



**MINUTES OF THE REGULAR MEETING OF THE  
DRINKING WATER AND WATERSHED PROTECTION  
TECHNICAL ADVISORY COMMITTEE  
HELD ON THURSDAY, DECEMBER 13, 2012 AT 12:30 PM**

**Present:**

Mike Donnelly, CHAIR .....	Manager, Water Services, RDN
Chloe Fox .....	Islands Trust Representative
Mike Jessen .....	General Public Representative (North)
Gilles Wendling .....	General Public Representative (South)
Lynne Magee .....	Vancouver Island Health Authority
Pat Lapcevic .....	Ministry of Forests, Lands and Natural Resource Operations
Faye Smith .....	Environment Community Representative
Ken Epps .....	Forest Industry Representative
Oliver Brandes .....	Academic Community Representative
Alan Gilchrist .....	Academic Community Representative (VIU)
Maury Scott .....	Special Projects Assistant, RDN
Mike Squire .....	City of Parksville / Program Manager, Arrowsmith Water Service
Bill Sims .....	Manager, Water Resources, City of Nanaimo
Jacek Scibek .....	SRK Consulting
Fred Spears .....	Director of Public Works, District of Lantzville
Domenico Iannidinardo .....	Forest Industry Representative

**Also In Attendance:**

Christina Metherall .....	Drinking Water and Watershed Protection Coordinator, RDN
Julie Pisani .....	Special Projects Assistant, RDN
Matt Skinner .....	Waterline Resources
Darren David .....	Hydrogeologist, Waterline Resources
Paul Thompson .....	Manager, Long Range Planning, RDN
Ting Pan .....	Sustainability Coordinator, RDN
Shelly Norum .....	Wastewater Program Coordinator, RDN
Craig Sutherland .....	Kerr Wood Leidal
Paul Chapman .....	Nanaimo and Area Land Trust
Morgan Kenneh .....	Island Timberlands Representative
Sean De Pol .....	Manager, Wastewater Services, RDN

**Regrets:**

Bob Wylie .....	Ministry of Transportation and Infrastructure
Shelley Bayne .....	Hydrogeology Representative
Al Magnan .....	Fisheries and Oceans Canada Representative
Rosie Barlak .....	Registered Professional Biologist Representative
Leon Cake .....	Water Purveyors' Representative

## **CALL TO ORDER**

M. Donnelly called the meeting to order at 12:35 pm.

## **DELEGATIONS**

## **MINUTES**

MOVED G. Wendling, SECONDED B. Sims second that the minutes from the regular meeting of the Drinking Water and Watershed Protection Advisory Committee held July 25, 2012 be adopted. CARRIED

## **BUSINESS ARISING FROM MINUTES**

## **COMMUNICATIONS/CORRESPONDENCE**

## **UNFINISHED BUSINESS**

## **REPORTS**

### **Gabriola, Mudge, Decourcey Water Budget Project Results (J. Scibek)**

J. Scibek gave a PowerPoint presentation on the results of the [Gabriola, Mudge, and Decourcey Island Water Budget Project](#). This presentation covered: a review of the available information, an overview of the analysis process, and a discussion of the results of the analysis. J. Scibek noted that the report is still in draft stage and has to go through the final review process. J. Scibek also noted that the report was written with the goal of avoiding overly technical information in the body of the report to make it accessible to any interested parties. The technical information has instead been included in the appendices section of the report.

J. Scibek commented on the problematic nature of trying to use the well log records as a source of data. It was problematic because not all well logs contain the same quality of information. J. Scibek noted that the well logs for Gabriola Island were generally of low quality and contained limited information. This resulted in only being able to look at the well logs very generally, not being able to draw accurate cross-sections, and being limited to mostly surficial geologic information.

J. Scibek also noted that groundwater discharge was not specifically calculated. Discharge can be inferred from the remainder of the total available water after the recharge and demand values have been calculated. This was done because there are few small surface water features and no measurement gauges. It was also done because they were unable to measure the amount of groundwater that is discharged to the sea below the surface.

J. Scibek commented that the residential water use questionnaire provided a great deal of useful information. While the surveys provide good information the results may be biased to the consumers on the lower end of the scale, because typically those who participate in voluntary surveys are those who are actively involved in more conservative water use practices.

J. Scibek discussed the general findings of the Water Budget Project. Overall Gabriola Island has high aquifer demand around the coastal sections and low demand in the middle areas of the island. This reflects the settlement pattern. The water budget for each of the identified water regions on Gabriola Island were calculated and showed that there were areas on the island which become stressed in the dry summer months; however, the recharge rates in the remainder of the year was sufficient to replenish the supply. In regards to the water table; variations in height were minor and ranged from 2-4 meters, following a very seasonal and repetitive pattern.

G. Wendling commented on the recommendations outlined by J. Scibek. He noted that there was no recommendation for monitoring water quality and salinity close to shore and believes this could be done easily and cheaply. J. Scibek responded that water quality was outside the scope of this project; however, he did note that he had recommended that awareness of salt water intrusion be increased. J. Scibek also commented that a deep well, drilled close to the shore could confirm assumptions about the thickness of the freshwater lens and would be a very important element to add to the analysis. At this time there is only data relating to the presence of salt water intrusion in wells.

J. Scibek noted that it was difficult to get information on well screens in the well logs for Gabriola. P. Lapcevic commented that the lack of screen information is due mostly to the fact that screens are not installed by the well drillers in the bedrock wells on the island. The wells are usually drilled until they get enough water, therefore, the last 5 to 10 feet of the well is in the bedrock where the water is coming from.

P. Lapcevic asked, in regards to the Gabriola residential water use questionnaire, if there was a comparison of water source usage in the various areas. This was referring to the percentage of usage between groundwater, rainwater, and water deliveries. C. Metherall replied that the survey did look at the percentages which the various water sources were utilized; however, the results are analyzed at the sub-watershed level and do not examine the coast areas separately. P. Lapcevic responded that those properties around the shore may be the first ones to move to sources other than ground water.

C. Metherall asked if there were areas where water deficits were calculated. J. Scibek responded that there were only a few areas where a deficit was calculated; however, this was only seen during the driest months and the aquifers recovered during the following wet periods.

M. Jessen commented that the number of observation wells on Gabriola Island was impressive, especially since the number is equal to that of the entire Englishman River area. He asked if the water quality information is collected from the observation wells. J. Scibek answered that he wasn't sure if this was still happening at the observation wells but there is a lot of water quality information from other sources available (primarily residential wells). J. Scibek also noted that not all the observation

wells were active at the same time. P. Lapcevic commented that there are currently four active observation wells on Gabriola Island and that observation well 194 (in the “Village” area of Gabriola) is no longer functioning. M. Donnelly noted that there is currently an expansion of observation wells occurring in the Region.

P. Lapcevic commented on the naming convention used for North Degnen Bay and how residents of Gabriola don’t normally refer to the area by this name. She suggested this area’s name should be changed to reflect local naming conventions.

A. Gilchrist commented on the stress analysis results and noted that the varying sizes of sub-watersheds affected the results. Sub-watershed areas with larger areas experience more recharge. A key factor in a stress assessment is the ratio of demand to collecting area.

C. Fox asked if there were any scenarios run to examine climate change predictions. J. Scibek replied that there had not been any scenarios run to examine specific climate change predictions, but, this could be modeled though reducing the amount of water available for recharge, and recalculating the stress level.

M. Donnelly stated that members of the DWWPTAC will review the draft report and submit their comments at the end of January 2013. The results of this study will initiate further discussion from the Islands’ residents. It was also noted that the results will provide information on focus areas to collect more data.

#### **Vancouver Island Water Budget Project Results (D. David, C. Sutherland)**

D. David presented an overview of available information, described the analysis process and presented the results of the [Water Budget Project](#). D. David noted that the analysis was performed to a watershed level, not to a sub-watershed level. It was also noted that the stress was analyzed according to the allocated demand not the actual demand.

M. Jessen commented that there was no representative from EPCOR at this meeting and that they have drilled multiple new wells this year. He wanted to know if we are able to take advantage of their related information. M. Donnelly noted that while we haven’t received all of the data they have provided information in the past and that the RDN will be receiving additional information from them. C. Metherrall noted that during the data collection phase of the project there was a transition in staffing at EPCOR and that made data collection more difficult.

C. Metherrall had a question regarding why the Englishman River Water Region was not identified as stressed and as an area to focus on when the analysis shows that there are stresses on that watershed.

D. David replied that the Englishman River Water Region has been identified as a stressed region. The altering of the classification was due to updating of the formulas used for the calculations, and the slide needs to be altered to reflect the changes.

M. Squire asked if the mean average discharge of the natural rivers is known, and if base flow is calculated using 10% of flow volume. C. Sutherland replied that there was some work done on naturalizing river flows. The values reported are mostly from the model. The appropriate base flow value for the streams and rivers in B.C. is considered to be 10% of the mean annual discharge, this value is derived from the Tennant method (1976) [also known as the Montana method]. This percentage is based on habitat suitability rather than actual natural flow regime. It was found that a lot of the time the flow is higher than what the natural flow would have been. M. Donnelly noted that records for the Englishman River go back to the beginning of the century and before the Arrowsmith dam the low flows were well below the 10% of average flow. Now with the dam the flow has been brought up much higher. C. Sutherland commented that there has been an increase in the base flow, at least at locations above where intakes are located.

C. Metherall commented that there were stress levels assigned for both surface water and groundwater; asked if there are plans to combine them. C. Sutherland noted that the interaction between them has been looked at at a higher level. D. David commented that the surface and groundwater elements are de-coupled; however, where there is an obvious interaction they have been factored in to the water budget. With the Geological Survey of Canada (GSC) study there is potential to combine them into one. The GSC study can assist with the conceptual model and identifying where the linkages are. The study can look to confirm these linkages further.

G. Wendling asked when the Google Earth layers may be available to the Committee and to the public. M. Donnelly replied that the data layers should be available in the spring. Staff will need to determine how to package the data and make it available to the public. There may be the potential to have two data sets available: a layman and a technical set. There are also some issues of privacy which need to be explored further at this point. He stated that the water budget has provided more information than initially contemplated and there is a need to look at how to put that information forward.

M. Donnelly noted we will need committee members help in providing feedback on both reports by the end of January 2013.

#### **Volunteer Groundwater Monitoring (C. Metherall)**

C. Metherall outlined a program has been initiated that is looking to monitor water levels in volunteer wells. Thanks to the work on the water budget we have a good idea of those areas in the Region that represent significant data gaps. D. David, and the Vancouver Island Water Budget team, provided maps showing approximately 40 locations where there was a lack of data. Mail outs were prepared, and sent, for 16 of the areas that were identified as high priority. One area that did not receive mail outs, but has already shown interest to participate in these types of programs, is the Yellowpoint area. C. Metherall noted that the aim is to have the data loggers installed by March.

**Geological Survey of Canada (GSC) – Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO) – Regional District of Nanaimo (RDN) Observation Well Expansion (C. Metherall, P. Lapcevic)**

P. Lapcevic provided an overview of the sonic drilling portion of the observation well program. MudBay Drilling has been contracted to perform the installation of 3 wells identified by the GSC, RDN and MFLNRO. At the time of the meeting one well has been completed in the Parksville area; this well is a 2.5inch observation well that will go into the provincial observation well network. The second well was drilled in the Spider Lake area; this well was drilled to a depth of 325 feet when a problem with the drill bit caused the drilling to end at this depth. A multi-level observation well will be installed at this location. The third well is in the Cochrane Road area on the west side of the Island Highway; this well was due to have drilling begin within a few days. It was also noted that a homeowner in the Yellowpoint area approached the MFLNRO/RDN regarding an unused well; this well will now be used as a provincial observation well.

M. Donnelly noted that the observation well expansion program has been funded utilizing the Towns for Tomorrow grant the RDN received in 2009. There have also been significant contributions from the both, in monetary and expertise resources. The GSC began work in the area at the same time as the RDN was investigating the expansion of the observation well network. This partnership has been very successful and has resulted in the establishment of some very important observation wells.

**OTHER**

**Recognition to Christina Metherall**

M. Donnelly recognized Ms. Metherall's hard work and dedication in filling the role as the first Drinking Water and Watershed Protection Coordinator at the Regional District of Nanaimo and on behalf of the committee wished her well in her future endeavors.

**ADJOURNMENT**

The meeting was adjourned at 3:30 pm.

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M. Donnelly, Chair