

"Kapiere und Kopiere" ("First understand Nature, then copy it."). Nature is our foremost teacher; the task of technology is not to correct Nature, but to imitate it."

..... Viktor Schauberger (1885-1958)(Alexandersson 1990)

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Ref.: WAB0001 (6 pg. & Encls.)
To: Chairman Dr. Wayne Stobo and Members
Halifax County/Mainland Watershed Advisory Board (WAB), HRM
From: S. M. Mandaville (Professional Lake Manage.), Chairman and Volunteer
Exec. Director
Date: February 11, 2000
Subject: Synopsis-3: Unit Loadings (Nonpoint and Point sources), and
Bacteriological Contamination + some extracts from the Stormceptor
handbooks

(1) I am herewith taking the liberty of enclosing three (3) copies of a portion of Synopsis-3 which you may find informative. The complete document is downloadable from our web space (URL above).

While most of it is to do with 'typical nutrient' export values, you will also find there tables summarizing other typical urban pollutants and their associations with size fractions of soil/sediment (Table 3-13, pg. 3-11); settling theory (Table 3-14, pg. 3-11); a scientific methodology for calculating buffer widths based on soil-K erodability index, the RCN- Runoff Curve Number (Standard Buffer definition on pg. 3-30). It also contains a widely followed methodology of establishing the source of bacteriological pollution (Tables 3-37 & 3-38, pg. 3-31).

(2) We do realize buffers alone will not protect our lakes, and we need some sophisticated systems, for e.g., a combination of a pre-treatment device and (not either/or) a specially constructed (not natural) wetland. The constructed wetland has to be of a sufficient size and planted with vegetation capable of removing various 'typical' post development urban pollutants.

During the January 2000 meeting if you recall, I had submitted copies/extracts from 2 relevant publications, the first was the whole publication titled, "The Use of Wetlands for Controlling Stormwater Pollution" funded by the USEPA (United States Environmental Protection Agency), and the second was an extract on Constructed Wetlands for Remediation of Urban Waste Waters by a well known firm specializing in same, Boojum Technologies Ltd.

(3) Some of us are aware of the patented device, the **Stormceptor**. We have been reviewing the various independent published papers on same as well as the Manuals,

including the 'Technical Manual' and the 'Study Manual' issued to us by **Stormceptor** Canada.

I am quite impressed with the honesty in the material supplied by the **Stormceptor** Corporation and in the honesty displayed by them in our Email correspondences.

I am herewith including two (2) sets of copies of some relevant pages from the 'Technical Manual' of the **Stormceptor**, as well as two (2) copies of the Email I just received from Mr. Todd Neff MASC., PEng., Director of Engineering, **Stormceptor** Canada Inc.

Mr. Neff made quite a focused reply in response to our questions and the enclosed copy is quite informative. He is quite emphatic about the proper use of the **Stormceptor** generally as a treatment device for source areas instead of at the "end-of-pipe".

Mr. Neff also states that the **Stormceptor** is NOT a replacement but could be used as part of a treatment train. Such recommendations are also part of the Technical Manual (salient copies enclosed)

Present conclusion(s): The **Stormceptor** together with (not either/or) a properly sized and constructed (not natural) wetland would most probably (significantly) minimize, if not totally eliminate, the inevitable post-development post-human occupation derived pollutants and their export to our valuable natural inland lakes. Kindly remember that the majority of our natural lakes are very pristine prior to human disturbance and are of an 'ultra-oligotrophic productive nature' as far as nutrients are concerned (as published in several papers of Nova Scotia as well as the result of our extensive Predictive P modelling), and I have summarized same in three of our web files.

The pollutants accrue from a variety of sources in a 'typical urban area', and without limiting the generality, they may include varied amounts of hydrocarbons, heavy metals, pesticides, residential fertilizers, other organic and inorganic pollutants, fecal coliforms, etc.

 There has never been a proven case history locally where so-called stakeholder action has restored lakes to their pre-human-disturbed-states. Notwithstanding, stakeholder education is definitely a positive approach.

Further, please find attached a listing of some of the pollutants in the urban landscape as reported by Schueler, T., and Shepp, D. (1993) in the Study Manual of the **Stormceptor**.

Encl.: 3 sets of (part of) Synopsis-3 (16 pg.)
2 sets of Extracts from the **Stormceptor** Technical Manual (10 pg.)
2 sets of a Copy of the Email from Mr. Todd Neff PEng., Director of Engineering, **Stormceptor** Canada Inc. (3 pg.)