TRITON ENGINEERING SERVICES LIMITED
Consulting Engineers

Memorandum

DATE:	June 7, 2024
TO:	Colin Baker
FROM:	Dustin Lyttle / Ray Kirtz
RE:	Centre Wellington Fergus & Elora Development Lands (Parcels) Assessment of Serviceability
FILE:	A6785A

Introduction:

The County of Wellington and Township of Centre Wellington has received a request to expand the Municipal Urban Boundary of Centre Wellington to include several development land parcels (parcels) in and around the areas of Fergus and Elora, as reflected in "*Figure 1 – Developable Land Area"* (attached). The figure is based on the County of Wellington Committee Report *"County Official Plan Review – Urban Boundary Expansion Review"* dated February 8, 2024, also attached for reference.

To screen and evaluate where the urban expansion is viable, the identified parcels are being individually evaluated and scored based on several parameters, some of which is the serviceability from a potable water, sanitary servicing, and transportation perspective.

The intent of this memo and the evaluation provided herein is to offer a preliminary and qualitative assessment of the serviceability of each parcel being considered.

**Note: there is an additional parcel, #37, that has been evaluated and scored however due to its location and potential conflicts, has been omitted from this report but will be forwarded separately to the Township/County.*

Evaluation Criteria & Strategy:

This evaluation process recognizes that not all parcels listed are suitable for inclusion into the urban boundary due to lack of services to the development frontage in both the existing or planned scenarios. Therefore, the evaluation has proceeded in two steps: Step 1 goal is to narrow down the parcels to those with existing or prospective services to the subject site, while Step 2 assesses the feasibility and potential of servicing the shortlisted developments. Step 2 utilizes water and sanitary modeling to assess these parcels serviceability and site conditions.

The serviceability of each parcel will be evaluated and scored based on the following process/criteria:

Step 1 – Shortlisting:

Water:

Criteria	Score
Direct Access to Existing Watermain	5
Direct Access to Watermain identified in DC Study (or Capital Works)	3
Direct Access to Watermain within Future Development Area within the Urban Boundary	1
No Access to Existing or Planned Watermain	0

Sanitary:

Criteria	Score
Direct Access to Existing Sanitary Sewer	5
Direct Access to Sewer identified in DC Study (or Capital Works)	3
Direct Access to Sewer within Future Development Area within the Urban Boundary	1
No Access to Existing or Planned Sewer	0

Transportation:

Criteria	Score
Access to Existing Arterial or Collector Roads in satisfactory condition to support development.	5
Access to Future Arterial/Collector or County Roads Identified for improvements in 2020 DC Study	3
Access to Future Arterial/Collector Roads via a Future Development Area which is within the Urban Boundary	1
No Access to Existing or Planned Arterial/Collector Roads	0

Any Development that scores a 0 in any of the above category will not be shortlisted for further evaluation.

Step 2 – Serviceability Assessment:

Water Pressure:

Using the known system operating levels, topography of the various parcels and the expected existing system connections available near to the parcel, the anticipated water pressure will be estimated, and scored as follows:

Criteria	Score
90 – 60 PSI	5
59 – 45 PSI	3
45 – 40 PSI	1
< 40 PSI	0

Water Flow:

The parcels will also be assessed based on access to trunk mains and/or available looping as part of the evaluation. The scoring this will be as follows:

Criteria	Score
Good	5
Fair	3
Poor	0

Sanitary Connection:

The existing topography of the parcel will be assessed to determine if a Sewage Pumping Station (SPS) is expected to be necessary and scored accordingly.

Criteria	Score
SPS Not Expected to be required	3
SPS Expected to be required	0

Sanitary Conveyance (Existing):

The anticipated sanitary loading produced by the parcel will be applied to the nearest available sanitary maintenance hole (MH) within the existing system, under the current conditions within the community. Loading is based on 18.5 ERU/ha.

The parcel will be scored according to its expected impact on the system as follows:

Criteria	Score
Downstream Sewers <100% Full	5
Downstream Sewers >100% Full but upgrade is part of previously identified DC or capital project	3
Downstream Sewers >100% Full and not part of previously identified DC or capital project	0

Sanitary Conveyance (Future):

The anticipated sanitary loading produced by the parcel will be applied onto the nearest MH within the existing or expected future system, considering build-out of other developments that are within the Urban Boundary.

The parcel will be scored according to its expected impact on the system as follows:

Criteria	Score
Downstream Sewers <100% Full	5
Downstream Sewers >100% Full but upgrade is part of previously identified DC or capital project	3
Downstream Sewers >100% Full and not part of previously identified DC or capital project	0

Servicing Grouped Parcels:

Several parcels are situated in close proximity to each other, as such a servicing strategy to accommodate these parcels as a group was considered. This approach allows for consideration of efficient servicing as a group, where individual servicing may not be feasible or cost effective. This approach has been applied to three groups as follows;

Group A; Parcels 2-3

Group B; Parcels 20-24

Group C; Parcels 31-36

Analysis & Results:

The multi-step evaluation is provided in this section.

Step 1 – Results:

37 parcels have been reviewed and assessed during Step 1 of this assessment as listed below and shown on Figure 1, attached.

MCR Designation	Parcel ID	Area (ha)	Score		
			Water	Sanitary	Transportation
SABR-051	1	17.4	3	1	3
SABR-023	2*	32.1	3	1	3
SABR-025	3*	37.0	5	3	3
SABR-037	4	46.8	3	1	3
SABR-059	5	128.6	3	**0**	3
SABR-063	6	31.4	3	**0**	3
SABR-019	7	34.3	3	3	3
SABR-058	8	27.3	**0**	**0**	5
SABR-043	9	26.2	5	5	5
SABR-022	10/11	20.1+16.7	5	5	5
SABR-033/34	12	29.1	5	5	1
SABR-020	13	30.7	5	5	5
SABR-053	14	28.2	**0**	**0**	5
SABR-005	15	6.1	**0**	**0**	3
SABR-065	16	85.0	**0**	**0**	3
SABR-056	17	35.1	**0**	**0**	3
SABR-035	18	33.4	5	5	3
SABR-060	19	38.9	3	3	3
SABR-038	20*	35.7	3	3	3
SABR-039	21*	35.0	3	3	3
N/A	22*	16.3	3	3	5
N/A	23*	16.0	3	3	5
N/A	24*	33.1	3	3	3
SABR-026	25	19.1	5	5	5
SABR-026[#]	26	0.7	5	**0**	5
SABR-036	27	12.7	**0**	**0**	3
SABR-009	28	6.4	**0**	**0**	3
SABR-007	29	7.9	5	5	3
SABR-006	30	2.0	5	5	3
SABR-061	31*	37.5	5	5	3
SABR-062	32*	21.7	5	5	3
N/A	33*	19.2	5	**0**	3
N/A	34*	18.1	5	**0**	3
SABR-040	35*	23.8	5	**0**	3
N/A	36*	35.7	**0**	**0**	3
SABR-064	-	**REFER TO SEPARATE MEMO**			

Notes:" **#"** - 25/26 were combined in SABR-26.

"*****" – Parcels that were also evaluated as part of a Group.

Step 2 – Results:

As discussed above, Step 2 of this assessment has reviewed the feasibility and site conditions of water/sanitary servicing for the parcels, these are provided in the below table. Step #1 transportation score has been included in the Total Score to ensure a transportation component has been included in the evaluation.

MCR Designation	Parcel ID	Water		Sanitary Connection	Sanitary Conveyance		Transportation Score (from Step 1)	Total Score
		Pressure	Flow	Gravity or SPS	Existing	Future		
SABR-051	1	3	3	0	0	0	3	9
SABR-023	2	1	3	0	0	0	3	7
SABR-025	3	1	5	3	0	0	3	12
SABR-037	4	3	3	0	0	0	3	9
SABR-019	7	3	5	3	5	5	3	24
SABR-043	9	0	5	3	5	5	5	23
SABR-022	10/11	1	5	3	5	5	5	24
SABR-033/34	12	3	5	0	5	5	1	19
SABR-020	13	3	5	3	5	5	5	26
SABR-035	18	1	5	3	5	5	3	22
SABR-060	19	1	3	0	3	3	3	13
SABR-038	20	1	3	0	3	3	3	13
SABR-039	21	3	3	0	3	3	3	15
N/A	22	3	3	0	3	3	5	17
N/A	23	3	3	0	3	3	5	17
N/A	24	3	3	0	3	3	3	15
SABR-026	25	3	5	0	5	3	5	21
SABR-007	29	3	3	3	5	5	3	22
SABR-006	30	3	3	3	5	5	3	22
SABR-061	31	5	5	0	0	0	3	13
SABR-062	32	5	5	0	5	5	3	23
SABR-064	-	**REFER TO SEPARATE MEMO**						

Servicing Grouped Parcels - Results:

The following provides insight into the possible servicing strategies applicable to the various parcel groups considered. It does not strictly consider the property boundaries of each parcel, rather to aims to formulate an efficient strategy for the group area as a whole.

Group A; Parcels 2 & 3

Group A has a total area of 49.5 ha.

Water servicing could be accommodated by proposed watermain extensions/connections to existing/proposed adjacent developments.

Sanitary servicing is more challenging as this area has not been previously included in the sanitary servicing strategy for Elora. A portion of this area (approximately 50% of the area, 24ha) could potentially be serviced by gravity to the existing sanitary sewer on Irvine. However, available capacity downstream of the Irvine outlet is limited. Preliminary review would indicate that only a portion of these areas could be accommodated unless significant upgrades are made. A more detailed analysis would be required to confirm the extent of upgrade requirements. The remainder of the Group A area that could not be conveyed/accommodated by the Irvine outlet would need to be pumped. Pumping this additional area to the existing/proposed sewers that are tributary to the downtown core is not viable as there would not be sufficient available capacity. Additionally, the concern with this servicing strategy (i.e. gravity or pumped to the existing Irvine/Walser/Ainley sewers) is that this flow will be directed through the core of the system utilizing much of the remaining capacity of trunk sewers, Grand River

syphon and Clyde SPS. Given the trend toward intensification, especially in downtown areas, it is critical that capacity is kept available in critical sanitary infrastructure to accommodate this intensification.

An alternative servicing strategy may need to be considered. This could include routing all/most of Group A area to a central SPS located near SDRD 15/Nichol Drain 1 and from there pumping it to a receiver (i.e. sewer, SPS) which would bypass the core. Possibly this area could be directed to an upgraded David SPS which would intern direct flows to the WWTP bypassing the critical core infrastructure. Utilizing the Bricker sewer through Elora Meadows and down Erb Street Salem was investigated. For the most part, this sewer route has available capacity except for the low end of Erb which may need to be upgraded. This strategy would also depend on the upgrading/rerouting of the David SPS along with some additional sewer on David Street. Although this strategy would involve significant infrastructure upgrades, it would preserve, even increase available capacity in the core of Elora. Details and feasibility of this strategy would need to be confirmed.

Ultimately, a combination of these two strategies may be the preferred approach to accommodate the entire Group A area.

Group B; Parcels 20-24

Group B has a total area of 136.1 ha.

Water servicing could be accommodated by proposed watermain extensions proposed as part of the South Fergus Secondary Plan (SFSP).

Sanitary servicing would need to be accommodated through the SFSP sanitary collection system which would extend sewers to Second Line. Although sewers at Second Line would be kept as deep as feasible, it is expected that only the Group B area near Second Line and west of Highway 6 could be serviced by gravity, estimated at approximately (49 ha). The remainder of the Group B area to the south would need to be pumped. It is envisioned that a SPS would be located near the southwest corner of the area which would collect the remainder of Group B area that is not collected by gravity. This SPS would convey sewage flows to one of the SFSP sewers that would be sized to accommodate this. This strategy depends on the proposed SFSP infrastructure considering the Group B development area as part of the detailed design since no other servicing options as available.

Group C; Parcels 31-36

Group C has a total area of 156.0 ha.

Water servicing could be accommodated by extensions from the existing First Line watermain.

Sanitary servicing for this entire area has not been previously included in the sanitary servicing strategy for Elora. Only a small portion of this area (approximately 30 ha in Parcels 31/32) could be serviced by gravity to existing sanitary sewer on Spencer, the collection system downstream of this could accommodate these flows. The remainder of the Group C area would need to be pumped. Pumping this additional area to the Spencer sewer is not viable as there would not be sufficient available capacity. Additionally, the concern with this servicing strategy (i.e. using the existing sewers) is that this flow will be directed through the core of the system utilizing much of the remaining capacity of trunk sewers and Clyde SPS. Given the trend toward intensification, especially in downtown areas, it is critical that capacity is kept available in critical sanitary infrastructure to accommodate this intensification. It is envisioned that a SPS would be located near the southwest corner of the area which would collect the remainder of Group C area that is not collected by gravity. To avoid discharging into the central sewer system, a forcemain would need to be extended to the WWTP.

Conclusion:

This assessment provides a preliminary and qualitative assessment of the serviceability (water, sanitary, transportation) of each parcel with respect to the other parcels being considered for inclusion in the Urban Boundary for future development.

Serviceability will be one of several components that the County/Township will consider as part of the overall assessment of a parcel's suitability for inclusion for an Urban Boundary expansion. Once the parcels have been shortlisted through the overall assessment process, additional review of serviceability details may be required.

FIGURE 1

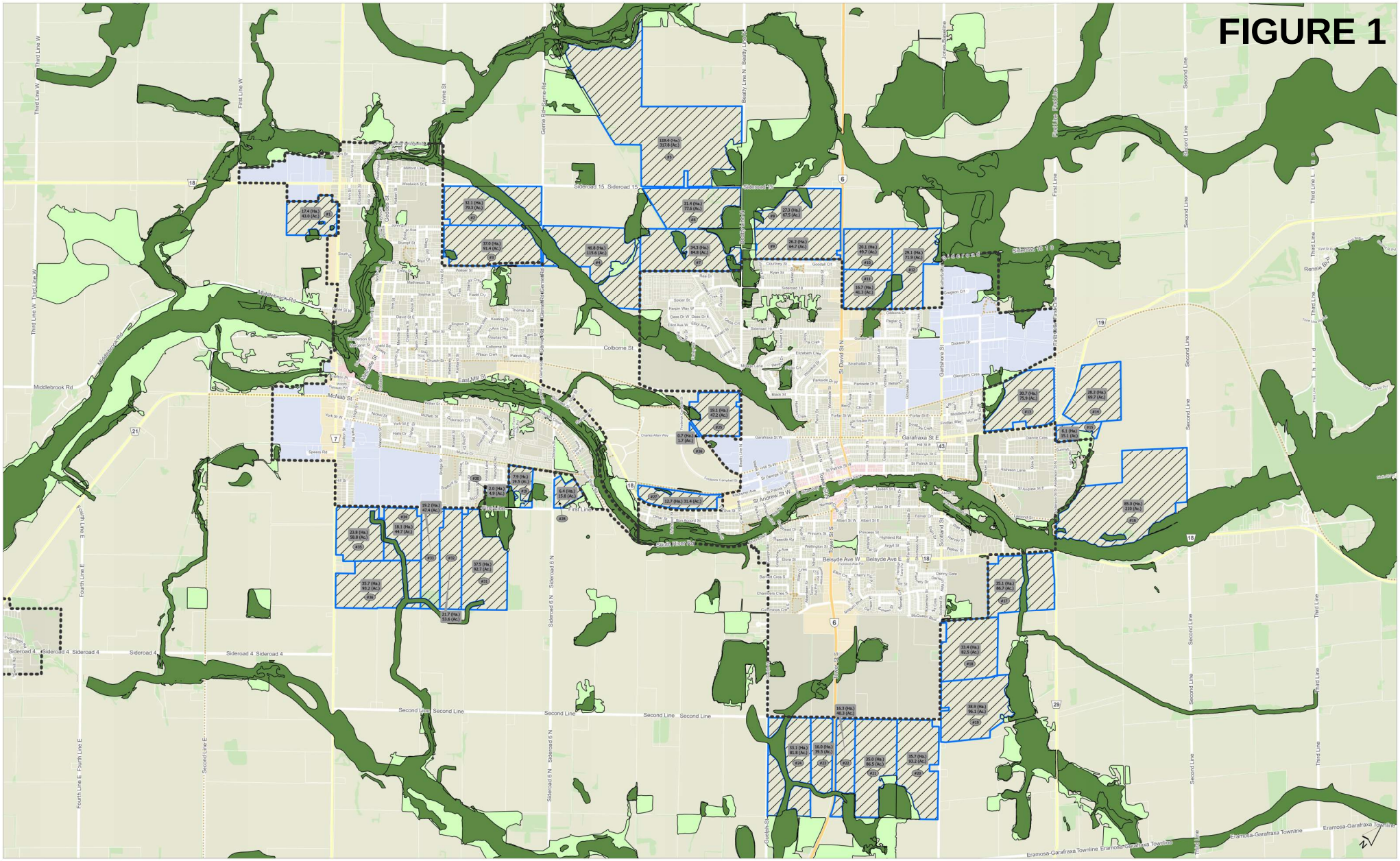
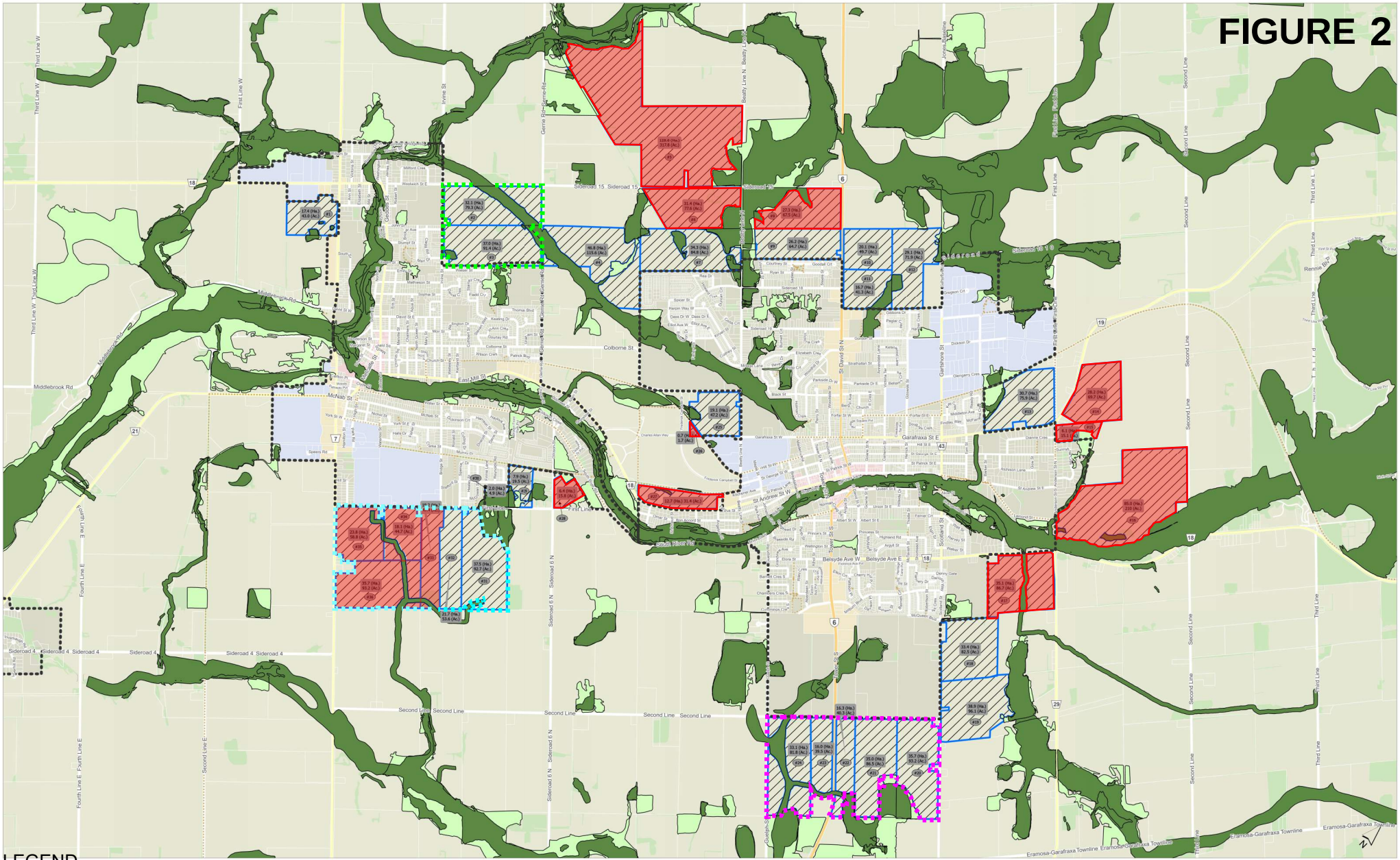

Developable Land Area
Urban Centre Boundary
Core Greenlands
Greenlands
Vacant Land
#1-30 Parcel ID
Colborne St
East Mill St
McNab St
Garafraxa St E
St Andrew St W
Belsyde Ave W
Belsyde Ave E
South River Rd
Middlebrook Rd
Second Line
Third Line
Fourth Line E
Sideroad 4
Sideroad 15
Eramosa-Garafraxa Townline

FIGURE 2


LEGEND
Urban Centre Boundary
Core Greenlands
Greenlands
Vacant Land
#1-30 Parcel ID
Invalidated from Step 2
Group A
Group B
Group C