July 5, 2021

BY EMAIL ONLY

Municipality of West Grey
102813 Grey Road 4
Durham, ON N0G 1R0

Tel: 519-369-2200

Subject: **Functional Servicing and Stormwater Management Report**
Proposed 221126 Grey Road 9 Redevelopment
Municipality of West Grey
O/Ref.: 01871

To Whom it May Concern:

Cobide Engineering Inc. has been retained by Chad and Rebecca Weltz to prepare a Functional Servicing and Stormwater Management Report and accompanying site servicing and grading drawings for a proposed redevelopment to be located at 221126 Grey Road 9 in the former Village of Neustadt, Municipality of West Grey.

The proposed redevelopment will consist of 8 freehold semi-detached units.

This report has been prepared to document the proposed servicing of the site with sewer and water as well as provide an overview of how stormwater will be managed.

1.0 SITE DESCRIPTION

The subject property has a total area of approximately 0.38 ha and is currently vacant. The site was previously a restaurant with associated parking until a fire destroyed the building in 2016. Since that time it has remained vacant. The site slopes from south to north towards Grey Road 9.

An aerial map showing the located of the subject property is shown in Figure 1 below.

Figure 1 – Aerial Map of Subject Property

2.0 SITE SERVICING

2.1 Water Servicing

Based on visual inspection of water valves and hydrants there is an existing watermain on Forler Street and Queen Street (Grey Road 9). The watermain will need to be extended along the frontage of the property to provide individual services to each unit. A 19 mm service will be provided to each unit with a curb stop installed at the property line.

Cobide Engineering has requested information from the Municipality of West Grey regarding the available capacity however at the time of writing this servicing update, no information had been received. The flows from the previous usage are estimated to be approximately 7,500 L/day based on an estimated 60 seat capacity based on OBC flows. The OBC states a flow of 125 L/day per seat is to be used for a restaurant or bar. Using the same OBC tables, a two bedroom residential unit will have a flow of 1,100 L/day. This results in an overall flow of 8,800 L/day.

While the proposed flows are higher than the previous usage, the small increase is not expected to have an impact on the overall water system.

Sanitary Sewer Servicing

Using topographic information and a site inspection it was determined that there is an existing sanitary sewer on Forler Street and Queen Street. Similar to the watermain, the sanitary sewer will need to be extended from the intersection of Forler Street and Queen Street along the frontage of the proposed development. Each unit will be serviced with a 125mm diameter PVC sanitary service. All units will be serviced via a gravity sewer service.

Cobide Engineering has requested information from the Municipality of West Grey regarding the available capacity however at the time of writing this servicing update, no information had been received. The flows from the previous usage are estimated to be approximately 7,500 L/day based on an estimated 60 seat capacity based on OBC flows. The OBC states a flow of 125 L/day per seat is to be used for a restaurant or bar. Using the same OBC tables, a two bedroom residential unit will have a flow of 1,100 L/day. This results in an overall flow of 8,800 L/day.

While the proposed flows are higher than the previous usage, the small increase is not expected to have an impact on the overall sanitary sewer system.

STORMWATER MANAGEMENT AND SITE DRAINAGE

Stormwater management and site drainage for the proposed townhouse development must comply with the standards of the Municipality of West Grey and the requirements of the County of Grey as it will use Grey County owned storm sewers.

Pre-consultation discussions regarding the proposed development were undertaken with the County of Grey. The recommended stormwater strategy for the development based on these discussions required the post development peak flows from the property to be less than or equal to the pre-development peak flow conditions.

2.2 Existing Drainage Conditions

Runoff from the site currently drains overland to reach Forler Street or Queen Street. There is drainage ditch on the east side of the property that conveys runoff from properties to the south to the Queen Street Storm Sewer system.

The runoff that reaches Forler Street is collected in the existing 400mm diameter storm sewer on that street. Any runoff that does not reach Forler Street is conveyed via the existing ditch on the east side of the property to an existing storm sewer on Queen Street. Both storm sewers meet at the intersection of Queen Street and Forler Street and are conveyed west along Queen Street.

Based on the previous use of the property, the majority of the site is a gravel parking lot and the former building location. Approximately 2,450 m^2 is impervious area.

Using the Rationale Method and the Mount Forest IDF parameters, the peak runoff to the Queen Street and Forler Street intersection is:

- 5 Yr Storm – 32 L/s
- 100 Yr Storm – 49 L/s

The peak runoff to the existing ditch is:

- 5 Yr Storm – 31 L/s
- 100 Yr Storm – 48 L/s

2.3 Proposed Drainage Conditions

The proposed stormwater drainage plan for the development is continue draining the site as well as the upstream external catchment area towards Forler Street and Queen Street. The lots will be split drainage lots with approximately half of the lot draining towards Queen Street and the other half draining to the rear of the lot. The grading adjacent to the proposed rear yard creates a natural swale that directs the runoff to the existing ditch. This runoff pattern will be maintained.

A ditch inlet catchbasin will be installed in the existing drainage ditch to ensure the upstream lands continue to drain to Queen Street. The grading will ensure that the overland flow route is also maintained.

The proposed development will decrease the overall imperviousness to approximately 1,430 m^2 therefore there will be a significant reduction in the runoff from the site in all storm events.

Using the Rationale Method and the Mount Forest IDF parameters, the peak runoff to the Queen Street and Forler Street intersection is:

- 5 Yr Storm – 22 L/s
- 100 Yr Storm – 34 L/s

The peak runoff to the existing ditch is:

- 5 Yr Storm – 22 L/s
- 100 Yr Storm – 33 L/s

Based on the above, there is no need for any on site SWM measures as the increase in pervious area will result in decreased runoff from the site. The flow patterns from the site are being maintained and all runoff from the site will confluence at the intersection of Forler Street and Queen Street in the existing storm sewer system.

The Municipality previously undertook a storm sewer capacity study, which will still be relevant due to the lack of development in this area of Neustadt. There has been no new development in this area and when the study was undertaken, the site was mainly impervious, therefore the redevelopment of this site to a residential usage with the increase in pervious area will provide additional capacity for the storm sewers.

3.0 UTILITIES

The proposed development is proposed to be serviced with telephone, cable TV and power. There is existing infrastructure for the above utilities at the site.

Site Plan circulation and coordination with the various utility companies is currently being undertaken to confirm servicing layout requirements.

4.0 CONCLUSION

Based on the proposed servicing design that is outlined above, we conclude that the proposed development can meet the servicing and stormwater management requirements of the Municipality of West Grey and County of Grey.

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

Yours truly,

Travis Burnside, P.Eng.
Director

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