December 20, 2021

BY EMAIL ONLY

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Subject: **2nd Draft Plan Approval Submission**
Sunvale Subdivision
Township of Wellington North
O/Ref.: 00702

Ms. Pringle:

Please find enclosed the 2nd Draft Plan Approval Submission for the Sunvale Homes Subdivision Project in Mount Forest for Township review and comment. The following is a summary of the comments from BM Ross and Associated Ltd dated May 11, 2021 in italics and our responses:

1) *The Township intends to request a condition of Draft Plan approval that requires "Environmental Warnings/Restrictions" be registered on title for the proposed residential lots, to ensure Purchasers are aware of the adjacent land uses (i.e., WWTP and its driveway) and associated potential occurrences of odours, noise, traffic, etc.*

   Understood.

2) *The Township intends to require the Developer provide a buffer between the subdivision and the WWTP/driveway. This will include the need for privacy fencing, and consideration should be given to tree plantings south of the subdivision. A condition of Draft Plan approval will be included pertaining to this requirement.*

   Understood. The details can be worked out during the detailed design stage as to the exact buffering type.

3) *There is a closed landfill site adjacent to the subdivision. It is our understanding County Solid Waste Services requires mitigation measures be implemented or else a revised Guideline D-4 Study provided that demonstrates mitigative measures are not required. In addition, please note that the proposed storm sewer outlet for this subdivision is shown passing alongside the landfill site (and maybe a SPS overflow sewer?). There may be the potential those works could become a corridor for leachate and methane gas migration. The D-4 Study should address this matter as well, and any required mitigative measures identified.*

   Ian D. Wilson Associates is updating the report based on the County recommendations. It is our intention to provide clay plugs on the storm sewer outlet near the WWTP access road as well as near STMMH6 to ensure methane and leachate are not able to migrate. The proposed SPS building will have passive methane venting from under the slab. We would request that the completion of the D-4 Study be a condition of Draft Approval.

4) *Draft Plan drawing:*

a) *Street line radii should be shown for all horizontal curves and intersections.*

Street line radii have been added at all curves and intersections in accordance with the markup provided.

b) *Horizontal curves for local residential streets are to have a minimum inside edge of pavement radius of 13.75m. Therefore, the minimum inside street line radius at horizontal curves shall be 8m. The current Draft Plan does not appear to meet this requirement. This should be revised.*

All horizontal curve radii have been revised to ensure an EP radius of 13.75m

c) *Provide 0.3m reserves along the southerly side of Lots 33 to 44 and Block 125, and along easterly side of Lot 117.*

0.3m reserves have been shown as requested.

d) *The existing drainage easement encroaches into Lots 113 & 116. How is this being addressed?*

The lotting has been reconfigured in this area and this is no longer occuring

e) *Show a 7.5m x 7.5m daylighting triangle at the southeasterly corner of Block 125, to be deeded to the Township.*

The requested daylighting has been shown on the Draft Plan.

5) *Water servicing:*

a) *You indicate fire flow rates for single family homes is 4000 L/min (i.e., 66.7 L/s). What level of fire protection is required for semis and townhouses? If higher flow rates are required, then likely 200mm dia. watermain will be required.*

As per the Fire Underwriters survey, townhouses require a flow of 8,000 L/min and therefore the watermain diameter has been increased to 200mm. We would ask that the Township model be updated to determine if the existing system is able to provide sufficient flow to the site as conducting hydrant flow testing would require the opening of hydrants to full capacity to determine maximum available capacity which in our experience has not been the Township's preference when completing water testing for other developments in Mount Forest. If an additional connection is required, we would ask the Township to consider allowing the watermain to be connected across Township property to the north via the walkway block to connect to the 250mm diameter watermain on Princess Street.

b) *You indicate the distribution system hydraulics should be based on a pipe roughness coefficient value of 130. Please clarify since that does not conform to MECP Drinking-Water System Guidelines Table 10-1. Our system model is based on those guidelines.*

Please see the revised water servicing section of the FSR. The C value has been revised to 110 for 200mm watermains in accordance with MECP Drinking-Water System Guidelines Table 10-1.

6) *Sanitary servicing:*

a) *The SPS overflow sewer size, grade and route should be shown, including confirmation the outlet will not be subject to flooding and explain how residential basements will be protected from sewage backups.*

The SPS overflow pipe has been shown on the Conceptual Servicing Plan. The SPS is set to overflow if the sewage level reaches the invert of the sanitary sewer at the road thereby being below all basement elevations. The overflow ties into the storm sewer above the obvert of the storm sewer. The storm sewer is designed for the 100 year storm event without surcharging

therefore the overflow will not be subject to flooding under all design storm events.

b) *Proposed Sewage Pumping Station (SPS).*

i) *Clarity needs to be given about the intended design peak pumping capacity of the SPS. It is also noted that there is no indication that Block 125 will be discharging to the SPS, but the calculations appear to include Block 125.*

On the revised Conceptual Servicing Plans Block 130 (formerly Block 125) is shown outletting to the proposed sanitary sewer on Street B.

ii) *Location and proximity to residential dwellings: provide comments on how odours (i.e., from the wetwell vents), noise (i.e., from the generator and from building fans), and aesthetics (building exterior finish/appearance) will be addressed.*

The proposed location of the sewage pumping station has been moved away from the subdivision to the opposite side of the WWTP Access Road on lands owned by the Township. This will provide a distance buffer from the residential development. A Clause will be added on Title to the lots near the SPS to inform them of the proximity to the SPS and that there may be odours and noise from the SPS. Building exterior finishes are proposed to be determined during the detailed design stage of the project.

c) *A standard condition of Draft Plan approval will require clearance from the Township that there is adequate sewage capacity for the subdivision. Please make the Developer aware of the Township's current sewage allocation policy, which limits sewage allocation applications to once a year prior to the end of April. Also, the Developer should be aware that there are quite a number of development interests in Mount Forest in comparison to the WWTP reserve capacity. Currently, there is sufficient sewage reserve capacity for this subdivision, but that could change as development interests materialize.*

Understood.

7) *Stormwater Management*

a) *Uncontrolled westerly surface runoff: While pre-consultation discussions acknowledged it may be impractical to collect and convey all surface runoff to a suitable municipal outlet, and while your calculations demonstrate post-development peak runoff rates and volumes to the property west of the site will be below pre- development levels, the following should be addressed.*

i) *Normally under such situations, the Township requires all or most of the impervious areas of a development to still be captured and controlled. This does not appear to be achieved for Lots 19 to 33, based on the shown lot grading design and assumed location of downspouts for these walkouts/backsplits.*

A note will be added to the plans to direct as much rooftop runoff as possible to the front yard however, we have modelled the worst case that the back half will be directed into the rear yards.

ii) *Your report Section 6.3 indicates this westerly runoff will not be concentrated in a single location. However, it appears runoff from approximately Lots 19 to 27 will concentrate opposite Lot 21, and Lots 27 to 33 will concentrate opposite Lot 31, due to extraneous grading and drainage patterns. Demonstration needs to be provided that runoff rates and volumes to each of these low-lying areas will be less than or equal to pre-development conditions.*

The report indicates that the runoff from the development will not be concentrated in a

single location as it sheets flows from the lots as it does in pre-development conditions, the flow patterns on the neighbouring lands cannot be modified or controlled. We have added additional grade tags to show how the runoff will outlet from these areas. The revised SWM Report outlines that the peak flow and volume to each area is less than the pre-development condition.

b) *It appears the density of this development will be increased due to the proposed zoning amendments that will reduce various setbacks and, hence, increase the building envelopes, and the degree of imperviousness is therefore expected to be higher. Please check your appended calculations for impervious percentages, and confirm in particular that the rooftop areas are appropriate. Justification should be provided if not using the maximum building envelope sizes in these impervious area calculations.*

The modelling has been reviewed and updated to ensure the maximum buildable area has been used for runoff calculations

c) *Comment on how reduced setbacks will impact on the Township's servicing standards drawing G1 that requires grade at dwelling to be minimum 450mm higher than highest front lot elevation. What will be achieved? Demonstrate major runoff conveyance will be accommodated along roadways in particular at/near roadway sags.*

We are not proposing to achieve the minimum 450mm higher than the highest front lot corner as that will result in driveway grades that exceed the maximum allowable even at the normal minimum setback of 6m. The lots will be graded in accordance with best practices. We note that other developments recently approved in Wellington North were not required to achieve the 450mm higher than the front lot corner. Grading will be proposed that meets the minimum 2% sideyard requirement and a minimum of 0.2m above the swale grade perpendicular to the front corner of the building.

A section has been added to the SWM Report regarding the roadway sags.

d) *An emergency spill route should be shown on your drawings from the Block 126 ponding area.*

An emergency overflow route has been added to the grading plan. As seen in the updated modelling, the Hurricane Hazel event can be contained within the proposed ponding area.

e) *The existing drainage ditch, from the existing Cork Street 900mm dia. storm sewer outlet to the 800mm dia. CSP culvert that crosses the WWTP driveway, needs to be evaluated, to confirm conveyance capacity within the drainage easement. We note that your model does not include the large extraneous catchment area for that ditch and, hence, peak flow rates in your model are not reflective of actual much higher flow rates through that watercourse and to the South Saugeen River.*

The modelling has been updated to include the extraneous catchment area as defined by BM Ross subdivision design drawings as well as Triton Engineering Storm sewer design information. The updated flow rates can be seen in the SWM Report.

f) *Quality control: An OGS structure is proposed to service the main part of the subdivision (7.32ha). MECP Guidelines suggest use of OGS for areas up to 2ha. Provide justification for use of an OGS for this subdivision.*

We have proposed an OGS structure as quantity control is not required, and due to limited space, a quality control pond is not achievable. We have used OGS structures in other instances with catchment areas larger than 2 ha including developments reviewed and approved by BM Ross.

g) *More information is required pertaining to Block 125 SWM and runoff conveyance.*

i) There is no indication that quantity control is proposed.

No quantity control is proposed. The modelling shows that the uncontrolled runoff from Block 130 (formerly Block 125) can be accommodated by the existing infrastructure.

ii) The model indicates Block 125 will discharge to the existing drainage ditch (i.e., to the inlet side of the existing 800mm dia. CSP WWTP driveway culvert), although Section 5.2 suggests internal storm sewers for Block 125 may instead be connected to the existing 900mm dia. Martin Street outlet sewer, which discharges to the existing drainage ditch downstream of the 800mm dia. CSP.

The report has been updated to indicate that Block 130 will outlet to the existing ditch to the west of Block 130.

iii) Therefore, the existing drainage ditch needs to be evaluated due to the absence of SWM control and the increased impervious area contribution, which will increase the peak runoff rate (as demonstrated by Catchment 101 pre- development peak runoff of 112.95 L/s vs. Catchment 202 post-development peak runoff of 151.09 L/s, for the 100-year storm, with Catchment 202 even being a reduced area in the order of 58% of the Catchment 101 area). To properly evaluate that existing drainage system, the entire extraneous catchment area would need to be included.

In the updated model, the flows are provided and it shows the existing infrastructure can convey the Hurricane hazel event without impacting the proposed development.

iv) If proposing to connect Block 125 to the existing Martin Street sewer, the conceptual connection should be shown, it shown that it will not conflict with the existing sewage forcemain and watermain, and the capacity of that sewer confirmed. Given there will need to be storm sewer constructed on Cork Street when it is urbanized north of Martin Street, capacity should be reserved in that sewer for that road urbanization and for future development on the east side of Cork Street.

As seen on the revised plans, there is no intent to connect the proposed sanitary or storm sewer to Cork Street. Since the SVCA is requiring the existing 900mm outlet on Cork Street to be maintained, there will be excess capacity available for any Cork Street improvements.

v) Method and ownership for Block 125 quality control should be indicated. Will all impervious areas be captured and conveyed to a quality control feature? Some grading information should be provided to demonstrate this is feasible.

Block 130 will remain under private ownership (rentals, condo, life lease etc). All infrastructure within Block 130 will be privately owned and maintained.

vi) What will be the fate of Block 125 major storm runoff?

All runoff will be directed to the existing watercourse to the west.

h) Supporting calculations should be provided to demonstrate that the existing receiving outlet ditch to the South Saugeen River, that is south of the proposed headwall, will be able to accommodate the increased uncontrolled peak discharges including erosion protection. It is noted that the current model does not yet include the extraneous areas contributing to that drainage ditch, including the areas serviced by the existing Cork Street and Martin Street storm sewers.

The model has been updated to include the existing extraneous area as well as a combined outlet for the existing storm outlet from under the WWTP driveway and the subdivision.

The downstream channel is capable of conveying the runoff to the South Saugeen River. During detailed design the erosion protection will be determined. We foresee a rip rap channel

being constructed to ensure there is no erosion.

8) *It is our understanding Block 125 (future cluster townhouses) will be subject to Site Plan Control at the time it is proposed to be developed. As such, detailed servicing and grading information is not required at this time, but the following additional information should be provided and shown, to confirm its serviceability:*

   a) *Sanitary sewer connection. This should consider the depth of the existing Cork Street sanitary sewer, along with the possibility of the Township extending the 900mm dia. Cork Street storm sewer south to Martin Street which may conflict with a gravity service connection (i.e., may have 1.0m or less of cover available).*

   b) *Watermain connection*

   c) *Storm sewer connection*

   d) *Clarify responsibility for maintenance of the existing drainage easement that passes through Block 125 as well as the small portion of Block 125 that lies to the north of the existing drainage easement.*

   The proposed sanitary sewer and storm sewer outlets have been shown. The watermain will connect to the existing main on Cork Street. The block has been modified so the drainage easement is no longer within the Block.

9) *As indicated in the Township's servicing standards, a geotechnical investigation should be completed. It is noted that the presence of a groundwater seepage area is an indication of a high water table so there is a need to evaluate subsurface conditions to confirm basement elevations and method of managing foundation drainage. The borehole investigation should take into consideration the depth of the proposed SPS wetwell. Boreholes should be completed along extraneous servicing routes. The requirements of the Excess Soils Regulation will should be addressed in the report.*

   Please see the attached geotechnical investigation. We have installed a deep borehole in the previous proposed SPS location. We do not foresee the change in location being an issue to use the information from the current deep borehole as we are in the same vicinity. We have completed a hydrogeological assessment of the site in order to address the SVCA concerns with regards to the seep area. As you can see in that report, there is a cross section of the site showing groundwater levels and basement elevations. The seep area is an area where water sits until the sand and gravel layer has enough capacity to convey that runoff.

   The current grading does not require any fill material to be removed from the site. The only material that will need to be taken off site is the excess topsoil that can be exempt from the Excess Soil Regulations.

10) *Property ownership and permissions for all proposed external works needs to be checked by the Developer, including the sewer and ditch routes to the South Saugeen River.*

   The Developer's lawyer is reviewing ownerships now but it appears that that lands are owned by the Township. The County owned lands are south of the existing landfill fence. Final confirmation will come from the lawyer.

11) *Minor report checks and corrections:*

   We have made the noted corrections.

If you have any questions regarding the above, please contact the undersigned at 519-506-5959 ext. 101.

Yours truly,

Travis Burnside, P.Eng.
Project Engineer

Encl.

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