

Appendix D

From: Berardi, Tony
To: Andrew Plancke
Cc: Tim Del Greco; Robert Brown; Kristina Brdic; Rodney Bouchard P.Eng. (rbouchard@unionwater.ca); Kristine Johnson; Heide Mikkelsen (Heide@peraltaengineering.com); william@peraltaengineering.com; vankempenfarms@yahoo.ca; Peter Valore
Subject: Van Kempen Farms GH Development - Stantec Water Availability Report
Date: Wednesday, September 9, 2020 5:07:19 PM

Dear Andrew,

I have examined the "Application for Greenhouse Water Supply/Connection" submitted by Mr. Adrian Van Kempen of Van Kempen Farms Inc (VKF) with regards to water availability, flow control and onsite storage in support of a proposed greenhouse development and report below.

VKF's application seeks the Town of Kingsville's (Town) approval to use municipal water to service a proposed 1.7-acre vegetable greenhouse development spread over a vacant land parcel currently owned by VKF and situated at Municipal No.865 Road 2 East.

The subject land parcel is identified by PIN No. 751760051 and located immediately west of Graham Sideroad.

The proposed site is comprised of vacant, unserviced agricultural farmland fronting Road 2 East and bordered by the existing 600mm dia. Union Water Supply System (UWSS) trunk watermain running along Road 2 East.

Per VKF's application and revisions thereto, the proposed 1.7-acre greenhouse development is to be used to grow various vegetables having an average projected maximum water consumption rate of up to 0.03 Imp. Gallons per

plant per day (lgpppd) at an average projected plant density of up to 160,000 plants per acre (ppa). This arrangement would result in a projected maximum day water demand of approximately 2,940 Imp. Gallons per acre per

day (lgppad) and a projected total maximum day water demand of approximately 5,000 Imp. Gallons per day (lgpd).

To support the above projected total maximum day water demand would require that the municipal water distribution system be capable of delivering water at a regulated uniform rate of 3.5 Imp. Gallons per minute (lgpm) over a 24-hour period.

In accordance with municipal policies and bylaws controlling greenhouse operations, expansions and developments, the municipal water supply to the entire greenhouse development/operation will not be required to be regulated using an automatic water flow control system (WFCS) and onsite freshwater storage system since the development is under the 1.8 acre threshold stated in the bylaw.

The proposed greenhouse development would draw water from the existing 600mm dia. municipal trunk watermain fronting the development along Road 2 East.

With the aid of the UWSS hydraulic computer model using existing and future residential population projections, the existing 600mm dia. trunk watermain fronting the existing greenhouse operation along Road 2 East has sufficient unserved capacity to deliver the 3.5 lgpm peak flow rate to support the 1.7-acre greenhouse development without having a significant impact on the remainder of the water distribution system.

In discussions with Mr. Van Kempen, they do not wish to implement water flow control nor onsite fresh water storage to service the proposed development.

As a result, it is our recommendation that the maximum size water service connection that can be provided to support this greenhouse facility will be ¾-inch diameter with no oversizing opportunities on private property.

On account of the small water serve connection size and associated very low treatment capacity allowance, an application to the UWSS for treatment capacity will not be required in this case.

Specific requirements for fire protection have not been assessed in this review since fire protection requirements are under the jurisdiction of Kingsville Building Services and its Chief Building Official (CBO).

With the aid of the UWSS hydraulic computer model, it was observed that the proposed 600mm dia. trunk watermain along Road 2 East where it fronts the proposed greenhouse development would have sufficient hydraulic capacity to provide fire-flows in excess of the minimum 2,000 lgpm recognized fire-flow threshold for greenhouse developments while maintaining the required min. 20 psi residual pressure benchmark in the remainder of the water distribution system during maximum day flow conditions.

Hence, the above water distribution system performance would need to be acknowledged when considering fire protection strategies and alternatives should fire protection be a requirement of the development and/or the CBO currently or in the future.

Based on the above considerations, it is our recommendation that VKF be granted access to the municipal water distribution system on the existing 600mm dia. municipal trunk watermain along Road 2 East to service the proposed 1.7-acre greenhouse development on Road 2 East having PIN No. 751760051; and that granting of water treatment and water delivery capacity be contingent on all the following conditions":

- That VKF be restricted to constructing a new water service connection to the proposed greenhouse facility having a maximum pipe size of only 19mm diameter with no oversizing opportunities on private property.
- That the above proposed new 19mm dia. water service connection be routed through a new meter chamber at the property line complete with a new 19mm dia. meter all in conformance with Town standards and requirements.

Please contact me directly should you have any questions or concerns or require additional information

Sincerely yours,

Tony Berardi P.Eng.
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From: Andrew Plancke <aplancke@kingsville.ca>

Sent: Tuesday, September 08, 2020 10:44 AM

To: Berardi, Tony <tony.berardi@stantec.com>

Cc: Tim Del Greco <tdelgreco@kingsville.ca>

Subject: Van Kempen Farms

Tony,

Please see the attached Application for Greenhouse Water Supply/Connection and miscellaneous supporting information for Van Kempen Farms (865 Road 2E)

Not a large operation, and not sure what the requirements per plant are for radishes / Baby bok choy but plant density is crazy.

Not sure who filled out the application but they should read a little closer. I'm assuming they meant 5000lgpd total and not 5000lgpppd.

Please perform your analysis and provide a report wrt this application.

Thanks



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