BURNS BOG ECOLOGICAL CONSERVANCY AREA
SCIENTIFIC ADVISORY PANEL MEETING
Tuesday, May 19 2009 from 4:30 – 7:30 PM
Park Centre – Pacific Spirit Regional Park
4915 West 16th Avenue, Vancouver BC

Draft Meeting Notes

ATTENDEES:
Chair, Greg Paris, Metro Vancouver Regional Parks
Dr. John Jeglum, Scientific Advisory Panel
Allan Dakin, Scientific Advisory Panel
Markus Merkens, Metro Vancouver Regional Parks
Wendy Warn, Metro Vancouver Regional Park
Heather Sinclair, Metro Vancouver Regional Parks
Sarah Howie, Corporation of Delta
Loger Aure, Metro Vancouver Regional Parks
Dr. Paul Whitfield, Scientific Advisory Panel

GUESTS:
Gabor Vasarhelyi, CH2M Hill (Gateway Project)
Richard Sims, EBA (Gateway Project)
Scott Postma, Gateway Program
Mauricio Herrera, CH2M Hill (Gateway Project)

REGRETS:
Jennifer McGuire, BC Ministry of Environment
Mitch Sokalski, Metro Vancouver Regional Parks
Angela Danyluk, Corporation of Delta
Dr. Hamish Kimmins, Scientific Advisory Panel
Mike Brotherston, Corporation of Delta
Barry Smith, Environment Canada
Dr. Geoff Scudder, Scientific Advisory Panel
Dr. Richard Hebda, Scientific Advisory Panel

1.0 INTRODUCTIONS

2.0 REVIEW AGENDA & MARCH 17 2009 MEETING NOTES

3.0 ACTION ITEMS FROM LAST MEETING

3.1 **October 2008 – January 2009 Hydrology Data**
- 3.1.1 Please see Attachment I.
- 3.1.2 The BBECA response to snowfall appeared similar to that of rainfall, with a rise in water level
- 3.1.3 The snow data was taken from the YVR monitoring station as the BBECA station does not record snowfall amounts

3.2 **LiDAR**
- 3.2.1 See Item 4.0

3.3 **Research Strategy Document**
- 3.3.1 See Item 6.0

4.0 BURNS BOG WATER BALANCE MODEL

4.1 Presentation by Mauricio Herrera and Gabor Vasarhelyi of CH2 Hill

4.1.1 See Attachment 2

4.1.2 The Water Balance Model must be developed to interface with the corporation of Delta's Watershed Model for the area in order to determine the controls needed

4.1.3 The LiDAR data shown includes topography and some vegetation information is available but not to the level with hyperspectral; underwater geography is not captured in this data

4.1.4 Underwater topography will be mapped using cross-sections, with distance between cross-sections dependent upon the degree of change in a given area

4.1.5 Discussion regarding the importance of vegetation data to the interception, the availability of the vegetation data, and the possibility of layering the LiDAR data and the hyperspectral analysis for greater specificity

4.1.6 Gateway emphasizes that their analysis of the data is directed at determining the outflow and the necessary control structures; their analysis is by no means exhaustive and further development of the model would be beneficial to long-term restoration of the Bog

4.1.7 The data shows that following a water event of unknown origin in January, the groundwater monitoring station located approximately 80 metres south of the East-West Ditch (which previously had demonstrated a relatively stable water level) began to show tidal fluctuations similar to those registered at the piezometer located adjacent to the East-West ditch

4.1.8 Gateway speculates that this change may be attributable to the failure of a large beaver dam, which would affect the head in the ditch

4.1.9 SAP members feel that this result more likely stems from movement in north-south ditches in the area impacting the groundwater monitoring station given that a tidal response without a time lag is not feasible at such a distance

4.1.10 The Bog Basins defined in the Gateway presentation are considered very dynamic and may change in response to a variety of factors, such as beaver dams

4.1.11 This changeability in water flow could potentially be harnessed by Delta/Metro Vancouver to aid in the long-term restoration of the Bog by introducing structures to encourage flow to the North, where the new SFPR structures will serve as a dam and minimize water loss from the Bog

4.1.12 It will be necessary to interface the Water Balance Model being created by Gateway with the Watershed Model developed by Corporation of Delta

4.1.13 This will help understand how different processes affect the water levels in the ditches as not all can be captured through the Water Balance Model

4.1.14 The Watershed Model can be used to compare pre- and post-SFPR water flow

4.1.15 It will be necessary to use both models, as well as trial and error, to create balance and to get concurrence between the two models
4.1.16 Overflow from Cougar Creek during extreme water events will be diverted and will no longer lead to mineralized water flowing into the Bog west of Highway 99
4.1.17 The building of the SFPR will essentially create an East-West berm with one-way culverts that flow north only and will likely mitigate the problem of mineralized water flowing south into the perimeter ditch
4.1.18 The current control structure at the 96th avenue outfall is comprised of a flood box and pump house
4.1.19 The new structure will create a more efficient drainage system which will allow the water to move more quickly to the outfall and therefore allow more storage at high tide
4.1.20 The new structure will also allow water to be held more effectively in the Bog and create the ability to release bog water without the risk of flooding downstream
4.1.21 The Alexandra outfall will remain gravity-fed
4.1.22 The 80th Avenue irrigation intake will be converted from the current screw gate to a new pump station and will be connected to culvert and ditch structures independent of Bog hydrology west of the 80th street alignment
4.1.23 This new pump house will allow reversible pumping; for example, can pump water in during summer and out during winter
4.1.24 This will also help to reduce the possibility of Fraser River water mixing with Bog water and minimize flood risk
4.1.25 The only SFPR water that will flow south into the bog is the precipitation that falls on the south slope of the berm; road surface water will be directed northward
4.1.26 Controlled culverts must be in place before any changes are made that could result in water flowing back into the Bog
4.1.27 The system also needs to be robust when there is little or no water

5.0 ADJOURN

5.1 Meeting adjourned due to time constraints
5.1.1 Remainder of agenda items to be carried forward to next meeting
5.1.2 Next Meeting: July 21, 2009