

# MEMORANDUM

**To:** Aaron Hair  
**From:** Tony DiCiocco, Manager of Engineering Services  
**Date:** January 18, 2021  
**Subject:** Review Comments  
Proposed Residential Development- 1654 Manning Road, Municipality of Lakeshore

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## Introduction

The proponent submitted a Functional Servicing Report dated September 30, 2020 (which has since been revised twice) forming part of the supporting documentation for a rezoning application to permit the development of an 8 story condominium building and 10 townhouse units located at 1654 Manning Road.

Preliminary comments were submitted to the proponent by Planning Department on November 30, 2020 which included comments from Engineering (dated November 4, 2020) related to the sanitary servicing of the site. This memo is intended to build on those preliminary engineering comments.

Currently there are two main concerns with the above noted proposal for rezoning of the site:

- 1) Sanitary sewage capacity conveyance from the site to the Denis St. Pierre Sewage Treatment Plant; and
- 2) Sanitary sewage treatment capacity at the Denis St. Pierre Sewage Treatment Plant.

It is understood by the proponent that the Municipality's expansion of the Denis St. Pierre Sewage Treatment Plant is expected to be completed in the spring of 2023 which coincides with the expected sanitary sewer connection to this site. Therefore this memo deals specifically with item 1) above, the sanitary sewage conveyance from the site to the treatment plant.

All three versions of the Functional Servicing Report (dated November 9, 2020, October 30, 2020, and September 30, 2020) have been reviewed by Engineering. The Municipality's engineering consultants, both Stantec and Jacobs were consulted throughout this process.

The comments are summarized below.

## Functional Servicing Report dated November 9, 2020 (Updated #2)

In the above functional servicing report dated November 9, 2020, the residential density put forth in the original proposal is reduced and continues to state that *"The Town of Lakeshore will also have to undertake further studies and analysis to ensure the Amy Croft sanitary sewer and downstream infrastructure is adequate for the subject development."*

In the above functional servicing report, based on the original proposed use (commercial), the report identifies the approved allocation of sewage for this site is to accommodate approximately 56 people (37 persons/hectare).

This functional servicing report identifies a proposed density for residential use of 404 people (one bedroom condominium units at 54 people, two bedroom condominium units at 320 people and 10 townhouse units at 30 people).

The comments below pertaining to the review of the October 30, 2020 Functional Servicing Report remain applicable.

### **Functional Servicing Report October 30, 2020 (Updated #1)**

In the above functional servicing report dated October 30, 2020, the proponent is stating *"The Town of Lakeshore will also have to undertake further studies and analysis to ensure the Amy Croft sanitary sewer and downstream infrastructure is adequate for the subject development."*

In the above functional servicing report, based on the original proposed use (commercial), the report identifies the approved allocation of sewage for this site is to accommodate approximately 56 people (37 persons/hectare).

The proposal is requesting to accommodate a residential use of 450 people (168 condominium units at 420 people and 10 townhome units at 30 people).

Based on a technical memorandum received from Jacobs dated August 11, 2020, there is insufficient conveyance capacity in the sanitary sewer system on Amy Croft to accommodate the increased flows brought forward under the rezoning application (multi story condominium and 12 townhomes).

Based on the results of this memo, the Municipality has since commissioned Stantec Consulting Ltd. to explore and present options to provide additional sewage conveyance capacity to this property, as well as the entire area in the Amy Croft Secondary Plan to accommodate further applications wishing to increase density and conveyance beyond that identified in the approved Plan.

A draft report from Stantec outlining options is expected to be received by March 2021. This report will assess conventional conveyance options for this site that will address long term needs (and in addition consider additional sites in and around this area).

Formal Engineering comments related to the above were submitted to planning on November 4, 2020 (attached) and were incorporated into the formal response to the proponent dated November 20, 2020 as indicated in the Introduction section of this memo.

It was also noted in the attached November 4, 2020 comments that Engineering did not review the rest of the submission and would not do so until such time as the sanitary sewer conveyance concerns have been addressed.

### **Functional Servicing Report September 30, 2020 (Original)**

In the above functional servicing report, based on the original proposed use (commercial), the report identifies an allocation of sewage to accommodate approximately 56 people (37 persons/hectare) for this site.

The proposal is requesting to accommodate a residential use of 450 people (168 condominium units at 420 people and 10 townhome units at 30 people).

The townhome units are being proposed to drain freely into the municipal sanitary system.

To accommodate the additional flows (related to the condominium units), the developer is proposing to install a sanitary sewage holding tank and release sewage to the municipal sewer system during off peak hours (from 11 pm to 5 am). The holding tank was proposed to be sized to accommodate a peak day flow plus an additional 27% capacity with a proposed storage capacity of 240,000 Liters (63,400 gallons).

The proposed holding tank would be directly connected to the Municipal sanitary system. It is understood that the proponent is willing to enter into agreements with the Municipality to operate such a system, and decommission it in the future, at such a time as there is capacity in the Municipal sanitary sewage conveyance system.

This initial submission was never formally commented on in writing. The proponent was verbally told by the Municipality that this system was not supported and a subsequent submission was made on October 30, 2020 eliminating this system as a solution.

Since this time, the proponent has asked to revisit the original proposal.

Based on a comprehensive review, the following has been noted:

#### **MUNICIPAL STANDARDS**

The Municipality of Lakeshore's Development Standards Manual does not contemplate this type of system (either in a temporary and/or in a permanent nature).

#### **SIZE & LOCATION OF THE TANK**

The existing sanitary sewer conveyance system that currently services the Amy Croft Secondary Planning Area experiences surcharging downstream during storm events. As a result, discharge from the holding tank to the sanitary sewer system during off peak hours cannot be guaranteed to avoid overwhelming the system, resulting in flooding downstream (residential area). These conditions can last anywhere between 24 to 48 hours.

Based on this, the tank would need to be sized to accommodate multiple days of sewage (larger than proposed). This would be equivalent to the size of the Atlas Tube Centre swimming pool (lap pool).

The Municipality has been made aware of one other private/municipal hybrid sewage system (holding tank connected to a municipal system) of this magnitude located in Leamington. This system has not yet been placed into operation (currently under construction), is located in a more rural area with the surrounding land use being residential, greenhouse and highway.

The Developer's consultant was asked to provide additional examples of this type of hybrid system used in other parts of Ontario. No other examples have been provided for consideration that have used this type of system within a similar area (high density) or for a similar use (high rise condominium).

#### **SYSTEM OPERATION AND MAINTENANCE**

It is proposed that this system would be privately maintained, therefore certified, competent staff would be required to be retained and available to operate this system. This system would require daily inspection and/or maintenance to ensure operation of the system continues to be adequate.

With this proposed system, sewage accumulates and settles in the tank for a day and/or more extended periods of time requiring flushing after discharge to remove any and all solids and grit that settles in the tank.

The Municipality would require documentation of the above noted maintenance activities, and access to the site to review and further ensure that the system is operating properly to avoid impact on the Municipal system. It is anticipated that the municipality would need to enter into agreements with the proponent to ensure the ongoing operation and limit the risk to the municipality should the facility not operate properly.

Although this system is privately owned, the Municipality would require additional staff and resources to undertake reviews and inspections (potentially third party consultant(s)) based on this proposed hybrid system. Compensation to support this would be required.

#### **CONTINGENCY PLAN**

As identified, under certain wet weather conditions, the off peak flows could not be accepted into the Municipal system. If a wet weather event were to occur, this system could never recover based on the continuous flows being generated and the limitations of the off peak hours therefore, the proposed holding tank system would require reliance on a contingency plan which would involve pumping and hauling of the sewage to a treatment facility.

Under these conditions, the holding tank system would operate as a Class 5 Sewage System- A sewage system which requires or uses a holding tank for the storage or retention of hauled sewage at the site where it is produced prior to its collection. These types of systems are not permitted by the Ministry of the Environment, Conservation and Parks (MOECP) unless temporary in nature (less than 12 months) based on the impact to human health and the environment.

Further, the proponent would have to enter into a contract with a third party in order to accommodate this plan during times when the Municipality cannot accept the sewage, the system fails or the holding tank is overwhelmed (to avoid overflow).

The Municipality has concerns locally to be able to accommodate the hauling of this magnitude of sewage based on the limited trucks and/or time restrictions.

The hauled sewage would need to follow testing procedures and strict protocols before any Municipality accepts the sewage at any licensed treatment facility. Time restrictions are also applicable in this case.

Although this is noted as a contingency plan, it will inevitably be required with this type of system (hybrid). The frequency of the system having to operate in this manner is unknown and extremely unpredictable with associated time constraints.

### **COMMUNITY IMPACTS**

Odor and sediment accumulation in the tank with this type of system can be a serious problem. The sewage in the proposed holding tank could go septic if it cannot be discharged within an appropriate amount of time. This accumulation of solids and grit that settles out in the bottom of the holding tank generates odorous substances (i.e. hydrogen sulfide (H<sub>2</sub>S)). This concern is magnified based on the proposed location and surrounding area use (i.e. hotel, restaurants and grocery stores).

This will create concerns and complaints on an ongoing basis for the residents surrounding the site within the Municipality of Lakeshore. In addition and based on the proximity to the Town of Tecumseh, this concern has the potential to impact their residents as well.

The accumulation of solids and grit could also cause the presence of methane gas. This can create the risk of explosion.

There is the potential for overflow and/or sanitary sewage flooding with this type of system at the site and potentially downstream if under the contingent plan, hauling cannot be accommodated fast enough.

### **CLOSING REMARKS**

Based on the risks, the complexity and the impact to the Municipality with this type and size of system, Engineering does not support the use of a holding tank/pumping system for the collection and conveyance of sanitary sewage located in an intensified, urban area based on the following:

- The Municipality of Lakeshore's Development Manual does not contemplate this type of system.
- These types of holding tanks are not only expensive to operate they are not considered a reliable system for dealing with raw sewage on an ongoing basis.
- This system raises significant concerns to both human health and the environment if it is unable to operate as intended (i.e. under wet weather conditions and/or under failure of the system).

- A contingency plan for a system of this magnitude in order to support the sewage in an instance where the conveyance system cannot accommodate the off peak hour pumping and/or the holding tank should fail is insufficient, unreliable and not predictable.
- If there is a failure in the private sewage system, it is likely that both the proponent and the Municipality will be held responsible (as this is a hybrid system). There is significant risk and liability associated with this proposal as a permanent sewage conveyance system, including the potential to impact to the Municipality's system. Currently the Municipality has no plan to provide additional capacity to service this area.
- This is not a conventional system. A more conventional alternative should be investigated and considered in order to accommodate the rezoning of this property. This investigation is currently being undertaken by the Municipality.

Further, this application is considered in process based on the recent report to Council (dated December 4, 2020) and this request for additional sanitary sewage capacity would be placed with holding provisions based on the current treatment capacity concerns at the Denis St. Pierre Treatment Plant.

#### **RECOMMENDATION**

As a result, EIS recommends that a decision on the rezoning application be deferred, pending the results of a draft report outlining options to provide additional sanitary conveyance capacity to the site, expected to be received by March 2021. As mentioned above, this report will assess conventional conveyance options that will address the long term needs for this site (and also consider additional sites in and around this area).

If you have any questions or require additional information, please contact the undersigned.



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Tony DiCiocco, C.E.T.,  
Manager of Engineering Services



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Krystal Kalbol, P.Eng.,  
Director of Engineering and Infrastructure Services

# MEMORANDUM

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**Date:** November 4, 2020  
**To:** Aaron Hair  
**From:** Tony DiCiocco, C.E.T., Manager of Engineering Services Division  
**Re:** 1st Submission Site Plan Review [SPC-16-2020] re: Manning Developments

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We received the following document on November 3, 2020:

- Revised Functional Servicing Report – Dated October 30, 2020

**General:**

- 1) The Town of Lakeshore currently does not have the sanitary sewage conveyance capacity within its collection system for an eight story multi-unit high rise residential building and 10 townhomes.
- 2) The Town of Lakeshore has commissioned a consultant to study the downstream sanitary sewer conveyance system to determine if additional capacity can be provided to the Amy Croft Secondary Plan area. We will contact the proponent once the study is complete. The study will be completed as soon as possible.
- 3) Please note, we have not reviewed the rest of the submission and will not do so until we can confirm that we can accommodate this development in our sanitary sewer collection system.

If you have any questions, please contact the undersigned.



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Tony DiCiocco, C.E.T., Manager  
Engineering Services Division