

## **Developer's Response to letter from Les Stanfield, MSc, BSc. dated October 2,2024**

### **Prepared by:**

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Re: 13-T-21-503, OPA-05-21 & Z21-21 (Loyalist Heights):

### **Key Findings from Peer Review:**

There is a considerable discrepancy between the goals and directions as outlined in the County's Secondary Plan as it pertains to Waring's Creek and the design and reporting provided by the consultants for the Cold Creek subdivision. The Secondary Plan aims to protect the integrity and cold water habitats of Waring's Creek and has several recommendations that have not been implemented. As such the Cold Creek plan of subdivision does not have the benefit of, for example, a detailed hydrology study that would be a component of a Watershed Management Plan. Nor are there bylaws or regulations to protect and manage green infrastructure, among other things. The lack of knowledge, policies and bylaws mean that there are no assurances that approaches recommended in the EIS will protect Waring's Creek. But the biggest issue is that without a Watershed Plan and/or direction to the proponents, no attempt has been made to evaluate the cumulative impacts of this project in concert with the proposed Loyalist Heights subdivision or any of the other subdivisions currently being considered within the Waring's Creek Watershed. As mentioned in my submission on Loyalist Heights in 2022, the stream is already at 82% capacity and the cumulative development of these now two lots would certainly push the stream past its threshold. The millions of dollars and thousands of hours of effort expended to bring back the brook trout will be for naught, and all the goodwill of the Secondary Plan will fail.

In other areas where no watershed plans exist, developers are often required to do the analysis themselves in lieu of an agency doing it for them. This approach has been a main driver for municipalities to take a lead on such a document, to save developers money in the long run and to ensure it is done in an unbiased and thorough manner. The county should either advise the proponents who want to develop Waring's Creek to either fund a watershed assessment (that includes cumulative effects) or to replicate the pertinent aspects within their submissions. All future developments in this watershed should be put on hold until this analysis is available.

### **Response prepared by MNAL and Fotenn**

**The Picton Urban Centre Secondary Plan provides specific land use planning direction for the Warings Creek watershed, much as a watershed management plan might. It does not indicate that a watershed management plan needs to be completed by the municipality or others prior to development applications within the Picton Urban Centre being received or approved by the municipality. In fact, its reference to a Watershed Management Plan**

(implementing policy 10) is specific to areas outside of the boundaries of the Picton Urban Centre.

This development application has properly considered all of the implementing policies of the secondary plan relating to Waring's Creek, including having committed to managing for pre-development water balance, the inclusion of LID measures to address water balance and water quality, and the requirement for a robust sediment and erosion control plan to be implemented during construction. It is normal practice that a planning application demonstrate that such matters have been considered and can be addressed as part of detailed design, and for the Draft Plan conditions requiring demonstration that all such commitments have been addressed through detailed design. The EIS includes many recommendations which, together with additional recommendations that may arise through the public process, can be implemented through conditions of Draft Plan.

#### Detailed Comments

While I was encouraged by the consultants' attempt to employ the headwater drainage feature methodologies there were several issues with both their application and the conclusions.

#### 1. Cumulative Impacts were not Considered:

The biggest concern is that there is a gap that has not been addressed (point 9 of the secondary plan) that is a major discrepancy between the type of analysis done and the overall goal for the Waring's Creek Watershed. As acknowledged by the consultants, *the Picton Urban Centre Secondary Plan recognizes that the Waring's Creek watershed is an important natural resource, and includes policies which are intended to manage the potential impacts of future development on the watershed within the Picton Urban Centre.*

The consultants suggest they took this "*special consideration into effect*" (Pg 18 EIS) but make no mention of the cumulative environmental impacts that would occur if both sides of the headwaters were developed.

#### **Response prepared by MNAL and Fotenn**

The reference to point 9 of the Secondary Plan is somewhat misleading. Implementing Policy 9 reads as follows:

**"Enforce compliance with County regulations that may affect water resources in the watershed, including erosion and sediment control, tree cutting, land disturbance and site alteration, dumping and encroachment. Any gaps in regulatory capability and capacity should be addressed as a priority."**

The term "gaps" relates specifically to regulatory tools that the municipality may not have at its disposal, for example those relating to unapproved tree cutting or site manipulation. This proposed subdivision is being approved through the appropriate planning process and will be subject to Draft Plan conditions. As such, there are no regulatory "gaps" relating to any land use changes on these lands.

The referenced quote of page 18 of the EIS appears inaccurate. We believe the portion of that document that is being referenced states: "As described in Section 3 of this report, the Picton Urban Centre Secondary Plan recognizes that the Waring's Creek watershed is an important natural resource, and includes policies which are intended to manage the

**potential impacts of future development on the watershed within Picton Urban Centre; that policy direction has been recognized in our assessment of this resource, as well as in the recommendations of this report.”**

The only way to consider impacts of development on this sensitive watershed is to assess it through the lens and using the methods associated with a cumulative effects analysis. Given that council is currently considering another subdivision (Loyalist Heights) in the headwaters immediately to the north of this property, this type of assessment is critical. The impacts of one subdivision cannot be considered without looking at them all. Further, given that I already identified significant concerns with the Loyalist Heights proposal, there should be even greater concern should this project be approved either by itself or in concert with Loyalist Heights.

This gap should be addressed and implemented before this or any other development in the Waring's Creek watershed is considered.

### **Response prepared by MNAL and Fotenn**

**The Picton Urban Centre is anticipated to be developed in accordance with the land use planning direction of the Secondary Plan, which of course anticipated that multiple parcels of land would ultimately be developed within its boundaries. The policies of that plan do not establish a requirement for a cumulative effects study. Rather, the policies are aimed at making sure each development application within that portion of the Waring's Creek watershed that is within the boundaries of the Secondary Plan maintain pre- to post-development conditions within the downgradient receiver, Waring's Creek. In so doing, it does address potential cumulative impacts.**

2: Recommendations are Not Enforceable and are Insufficient

Another gap is that while the consultants have done an admirable if flawed (see below) assessment of the various headwater drainage features and have provided reasonable recommendations to replicate some of the ecological functions of these features, their recommendations are insufficient and unenforceable.

First, neither Prince Edward County nor Quinte Conservation have any policies or bylaws to enforce the recommendations provided in the EIS. It will be left to the goodwill of the developer to both implement several difficult and expensive BMPs and LIDs and worse, it will be up to the landowners to maintain them forever. Without policies and bylaws in place, it is much more likely that these practices will fail and Waring's Creek will be significantly impacted.

### **Response prepared by InSite**

**Mr. Stanfield's statement that "It will be left to the goodwill of the developer to both implement BMPs and LIDs and worse, it will be up to the landowners to maintain them forever." isn't true.**

**Draft Plan Conditions necessitate completion of a Hydrogeological Impact Assessment, which will require detailed design of the LID infrastructure to meet the water balance objectives.**

**As detailed in the Stormwater Management Report, the Draft Plan illustrates areas for LIDs infrastructure to mitigate water balance in two locations where recharge will be upstream of the wetland a) within the swm pond block to be maintained by the municipality, and b)**

**within the high-density block which will require maintenance by a condominium corporation, which can be enforceable by the municipality through Agreements.**

**Additional opportunities for LID measures could be promoted for homeowners, as detailed in the “Grey to Green LID Residential Retrofits Guide, released by CVC. However, the requirements of the hydrogeological study will not rely on individual homeowner initiatives.**

Second, the proponents propose to utilize storm water management ponds in some unique way that *“provide both water quantity and water quality treatment of this drainage, via stormwater management facilities”*; and that flows be managed *“such that they do not exceed pre-development flows, for all storm events up to and including the 100-year storm”*. There are two issues with this. Firstly, they have no idea what the current surface or ground water flows to Waring’s Creek are from this property. Secondly, managing to the 100-year storm is an 80’s concept that totally underestimates flows because with climate change rainfall events are wilder, wetter and more common.

Third, there is mounting evidence that SWM ponds are failing to meet their design goals. Many receiving waterbodies are being degraded because of pollutants, warmer water and alterations in flows from these old school approaches. Waring’s Creek will be put at great risk should a SWM pond be placed in its headwaters.

#### **Response prepared by Insite and JFSA**

**To mitigate quality and quantity controls, a stormwater management pond is appropriate, in consideration to the large size of the drainage area and the urbanized subdivision design with curbs and a storm sewer system.**

**The claim that the proponent intends to use stormwater management ponds in a “unique way” and eluding that it is unusual is incorrect. A conventional wet stormwater management (SWM) facility is planned for this site. This facility has been designed in accordance with the Ministry of Environment, Conservation and Parks (MECP) 2003 Stormwater Management Planning and Design Manual, which is and recognized as the industry standard for stormwater management facility design in Ontario. This approach also meets the requirements for the County’s ECA through their Municipal Consolidated Linear Infrastructure issued under the Environmental Protection Act (EPA).**

**The water quality requirements of the proposed stormwater management facility are based on Table 3.2 of the Stormwater Management Planning and Design Manual, to provide 80% (Enhanced) Total Suspended Solid removal. The water quantity controls, and necessary stormwater facility volumes have been determined and assessed through detailed hydrologic simulations for both pre- and post-development conditions, to ensure that the proposed development will not result in increased peak flows for various design storms.**

**The assertion that “they have no idea what the current surface ... water flows to Waring’s Creek are from this property” is also unfounded. A detailed pre-development surface water assessment has been completed by JFSA in their preliminary SWM pond sizing memo. This assessment used detailed topographic, land use, and soil information of the site, all of which were included in the pre-development hydrologic model.**

**Additionally, the swm pond block location and size includes an area for infiltration system is proposed downstream of the SWM pond to provide extra water quality treatment beyond the 80% TSS removal required by the MECP. This infiltration system will also help restore groundwater recharge from the site and mitigate thermal impacts due to the development. Its detailed design will be included in the hydrogeology report to be completed with each phase of the development.**

### **3. Consultants Failed to Conduct a Hydrology or Groundwater Study**

The consultants relied on a simplistic interpretation of the hydrology of Waring's Creek "*that It is understood that Waring's Creek is primarily fed by deep groundwater*" to infer that other sources of groundwater were unimportant. I presume that because of this assumption, they concluded that no additional studies were required. While it is true that there are artesian wells downstream of the property under consideration, it is clear from the consultants own findings (photograph 11) that significant volumes of water are contributed by other undefined sources located on their property. These undefined sources are likely a combination of groundwater upwellings, seeps and runoff stored and filtered in the wetland. All that is known for sure is that the hydrology of Waring's Creek is complex and unpredictable, making it extremely vulnerable to impacts from development that will disrupt the stratigraphy and drainage patterns, despite the best intentions of BMPs.

#### **Response prepared by BluMetric**

**The purpose of a hydrogeological impact assessment is to evaluate the potential effects of the proposed development on groundwater and related surface water resources. It also evaluates the potential impacts to groundwater quantity/quality and any potential impacts to users and the environment. Having provisions for infiltration areas (as designed) are proactive means to address the loss of infiltration based on the proposed development. The area being developed represents less than 2% of the surfacewater watershed and based on local topography representative of significant much less percentage contribution to the aquifer influential zone.**

**Please note that the development site can be feasibly studied with respect to hydrogeological impacts.**

**With coordination of future detailed engineering design, we will complete the water balance calculations as part of the hydrogeological impact assessment to confirm sufficient infiltration mitigative features are proposed.**

#### **Additional Response prepared by Fotenn**

**It is acknowledged that a detailed hydrologic assessment will be undertaken. Our project team has proposed the following Draft Condition to ensure this is completed to support future phases of the development:**

**The owner shall not start construction until the Project Hydrogeologist confirms that it will not impact their field work, to the satisfaction of the Director of Development Services.**

With no hydrology studies there is no way to do a water balance for the property that could measure impacts (Point 2 of the Secondary Plan) to Waring's Creek. Having said that, it would be extremely difficult to develop a water budget for a site that potentially has water flowing as surface, shallow and potentially deep groundwater, all within the same site boundaries. Such an analysis would have been a core component of a watershed plan, had one been developed for Waring's Creek. As this is another gap that the County has not acted on, it should be the responsibility of the proponent.

### **Response prepared by BluMetric**

**The purpose of a hydrogeological impact assessment is to evaluate the potential effects of the proposed development on groundwater and related surface water resources. A water balance identifies, investigates and provides mitigative methods to limit any changes to the water cycle of the proposed development lands.**

**Please note the following:**

- **A water balance does not incorporate offsite groundwater inputs from all interconnected aquifers as those inputs will stay consistent with predevelopment conditions.**
- **Only site changes to infiltration will be accounted based on current development blocks.**
- **The current area being developed is less than 2 % of the total waring creek watershed and a water balance of the site is a routine calculation and could be completed with the current site data.**
- **Additional information is required to understand the groundwater elevations and yearly patterns to determine potential impacts on existing groundwater users and natural features which will be completed in the coming year.**

Many of the comments about the hydrology of Waring's Creek that I submitted for the Loyalist Heights proposal are equally valid to this proposal and have not been addressed. Rather than repeat them, I attach them as an appendix.

### **3. Studies Conducted at the Wrong Time of Year**

The consultants did not follow the sampling guidelines as outlined in either the OSAP protocol or the TRCA-CVC guidance documents that recommend mandatory spring (after freshet) sampling followed by early and possibly later summer sampling, depending on field observations. They missed the spring freshet season and therefore missed any opportunity to determine whether the HDFs were seasonally used by fish. No field data or mapping was provided that would enable a validation of their findings.

### **Response prepared by MNAL**

**The EIS included a headwater drainage feature assessment following a methodology established by two conservation authorities in the GTA. It is important to note that this was not a requirement of this municipality and went beyond what is ordinary practice in**

**this jurisdiction. That information was collected as part of the EIS because of the known sensitivity of the Waring's Creek watershed.**

**Mr. Stanfield is correct in his comment that the initial survey of the drainage feature within the subject property was completed after the early spring period (it was completed on June 8, 2022, with a second survey completed on June 24, 2022; dry conditions under both surveys negated the need for a later summer survey). The data gap created by not having completed the early spring survey was addressed through a follow-up site visit that was undertaken on May 12, 2023, where it was again confirmed that the drainage feature was dry. While it may again be argued that this subsequent survey followed the early spring freshet, air photos (typically taken in April, before trees leaf out) of the property from several different years were examined as part of that work, as were site conditions in the mid to late spring, in all cases indicating that there has been a long history of farming those lands corresponding with the apparent flow path of this drainage feature through the fields. All of this informed the headwater drainage feature assessment component of the EIS, which was subsequently reviewed and confirmed as being reasonable by both Quinte Conservation (who have considerable local knowledge) and the peer reviewer retained by the County.**

Appendix I

Previously submitted comments with respect to Waring's Creek Hydrology

(submitted March 17, 2022)

Waring's Creek also flows in a southwesterly direction. The site is on the headwater catchment for Waring's Creek and major artesian wells emerge less than a kilometre away to the southwest of the site. The artesian wells were sufficient to enable the Glenora hatchery to run a substation at this site in the 1960s. These same artesian springs are the key reason why Waring's Creek has been identified as a restoration initiative for brook trout by the former MNRF. This strongly suggests that the Loyalist Heights property is at least partly the source for these artesian wells and any alteration of the groundwater states at this site will likely impact on the artesian springs immediately downslope but offsite. No studies were performed that would refute or confirm this contention.

To ensure no impact to the groundwater upwellings, extensive studies are required that may not be feasible because they would need to:

1. Account for seasonal variability in groundwater flows (availability and head)
2. Include lag times from pumping studies and impacts to artesian spring levels
3. Demonstrate cause and effect at the upwelling site given other pressures on the aquifer.

Without this information, it must be presumed that alterations to the groundwater table at this site will have an impact on the artesian spring's downslope and will greatly impact the ecological integrity of Waring's Creek.

1. The Site is part of a complex and variable groundwater table

There is considerable evidence within the consultant's report that the area is within a vulnerable groundwater area. That the December 25th rainfall event caused an observable change in

groundwater levels suggests that summer drought conditions would also cause groundwater levels to change, in the latter case to decrease. Further, the variability in overburden coupled with the fractured limestone below means that the shallow and deep groundwater tables are intimately connected and therefore unpredictable. Further evidence in support of the complexity of the groundwater table, is the high variability (from 3 to 51.8 m) in water well depths that are listed in the Historical Well levels table.

The authors acknowledge in section 4.2 that the “actual groundwater flows may vary significantly due to the nature of the limestone, which may include zones of much higher or lower conductivity due to horizontal bedding, shale interbeds, and the presence/absence of 6 fracture zones, faults, etc.” This means that impacts to groundwater flows are unpredictable for this location. There is a reasonable probability that alterations to bedrock would disrupt groundwater movement and depending on how intercepted water is redirected could reduce inputs to Waring’s Creek (see above).

#### **Response prepared by BluMetric**

**The recharge of these artesian/flowing wells would be regional and very large. These large areas are located to the north and east, have significant elevation relief, have bedrock at surface or near surface and are likely the source of these artesian conditions.**

**Please note the following:**

- **There is no requirement to complete extensive studies to assess the hydrogeological influence of a site that represents such a small percentage of total area being discussed.**
- **The only impacts to recharge for the proposed development is the reduction in surface infiltration however,**
- **The proposal includes provisions for infiltration galleries to mitigate the potential infiltration changes.**

**The hydrogeological impact assessment will study the site-specific impacts to changes in surface and groundwater conditions and will assess the mitigative efforts. A detailed regional groundwater system investigation is not required as part of the proposed development.**