

FUNCTIONAL SERVICING REPORT

900 County Road 6 South PROPOSED PLAN OF SUBDIVISION

PART OF NORTH HALF OF LOT 14, CONCESSION 4

TOWNSHIP OF TINY
COUNTY OF SIMCOE

August, 2023

Prepared for:

West Ridge Development Corporation

Prepared by:

ConSALtech
ENGINEERING SOLUTIONS

1249 Marshall Road, Tiny, Ontario, LOK 2E1

705-722-1878

Executive Summary

This Functional Servicing Report has been commissioned by West Ridge Development Corporation to examine the servicing requirements for a proposed residential development in the Township of Tiny.

The West Ridge Development Corporation proposal includes for the development of 14 single family residential lots and 1 hamlet commercial lot on approximately 5.42 hectares of land situated west of County Road 6 South and south of McKenzie Street in the hamlet of Wyevale. The lands are currently designated Future Development within the Township of Tiny Official Plan which permits development of the lands.

In keeping with the current development policies of the Township and the Provincial Policy Statement, it is proposed that the development be serviced by private individual wells and private individual Class IV sewage systems on each lot.

The stormwater management scheme proposed will promote infiltration as the primary means of controlling runoff on the individual lot. The proposed road system will drain to a stormwater management facility to be constructed within Block 1. Based on the high permeability of the native soils, all runoff directed to Block 1 will be detained and allowed to infiltrate.

A Traffic Impact Brief completed to examine the impact of the proposed development on the adjacent transportation system has concluded that the development can be safely accommodated.

Secondary utilities are available in the immediate vicinity.

The Functional Servicing Report provides a preliminary outline of the servicing schemes proposed. The concepts presented will be developed further through consultation with the Township and other affected agencies.

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FUNCTIONAL SERVICING REPORT 900 COUNTY ROAD 6 SOUTH TOWNSHIP OF TINY

1.0 Introduction:

1.1 Appointment

ConSALtech Engineering Solutions has been retained by West Ridge Development Corporation to prepare a Functional Servicing Report to examine the servicing of a proposed residential development located in Part of the North half of Lot 14, Concession 4, Township of Tiny. The report is intended to examine and identify the servicing requirements of the development proposal.

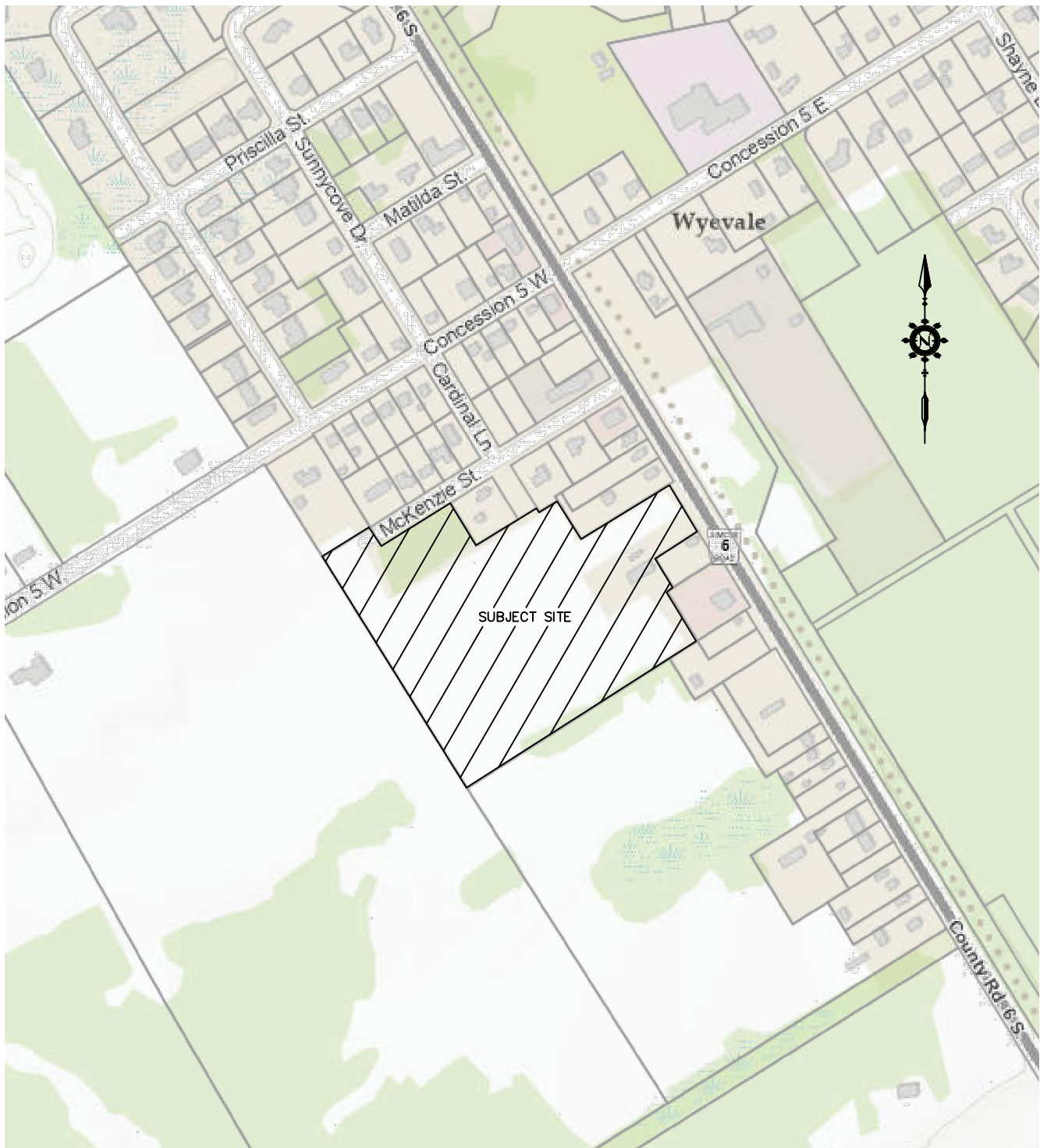
This report will be submitted to the Township of Tiny, the County of Simcoe, and various agencies in support of an Application for a Plan of Subdivision for the subject property.

1.2 Location and Description of Study Area

The subject lands are legally described as Part of William Street and Part of Albert Street and Part of Firstbrook Avenue, west side of King Street, Registered Plan 327 and Part of North Half of Lot 14, Concession 4, Township of Tiny, County of Simcoe. The subject site consists of approximately 5.42 hectares (Ha) of land which are currently designated Future Development in the Township of Tiny Official Plan. The Future Development designation permits development of the lands for residential uses.

Figures No. 1 (overleaf) have been included to illustrate the site location.

The subject site is situated in the southwest quadrant of the Hamlet (settlement) of Wyevale. The site is bounded by County Road 6 South, existing residential and commercial development to the east, vacant agricultural lands to the west, existing residential development to the north and existing residential development and vacant lands to the South.



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Engineering Solutions

1249 Marshall Road, Tiny, Ontario, L0K 2E1
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SITE LOCATION PLAN

900 COUNTY ROAD 6 SOUTH

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| Scale | N.T.S. | Figure No. | FIGURE No.1 |

1.3 Study Scope

This Functional Servicing Study has been commissioned to identify the servicing requirements for the development of the subject lands. This report will identify the specific services required to support the development proposal including water supply, sanitary sewage disposal, stormwater management, transportation, and secondary utilities.

Layout of the general servicing will also be identified on a conceptual basis.

1.4 The Development Proposal

This proposal includes for the development of 14 single family residential lots, 1 hamlet commercial lot and 1 stormwater management block on approximately 5.42 hectares of land.

More specifically, the proposal includes 14 single family residential lots (lots 1 through 7 and 9 through 15) fronting a proposed extension of McKenzie Street. The proposed lot will range in size from approximately 2000 m² to greater than 5770 m². Frontages range from 30m to 80 m. Access to the residential lots will be from the proposed internal road extension.

Lot 8 is intended to be zoned Hamlet Commercial in keeping with a complete community development approach and the Township Zoning By-Law. Lot 8 has 50.3 m frontage on County 6 South and an area of 3423.6 m². Lot 8 will be accessed from the County road.

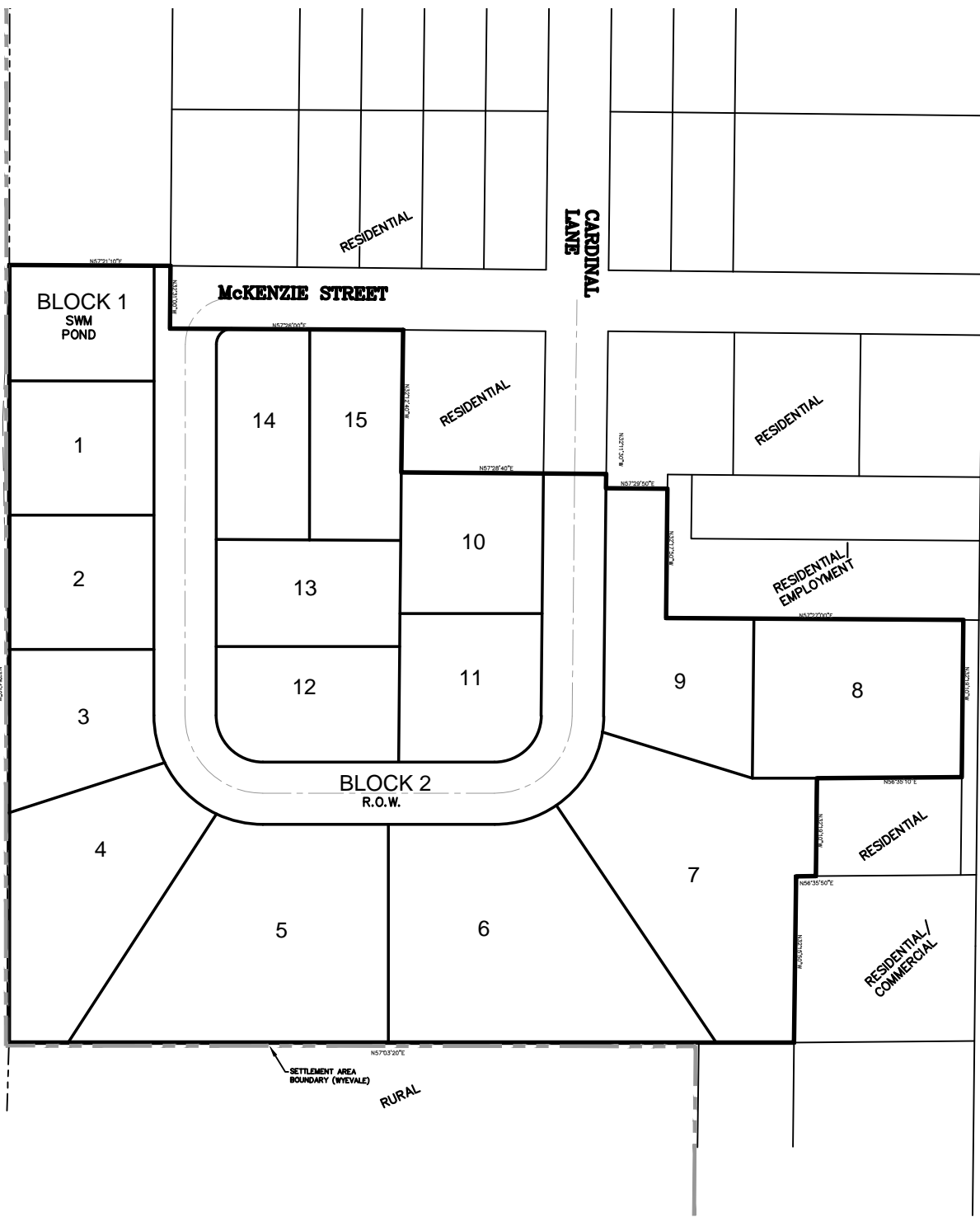
Block 1 situated in the northwest corner of the subject site will be developed as a stormwater management facility. The block is 1715 m² in area with 37m frontage on the proposed road extension.

Upon registration of the Plan of Subdivision, ownership of the internal road (right of way) and Block 1 will be transferred to the Township of Tiny.

The examination of servicing options for the development will have regard for the Provincial Policy Statement.

The proposed extension of McKenzie Street will be designed to conform to the Township of Tiny Engineering Design Standards and will have regard for the County of Simcoe's requirements for the movement of garbage collection equipment.

Figure No.2 (overleaf) illustrates the development proposal.



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DEVELOPMENT CONCEPT PLAN

900 COUNTY ROAD 6 SOUTH

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2.0 Background

2.1 Information Review

The following information has been referenced or incorporated into this report during its preparation:

Township of Tiny Official Plan

Township of Tiny Zoning By-Law

Township of Tiny Engineering Standards

Ontario Ministry of the Environment – Stormwater Management Planning and Design Manual, March 2003

Ontario Building Code

Hydrogeological Assessment, Tatham Engineering, 2023

Stormwater Management Brief, ConSALtech Engineering Solutions, 2023

Traffic Impact Brief, ConSALtech Engineering Solutions, 2023

2.2 Natural Environment

The subject lands consist primarily of vacant agricultural land currently used for limited rotational crops. A narrow band of coniferous trees are present along the southern boundary of the property as well as a portion of the northern boundary adjacent to McKenzie Street.

The Soil Map of Simcoe County (North Sheet) indicates that the soils at this location are predominantly Wyevale - Gravelly Sandy Loam, a grey non-calcareous gravel outwash of the Podzol Great Soil Group with good drainage (Hoffman and Richards 1984).

During a pre-consultation with the County of Simcoe and the Township of Tiny in 2019 and 2021 it was determined that further environmental investigation at this location was not warranted.

2.3 Hydrogeology

Tatham Engineering was retained to complete a review of the local strata for the purposes of confirming the supply of groundwater to service the proposed development and to review the capability of the subject lands to support development based on individual septic systems. The results and recommendations of the work completed by Tatham Engineering will be referenced and incorporated in later sections of the report.

A copy of the Tatham Engineering Report has been included as Appendix “C”.

3.0 Servicing

3.1 Timing and Phasing

It is anticipated that this development will be completed in one phase.

3.2 Water Supply

Tatham Engineering was retained to complete a hydrogeological assessment of the subject lands in accordance MECP Guideline D-5-5 to determine the if servicing the subject proposal with individual wells was feasible.

Based on the review of existing well records within 500m of the subject site, 63 recorded wells were identified. The records indicate the presence of 4 aquifers at increasing depths.

Test well TW-1 was constructed at the site in 2020 by Allan Wright Well Drilling, a licensed well driller in Ontario. TW1 was test pumped to assess supply rates and sampled to assess water quality. Based on the assessment completed, it was concluded that 14 residential lots and 1 hamlet commercial lot can be adequately serviced by individual private wells developed in the lower aquifer. All water quality parameters were found to meet the Ontario Drinking Water Standards, Objectives and Guidelines. Concentrations of Sodium were found to be approximately 61.3mg/l which is well below the aesthetic objective of 200 mg/l established by the standard. However, the standard recommends that the Medical Office of Health be notified when the sodium concentration exceeds 20 mg/l so that this information may be communicated to local physicians for their use with patients on sodium restricted diets. Future homeowners will be advised of the sodium concentrations that

may be present in the drinking water and persons on sodium restricted diets may wish to install treatment to attenuate the sodium concentration.

It is recommended that two additional test wells be constructed and tested to provide further confirmation of the water supply prior to final registration of the plan of subdivision. It is recommended that this requirement be included as a condition of Draft Approval.

During the construction of proposed private individual drilled wells care shall be taken to ensure that a 15m minimum separation between wells and all private sewage system components is maintained.

3.3 Wastewater Collection and Treatment

3.3.1 Hydrogeological Assessment

As outlined previously, it is proposed that the subject lands be serviced by individual private sewage systems. In considering this form of sanitary servicing, an evaluation in accordance with the MECP Policy D-5-4 must be completed to ensure that the proposed sewage systems will not impede the use of the groundwater for domestic purposes at and beyond the down gradient property boundary. More specifically, the Policy D-5-4 assessment considers nitrates as the key indicator of impact to groundwater and the nitrate concentrations at the down gradient boundary cannot exceed the Ontario Drinking Water Standard of 10 mg/L.

Tatham Engineering was retained to complete a Hydrogeological assessment in accordance with MECP Policy D-5-4 and based upon the background nitrates measured in samples taken from several on-site test pits and considering the dilution available from infiltration a total of 14 residential lots and 1 hamlet commercial lot can safely be accommodated on the subject lands. A copy of the Tatham Engineering report has been reproduced and included as Appendix “C” for reference.

3.3.2 Individual Septic Systems

The hydrogeological investigations completed on site included the excavation of nine (9) test pits to confirm the soil conditions at the site. The test pits were excavated to depths from 1.8 to greater than 5m. Standpipes were installed in test pits 5 and 8. Based on the results of the test pitting, the soils across the majority of the site consist of fine to medium grained sands, with slightly siltier sands in southeast portion of the site. A water table or evidence of a seasonally high water table was not

encountered at 8 of the 9 locations. Groundwater was noted in test pit/standpipe 8 at a depth of 1.1mbg.

Based on the foregoing soils information and water table elevations, conventional in-ground Class IV septic systems are expected to functional well throughout the majority of the site. Lots situated in the southeast corner of the site (test pit 7 and 8) were finer grained soils where encountered may need to be partially raised.

The construction of each private septic system will be subject to the provisions of the Ontario Building Code which governs the design and installation of sewage systems servicing less than 10,000 Litres per day. Further test pits and confirmation of soil conditions will be required at each lot in order to confirm groundwater elevations and percolations rates during the design and approval of the individual septic systems.

Care shall be taken during the design and siting of the individual sewage systems to ensure that all regulatory setbacks and specifically setbacks from any existing or proposed wells are maintained.

3.4 Grading and Storm Drainage

3.4.1 Site Grading

The existing site topography is primarily gently rolling and generally falls to the northwest at approximately 0.5% slope.

The existing ground cover consists primarily of cultivated cropland with small softwood forested areas along the south boundary and a portion of the northern boundary.

It is proposed that the natural drainage patterns be maintained to the highest degree reasonably possible and that grading within the proximity of proposed residential units be designed to conform to the Township Standards. A LID (low impact development) approach will be adopted to enhance runoff water quality and to promote infiltration. Site specific deviation from the Township Standards may be explored during detailed design, subject to the approval of the Township Engineer.

3.4.2 Storm Drainage - General

A Stormwater Management (SWM) Brief has been prepared for the subject site and will be submitted under separate cover in conjunction with this Functional Servicing Study.

Based on the existing topography at the site as well as the high permeability of the in-situ soils and low density of the development proposed, the SWM Brief has determined that a relatively small increase in runoff will occur as a result of the development of the site. The SWM Brief further concludes that control of storm runoff from the proposed development can be achieved on each individual lot and block by implementing LID techniques and on-site infiltration.

Roadside ditches will be established in accordance with the Township Design Standards to drain the road base and control runoff from the road surface and boulevard. Runoff collected in the roadside ditches will be conveyed by gravity drainage to a stormwater facility to be constructed with Block 1 situated in the northeast corner of the site. Based on the soil conditions at the site, storm runoff will be detained and infiltrated within Block 1 such that predevelopment runoff is equal to or less than post development runoff.

3.4.3 Erosion and Sediment Control during Construction

Erosion and Sediment control during and following construction shall conform to the Township of Tiny Engineering Standards.

Erosion and sediment controls during construction shall consist of the silt control fences, check dams and sediment traps. All sediment and erosion control measures described above shall conform to the Township standard details incorporated in the detailed design drawings for the development.

Efforts shall be taken to reduce the limit and duration of disturbed areas. Disturbed areas shall be re-vegetated as soon as reasonably possible following work in that area. Runoff shall be controlled at all times and the incorporation of additional swales and check dams may be required to reduce/eliminate the transportation of sediment.

During construction, care shall be taken to ensure that work proceeds in conformance with the approved Erosions and sediment Control Plan.

3.5 Transportation

3.5.1 General

The development proposal for the subject lands includes an extension of McKenzie Street from its current termination point at the property limits to wrap back eastward to reconnect at the

intersection of McKenzie Street and Cardinal Lane. In total, approximately 425m of road is proposed.

The extension of McKenzie Street will be constructed in accordance with the Township Standards including 1.2m gravel shoulders and a 6.7m asphalt road surface within a 20.0m right of way. Based on pre-consultation comments received from Township staff, a asphalt should may be considered on along the south side of the existing portion of Mackenzie Street from it western limit to the intersection of McKenzie Street and Cardinal Lane in order to improve pedestrian access to the hamlet core.

Individual residential units will be accessed by private driveways. Corrugated steel culverts in accordance with the Township Standards and sized appropriately to convey the 5 year storm will be provided for each proposed driveway. Road crossing culverts as required will be sized to convey the 25 year storm.

Access to Lot 8 (hamlet commercial) will be from County Road 6 South. The County of Simcoe through the pre-consultation process has confirmed that access from the County Road to Lot 8 will be permitted for commercial purposes.

3.5.2 Traffic Impact Brief

A Traffic Impact Brief has been competed to assessment of the impact from the additional traffic generated by the proposed development. The Traffic Impact Report will be submitted under separate cover to support the subject application.

In general, the Traffic Impact Brief concludes that the existing transportation network in the vicinity of 900 County Road 6 South has sufficient capacity to accommodate the traffic increase and that the level-of service at all intersections will remain high.

3.6 Secondary Utilities

Existing overhead power is present on County Road 6 South and McKenzie Street. We are awaiting confirmation from Hydro One Networks Inc. that the existing overhead hydro has sufficient capacity to accommodate the new residential units proposed. Bell and cable are also available on County

Road 6 South and McKenzie Street and confirmation of capacity to service this development is being explored.

Enbridge Gas has indicated that natural gas is also available in the immediate vicinity of the development.

Should improvements or upgrading of the secondary utilities be required in order to serve the proposed development, the assignment of costs to the developer or the utility shall be addressed within the individual development agreements entered into with the individual utilities.

3.7 Fire Protection Services

During pre-consultation with the Township of Tiny, West Ridge Development Corporation was advised that the municipality will require that the development incorporate provisions to enhance fire protection for the proposed development.

The municipal water distribution system does not service this quadrant of the community and therefore the options for enhanced fire protection include the provision of a storage reservoir and supply accessible by the Township Fire Services or the inclusion of dedicated private individual fire suppression systems (sprinklers) within each proposed dwelling. At this time, West Ridge Development Corporation are exploring these options. A final decision and details will be made during the detailed design stages in consultation with Fire Services staff.

4.0 Conclusions

This Functional Servicing Report has been developed to examine the servicing requirements of a proposed 15 lot, residential development proposed West Ridge Development Corporation.

The analysis and conceptual design outlined in this report demonstrates that the servicing of this proposed development is feasible, and when based on sound engineering principles it will become a cohesive part of the community.

The Functional Servicing Report is intended to provide a preliminary outline of the servicing schemes proposed. The concepts presented will be developed further during detailed design through consultation with the Township and other affected agencies.

The adoption of this report by the Township and the reviewing agencies will allow the development to proceed in a coordinated and responsible manner.

All of which is respectfully submitted,

ConSALtech Engineering Solutions

A handwritten signature in black ink, appearing to read 'Shayne Large', with a long horizontal flourish extending to the right.

Shayne Large, CET

A handwritten signature in black ink, appearing to read 'Robin Smith', with a long horizontal flourish extending to the right.

Robin Smith, P.Eng