



# APPENDIX L

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## PIC Comments

## **North Dumfries SWMMP PIC Comments**

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These comments are offered following review of the SWMMP PIC pdf file and also reflection on the afternoon ZOOM meeting of March 16<sup>th</sup>. Based on Roy Johnson's presentation, I expect that some of the following comments, recommendations or observation are already addressed in actual master plan document.

Anyway, Being a resident of Ayr and also retired GRCA water resources engineer with knowledge of the subject matter in general and some particular knowledge of its application in the Township I'd like to offer what I hope are a few helpful comments.

**Table 12.1 SWMF#4 Outlet Location:** The Swan Street side ditch does not have continuous fall toward the Nith River. The former ditch is now terminated north of the Hilltop Drive intersection quite close to the pond overflow weir. This was the result of recent regional road upgrades. I don't think a ditch inlet to a storm sewer was included in the upgrade.

Any spill from the SWM facility will be conveyed north along Swan Street to a low point where a union gas line crosses between 1154 and 1166 Swan Street. Overland drainage would then spill toward a gully behind houses on the east side of the road. From there it would flow to SWMF#6. Given the significant height of Swan Street above this SWM facility, it is possible that it can control runoff from a Regulatory Event with gradual release to the Nith. If not, there would be a spill toward buildings located at 1250 Swan Street before entering the Nith River.

During view of Hilltop Subdivision phases that resulted in construction of SWMF#4, then known as SWM Pond B, I recall seeing a drawing with a proposed regulated floodway for protection of properties along the flow path described above. This seems to have fallen through the cracks and may come back as a future problem if not considered in this master plan.

However, to address constraints in the overland flow path to the Nith, there may have been a decision to provide sufficient detention storage in SWMF#4 to control a regional event. Review of the current hydrologic modelling can ascertain whether or not that is so.

I also recall that SWM plans for the earliest phases of the Hilltop Subdivision modelled all drainage conveyed to SWMF#6.

**Table 12.1 SWMF#6 Outlet Location:** the SWM facility discharges to private property (1250 Swan Street) before reaching the Nith River, not Mitchell Drain.

**Table 12.1 SWMF#7 Outlet Location:** This facility appears to discharge to an unnamed creek that flows through culverts under Fowler Street and Swan Street before ultimately entering Nith River .

## Stormwater Management Guidelines

The IDF Update: The IDF table in Slide 36 actually represents intensities (mm/h) rather than depths (mm).

If not already used, you may wish to consider applying the research of UOW Professor Eric Soulis to IDF curve climate change updates.

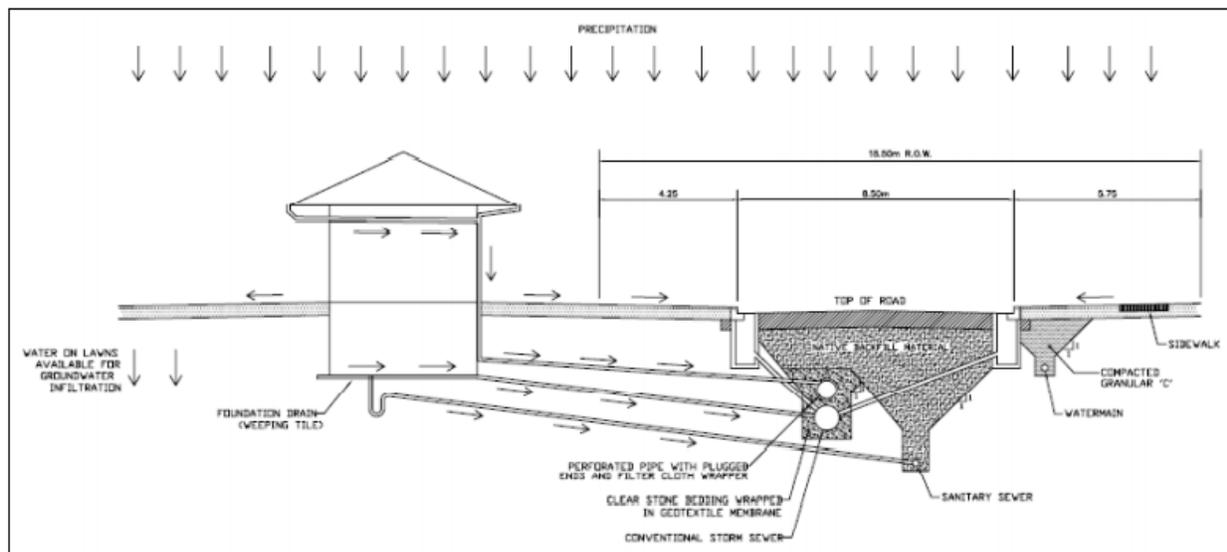
## Stormwater Management Objectives:

Consider perforated pipe storm sewers and third pipes for roof runoff. Both CVC and TRCA have excellent data on runoff reduction and water quality benefits, some of it from studies carried out by J.F. Sabourin and Associates.

As an aside, based on Councillor Rolleman's concerns for home owners filling ditches along Colonial Drive and Lee Robinson's response about future road improvements in the area, I think that it would be a shame to replace this established area's rural section roads with curb and gutter. There are case studies demonstration that a perforated pipe system beneath road side ditches, with inlets that eliminate the need for drive way culverts, can provide adequate drainage to protect road pavement from damage (freeze thaw damage due to a poorly drained road base). They also have water quality benefits for road contaminants other than in the case of salt.

[Chapter 4, Section 4.10 \(cvc.ca\)](#)

**Figure 4.10.4 Schematic of a perforated pipe system receiving roof runoff only**



Source: Clarifica and Schaeffers, 2005

## Future Development Areas

**Areas A & B:** The PIC describes proposed developments for Areas A and B. However both of these areas have already been serviced, presumably with approved SWM plans. I reviewed the preliminary SWM plan for Area A and based on recent observation of construction activities, it appears that Meritech Engineering did have extensive infiltration galleries installed in low areas beside the rail way spur line. There was no feasibility for discharge to the Nith River oxbow on the west side of Northumberland Street.

Area B also has its street services in place and several homes in an advanced stage of construction. Presumably there was an approved final SWM plan before construction commenced.

**Area F:** From my recollection of a Stantec topographic survey and existing conditions hydrologic modelling of this development area, land north of the farm driveway (1056 Swan St.) drains under Swan Street, either to the remains of the former ditch or into SWMF#4. While working for Stantec, Scott Robertson, now a senior water resources engineer at GRCA, was the project manager responsible for that modelling.

Scott was also involved in the design of SWMF#5 and a preliminary design to convey controlled discharge of a Regulatory event to the Mitchell Drain.

Although the PIC suggests discharging stormwater northward to the Nith, with the challenge of passing through a wetland, I suspect that the existing lay of the land may result two SWM facilities, one in the east opposite to SWMF#4 and another in the SW corner opposite to SWMF#5.

**Northumberland Road:** Please consider including the entire property at the SW corner of the Greenfield Rd West and Northumberland Street as a future development area.

As another aside, the Nith River Way neighbourhood has a storm sewer with an outfall to a deteriorating unmaintained detention basin on private property. Based on GRCA WEBGIS mapping, the storm sewer passes between homes at 108 and 110 Nith River Way. The stormwater facility, likely never assumed by the township, is located behind home at 110 to 130 Nith River Way on property belonging to the owners of 180B Nith River Way. It may be wise for planning staff to investigate means of gaining access to this basin for maintenance and a future retrofit.

### **Smart About Salt**

After recent observation of thick layers of road salt in the parking area beside the DriverCheck's building at 53 Northumberland, that have mostly been washed into the Nith during subsequent rainfall, I would like to recommend investigation of incentives or a by-law to have commercial property owners contract snow clearing services that use operators trained and certified through the Smart About Salt program. For long term protection of Ayr's drinking water supply, this is especially important for properties close to the village's supply wells on Gibson Street.