



September 18, 2008

Ms. Barb Jeffrey
Manager, Land Use Policy and Environment
Planning and Development Services Dept.
York Region
17250 Yonge St.
Newmarket, ON, L3Y 6Z1

Dear Barb,

RE: Don Watershed planning study context for York Region's "Vaughan whitebelt" growth scenario

TRCA staff have analysed the "Vaughan whitebelt" growth scenario representing a 40% intensification assumption, as you provided to us on July 18, 2008. We have compared this scenario to the future land cover scenario used in our Don watershed planning study, and reviewed implications in terms of recently-received results of the water modelling work.

Based on an overall comparison of land cover assumptions in the whitebelt area, the two most notable differences are in the assumed areas of terrestrial natural cover and future residential land. The implications are discussed below.

York's growth scenario assumes roughly 25% less (about 130 ha) terrestrial natural heritage cover than was assumed in the Don watershed scenario. Upon examination of the configuration of the two systems, it appears that the deficiencies lay in an east-west orientation in the central portion of the block (see attached Don W. TNHS map). These lands were included in the targeted terrestrial natural heritage system for the Don watershed, as a result of refinements to the TRCA's regional terrestrial natural heritage system made as part of the Don watershed planning study for two main reasons. First, site inventories in this area confirmed the presence of wetlands and breeding amphibian populations. Secondly, inclusion of these lands in the natural system would improve connections between the Upper West Don River corridor and a corridor leading to Purpleville Creek in the Humber River watershed. Purpleville Creek is an important link to the Humber valley systems, which support a relatively richer degree of biodiversity. Given the fragmented and degraded nature of the terrestrial natural heritage system within the Don watershed, these limited opportunities for linkages to neighbouring watersheds will make the Don's natural system more robust by giving it access to a broader species gene pool and movement within the larger bio-region. This connection represents one of the few natural connections between the Don watershed and neighbouring watersheds. In addition to these biodiversity functions, the hydrological implications of reduced natural cover are discussed in the next paragraph.

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York's growth scenario assumes roughly 2.5 times as much residential land (about 220 ha) as the Don watershed future scenario. As noted above, this is due in part to the reduced land area assumed for natural cover and less remaining agricultural land. In the sub-basin context (i.e. "Sub basin 25" in our study), this additional urban cover (beyond our assumptions) represents about 24% of the total sub-basin area, which would be at least locally significant in terms of its potential effect on stream hydrology.

Under existing conditions, the southern portion of this sub-basin is already developed representing a total imperviousness of about 12%. According to the literature, streams begin to exhibit signs of instability when their catchments exceed about 10% imperviousness. While the tributaries of the Upper West Don are currently among the few quality streams remaining in the watershed, we expect they will soon begin to show the typical signs of erosion and water quality degradation associated with urban impacts. Under our future scenario, the total imperviousness of this sub basin would be about 22% and the effective imperviousness (i.e. accounting for stormwater BMPs) would be about 11-15%. As the York scenario assumes a greater urban land area, we would expect a proportionately higher level of impact to stream health, including increased erosion rates.

Our modelling study predicted the effects of different scenarios on erosion potential in the stream channels. Although we do not have a reporting data point at the outlet of sub-basin 25, we do have one downstream on the West Don just upstream of the confluence with Westminster Creek (east of Keele St.). The model predicts an increase in erosion potential of about 9% over 2005 conditions as a result of our future build out assumptions. We would therefore assume a slightly higher likelihood of erosion under the York scenario.

Our modelling also examined the effects on erosion potential of stormwater retrofits of existing urban areas combined with the greenfield build-out. Of interest is the fact that the assumed retrofits reduce erosion potential by about 13% as compared to 2005 conditions, thus they do help to compensate for the effects of development. Having said that, our "current" 2005 conditions are barely within the imperviousness level considered to support a stable stream.

I trust this analysis provides you with information to guide your growth planning work. In summary, we would ask that you look at opportunities to address our targeted terrestrial natural heritage system for the Don watershed by increasing the area of natural cover in your growth plan, particularly in the east-west corridor noted above. You may also wish to consider ways to support a program of stormwater retrofits in existing urban areas (e.g. through policies related to intensification and other means).

Please call me at (416) 661-6600 ext. 5253 if you have any questions.

Yours truly,



Sonya Meek, B.E.S., MSc.
Manager, Watershed Planning
Ecology Division

cc. Deborah Martin-Downs, Dena Lewis, Sameer Dhalla, Carolyn Woodland – TRCA

Don River Watershed: Refined Target Terrestrial Natural Heritage System

