building code regulation has been posted on the MMAH website. There is a 30 day review period in which comments may be submitted.

**Health** – No comments at this time.

**Walpole Island First Nation** – Liaison Johnson appreciates the warm welcome to the committee.

*Future Meeting Schedule*

- May 28, 2008
- June 25, 2008
- July 30, 2008 – depending on schedule of ToR. The ToR is due by August 20, 2008, and the SPC is regulated to meet at least once a month until the ToR is complete.

*Communications Products*

- There will be a Public Service Announcement on Drinking Water Source Protection running on the A channel. Some local shots were used for this PSA.
- A tabloid newspaper will be delivered to all of the homes in the region. The tabloid will feature the SPC, the new Working Groups and Municipal Subcommittee, and will have information on upcoming events and the Source Protection Stewardship Project.

*Per Diem and Mileage Information*

- A Per Diem that is paid for work on the SPC is a separate item from municipal work and should not need to be publically disclosed.
- Mileage was included in the 2007 T4 Slip – S. Brocklebank to inquire with the Financial Services Coordinator to determine if this was appropriate.

AGENDA ITEMS FOR NEXT MEETING

- Finalizing the Watershed Characterization
- Draft Tier 1 may or may not be presented in March, may delay until April
- Update on the ToR and result of the March 6<sup>th</sup> Municipal Meeting
- If advice needed from sector, members should do that in next couple of weeks
- Possible presentations on the IPZ and WHPA

ADJOURNMENT

Chair Brown adjourned the meeting at 3:38 p.m. and declared the meeting to be a value of 1.5 days due to the amount of preparation needed.

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Larry Brown  
Chair

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Sue Brocklebank  
Recording Secretary