Appendix A

Documents Summary

32874-000 Black Bear Ridge Development Design Basis Memorandum
Appendix A - Document Summary

Title	Category	Description	Issue Date	Prepared By	Key Findings
ECA - Belleville WPCP - 2178-B2ZLM8	Wastewater	Amended ECA for Belleville Water Pollution Control Plant ECA No. 2178-B2ZLM8	May 30, 2019	Ontario Ministry of Environment, Conservation and Parks	Rated Capacity = 54,500 m3/d. The Latest ECA includes proposed works for the Front Street SPS, as well as a Supplementary Treatment System and Sludge Management System at the BWPCP.
City of Belleville MCR Final Report	Planning	Municipal Municipal Comprehensive Review of Serviced Area	August 12, 2019	Watson & Associates Economists Ltd.	Belleville Land Supply for residential and ICI lands study.
Municipal Drinking Water Licence	Water	Municipal Drinking Water Licence No. 151-101	December 16, 2020	Ontario Ministry of Environment, Conservation and Parks	Permit to Take Water at Bay of Quinte. Permit No. 6883-9KRK5R. WTP Rated Capacity = 72,700 m3/d
Drinking Water Works Permit	Water	Permit Number 151-201 Issue No. 4 Drinking Water Works Permit for Belleville Drinking Water System	December 16, 2020	Ontario Ministry of Environment, Conservation and Parks	•System description and schematic of Belleville Drinking Water System which consists of the Gerry O'Connor Water Treatment Plant, one (1) booster pumping station, three (3) in-ground storage reservoirs, one (1) elevated storage tank, and 213 km of watermains. •Surface water intake at the Bay of Quinte
Development Charges and Background Study	Planning	Recommends new development charges and policies for the City.	October 6, 2021	Watson & Associates Economists Ltd.	Residential Growth forecast is summarized in Table 3-1: •Early 2022 = 2.271 PPU •Early 2032 = 2.207 PPU •Mid 2041 = 2.164 PPU Forecasted 25-year average PPUs by dwelling type are as follows: •Low density = 2.827 •Medium density = 1.846 •High density = 1.663 (Above information superseded by 2022 Watson Report)
2021-12-15 – 10489 – BBR Servicing Feasibility Comments and Memorandum	Planning	Peer review completed by TMIG on the BBR Servicing Feasibility Study (October 2021) by Jewell Engineering	December 15, 2021	The Municipal Infrastructure Group (TMIG)	•Comments on potential additional studies and requirements for recommended projects in the Jewell report (e.g. Class EA, land acquisitions, etc.) •Recommended additional considerations for projected water demand and sanitary demand. •Official Plan process overview to extend the urban boundary.

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BBR Servicing Feasibility Study - final draft	Planning	Study to identify servicing requirements for the Black Bear Ridge Development	February 28, 2022	Jewell Engineering	•Identified water, sanitary, and fire flow requirements for the Black Bear Ridge Development. •Gaps in the analysis completed in this report are summarized in comments provided by TMIG in December 2021.
Infrastructure Phasing Strategy Background Report	Planning	Identifies future studies and servicing requirements to accommodate future development areas within the City. Part 1: Planning Needs Review Part 2: Background Information Review Part 3: Cost Benefit Analysis	March 1, 2022	The Municipal Infrastructure Group (TMIG)	Part 1: Planning Needs Study •Projected sanitary flows and water demands for potential development areas are summarized in Table 1. •Projected growth for the 20-year horizon is 6,400 based on the Official Plan. A review of Official Plan Developments and planning reports indicate a total population potential of 26,837 based on land availability and standard development densities. Part 2: Background Information review •Recommended Water System Upgrades are summarized in Table 2-3, which include a watermains, booster pumping stations and an elevated tank. •Recommended Wastewater System Upgrades are summarized in Table 2-5, which include force mains, gravity sewers, and sewage pumping stations. Part 3: Cost Benefit Analysis •Mapping of proposed new and upgrades to water and sanitary network infrastructure. •Implementation schedule of proposed works.
City of Belleville Council Report – Consideration for Council Support of a Ministerial Zoning Order for Black Bear Ridge	Planning	Council Report for approval of Staff Recommendation to update Official Plan to Conform with Minister's Zoning Order (MZO). Coupled with supporting documents	March 8, 2022	City of Belleville	•City of Belleville approval of Staff Recommendation to support an update of the Official Plan to conform with the Minister's Zoning Order (MZO) to service the Black Bear Ridge (BBR) Resort. Includes the following key attachments: 1.Visioning Brief for BBR Resort 2.Minister Zoning Order and supporting documents. 3.Servicing Feasibility Review, February 2022 by JEWELL Engineering 4.New Official Plan (OP) Policies by Dillon Consulting
Visioning Brief – Black Bear Ridge Village	Planning	A description of land-use within the Black Bear Ridge Development.	March 8, 2022	Biglieri Group	•890 acres for total development area •Riverside recreation area – 15.2 Ha •107 Ha – Environmental Protection •89.2 – Golf-side recreation area •23.95 Ha, 1,437 unit Medium Density Residential Area •64.48 Ha, 1,612 unit Low Density Residential Area
Corbyville – Land Use Allocation	Planning	Spatial land use allocation for Corbyville	April 5, 2023	RFA Planning Consultant Inc.	Landuse planning for corbyville area

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City of Belleville Report No. ENG-2023-22 Capital Budget Item 24-1.001	Planning	Background information on the construction budget for Avonlough Sewage Pumping Station and Conveyance System – Phase 1	December 6, 2023	City of Belleville	Proposed phased upgrades to Avonlough SPS: Phase 1 (2026 to 2034): projected 1800 units serviced. 100L/s peak flow at the pumping station. Phase 2 (2034 to 2045): 5,600 units serviced. 380 L/s peak flow at the pumping station. Phase 3 (Beyond 2045): 9,000 units serviced. 490 L/s peak flow at the pumping station. •Timing of the above phases will be dependent on developments within the Loyalist Secondary Plan area and other developments in the City's north end and northeast Industrial Park. Proposed New Sanitary Sewers include: •Twin 450mm FM from SPS to gravity sewer on Bridge Street West. •825mm diameter gravity sewer on Bridge Street West from Palmer Road to Isabel Street. •600mm diameter FM on Bridge Street West fromghd Isabel Street to Coleman Street. •Interim connection to Moira Pressure Sewer on the west side of Moira River. Includes new pressure sewer on Coleman Street from Bridge Street West to Jane Street. •Decommissioning and diversion of flow from existing Avonlough SPS.
Belleville Water Treatment Plant (BWTP) Treated Water Flows – ES-23-615-B-ii.xls	Water	Excel Document of Daily treated water flows from the BWTP	December 31, 2023	Ontario Clean Water Agency	Data from 2019 to 2023 was used to determine Historic Flows for the design basis report.
WWTP Annual Reports	Wastewater		December 31, 2023	Ontario Clean Water Agency	Reports from 2019 to 2023 were used to analyse historic flows for the design basis report.
WWTP Flows	Wastewater	Excel Documents of daily waste water flows received at the WWTP	December 31, 2023	Ontario Clean Water Agency	Reports from 2019 to 2023 were used to analyse historic flows for the design basis report.
Corbyville – Key Map	Planning	Boundary for Corbyville Area	June 11, 2024	RFA Planning Consultant Inc.	Boundary for Corbyville Area
Elevated Water Tower – Drawing Set	Water	Drawings - Walkway, columns and rods, Cylinder, spiral stairway, foundation plan, location plan & valve house	December 27, 1955	Horton Steel Works Limited	•750,000 Imperial Gallons (3.4 million Liters) Radian Cone Elevated Water Tank •Steel structure with a reinforced concrete foundation •Adress: 40 Hillcrest Ave, Belleville, ON K8N 3E2 (there is another Sydney water tower)
Adam Street WPS – O&M Manual	Water				Adam Street BPS Set points
Adam Street WPS – Control Narrative	Water				Adam Street BPS description and setpoints.
Cannifton Booster Pumping Station Upgrades	Water	Water booster pumping station upgraded with a new engine generator	May 1, 2007	Simcoe Engineering Group Ltd.	•New 200kW diesel engine generator and relevant electrical and mechanical parts including switches, exchangers, exhaust, fuel tank, fill& vent pipes etc. •Location: Northeast of Adam Rd & Cannifton Rd (315l/s @ 8m of TDH now and being renewed and will be completed summer 2025) •Connected with 400mm diameter station supply and discharge and 150mm diameter sanitary sewer
North Park Street Reservoir Drawing Set	Water			Gore & Storrie Ltd.	•9.0ML reservoir, 18ML pumping station, booster pump capacity: 1651.0 USGPM (104.16L/s) •Pump inspected and repaired in July 2017 by IWS Ltd, pump curve available. • Obtained tank dimensions from these drawings
Pine Street Reservoir and Pumping Station Drawing Set	Water				•Obtained Tank Dimensions from these drawings
Brighton Water Treatment Plant Operations Manual	Water	BWTP Operations Manual	January 1, 2001	Belleville Utilities Commission	The O&M Manual was used to obtain overflow water level and bottom useable water level for all storage facilities. Relevant sections referenced are embeded in the design basis report. This was also used to gain an understanding of filling procedures and confirmed with operations staff.
1995 Water Treatment Plant Improvements	Water	Expansion of filters, high lift and admin facilities	July 31, 1995	Gore & Storrie Ltd.	•5 high lift pumps, 2 transfer pumps •Process facilities upgraded •Storage Tank dimensions were obtained from these drawings
1996 Water Treatment Plant Improvements	Water	LLPS. Pretreatment, Flocculation and DAF		CG&S Ltd. (formerly Gore & Storrie Ltd.)	Process facilities upgraded to address water quality challenges like taste, odor, high algae counts, etc.
1998 Water Treatment Plant Improvements	Water	Chemicals, settling, filters and waste treatment		CG&S Ltd.	New chemical area building

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City of Belleville Standard Specifications	Water	Shop drawings and standard specifications for Belleville watermain infrastructure	January 12, 2012	City of Belleville	Contains City of Belleville design guidelines and shop drawings for watermain infrastructure.
Belleville Wastewater Master Plan	Wastewater				The Master Plan identified various upgrades that may be required, but it was ultimately recommended that the City undertake a more in-depth servicing studies and Class Environmental Assessments (Class EAs) for related infrastructure to clearly define the projected future developments, flows, infrastructure upgrade requirements and timing for those upgrades based on a more thorough assessment of existing conditions and constraints and anticipated timing for development. The Master Plan also established additional capital costs and timing that could be used to ensure the City's budgeting and development charges are appropriate to accommodate sustainable growth. This Master Plan will service as the basis of reference for the wastewater conveyance, pumping and treatment components of the Servicing Study.
Memo-2019Water EPANET Model Update-GHD-200513	Water	EPANET Model and GHD Summary Report of City Watermain	May 19 2019	GHD	EPANET 2.0 Models Review, covering data and recommendations for Minimum hour flow, Peak hour flow, Average day flow, Maximum day flow and Maximum day flow plus fire demand. This was used as the base model for 2017 conditions for the water model of the dasign basis report.

Appendix B

Planning Memorandum #1 and #2

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

MEMO

Date: June 20, 2025

To: Nathan Jianopoulos, City of Belleville
Glenn J. McGlashon, McGlashon Planning Consultants

From: Madelen Fellows, M.Pl., J.L. Richards & Associates Limited

CC: Susan Shi, P.Eng., M.Eng., J.L. Richards & Associates Limited

Subject: City of Belleville Black Bear Ridge Servicing Study
Planning Memorandum #1 - Existing Populations (Final Draft)

JLR No.: 32874-000.1

1. Introduction

J.L. Richards & Associates Limited (JLR), was retained to complete a Servicing Study for the Black Bear Ridge Development area in Belleville, Ontario (City). In 2017, JLR undertook a Wet Weather and Wastewater Servicing Master Plan (WW SMP) for the City, which included background information and growth projections to support the Master Plan. To support the upcoming Servicing Study, JLR's planning team have been tasked to identify the spatially distributed existing population, as well as future population projections until 2051. This memorandum provides the existing (2023) spatially distributed population. A subsequent memorandum will be provided to analyze the future population projections within the City of Belleville.

2. Background Information

JLR reviewed a significant amount of information to inform this memorandum, including the following:

- Population, Housing, and Employment Growth Forecast Update by Watson & Associates Economists Ltd. (2022)
- Infrastructure Phasing Strategy Part 1 – Planning Needs Review by TMIG (2022)
- City of Belleville Official Plan, 2021
- Residential Land Supply – 2023
- Building Starts 2021 – 2023 Summary
- City of Belleville 2021 Census Profile, Statistics Canada
- Ongoing conversation with the City

For the purpose of the identifying the spatial distribution of the existing population, the 2021-2023 Building Starts and City of Belleville Census Profile (2021) were primarily used for information.

Based on the information gathered from the City, it was decided that the spatial distribution of the population would be divided by planning areas. The areas have been slightly altered to best represent the spatial distribution of the data. Mainly, Foxboro and Black Bear Ridge were separated from the general rural area and Corbyville was separated from the urban area (labelled as "other" in Figure 1). Bayshore and City Centre were combined to better represent the data from the Census. The final areas have been defined as the following (see Figure 2 for map):

- Urban Area
- Bayshore/City Centre

- Loyalist Secondary Plan Area
- Cannifton
- Corbyville Village
- Foxboro
- Black Bear Ridge

3. Methodology

To get the best understanding of the existing population, the 2021 Census data was used as our main data source, since this is the most recent census data available. JLR's planning and GIS team overlayed the census boundaries with the City's planning areas, and then distributed the census population within the appropriately. In more detailed terms, JLR followed the following process:

- Spatially mapped out this data using the dissemination block boundaries from Statistics Canada. A dissemination block is an area bounded on all sides by roads and/or boundaries of standard geographic areas and is the smallest geographic area for which population and dwelling count data are disseminated.

- The Planning Areas (and Foxboro/ Black Bear Ridge) polygons were used to select all dissemination boundaries that intersect. This provided multiple dissemination boundaries for each planning area, noticing that some dissemination boundaries were fully within the planning areas while others were only partially.

- JLR then used area calculations to assign population for any partial coverage. For any dissemination boundary that was not fully within the planning area, JLR ran an intersect to calculate the actual coverage. The intersect provided a total area for the dissemination boundary inside each planning area.

- Then JLR divided the area from the intersect by the total area of the dissemination boundary to get a coverage percentage.

- Multiplied the 2021 population for each partial dissemination boundary by the planning area percentage to get the population for the area that intersects the planning area.

- JLR then added up all fully within and partial dissemination boundaries to get the 2021 population for each planning area.

Using these boundaries, a spatial allocation of the existing population in the City of Belleville, as of 2021, was established.

JLR then used the 2021-2023 Building Starts, received from the City, to fill in the missing population from 2021-2023. Figure 1 shows the number of starts broken down by planning area and dwelling unit type. Note that "Other" represents area within the O.P Urban Boundary (Corbyville and other urban areas not including Loyalist, City Centre/Bayshore, and Cannifton) and "Rural" represents area outside the O.P Urban Boundary (Foxboro, Black Bear and other rural lands). Land area was used for the rural areas to calculate the population growth. JLR divided the area of each rural planning area (Foxboro and Black Bear) by the total rural area to get a percentage of total area. Then multiplied the total population growth for the rural area by each planning area percent.

Figure 1 shows the building starts broken down by the broader planning areas. As described in Section 2 of this document, these areas were further broken down to better represent key areas of interest, and to most clearly show the spatial distribution of the population.

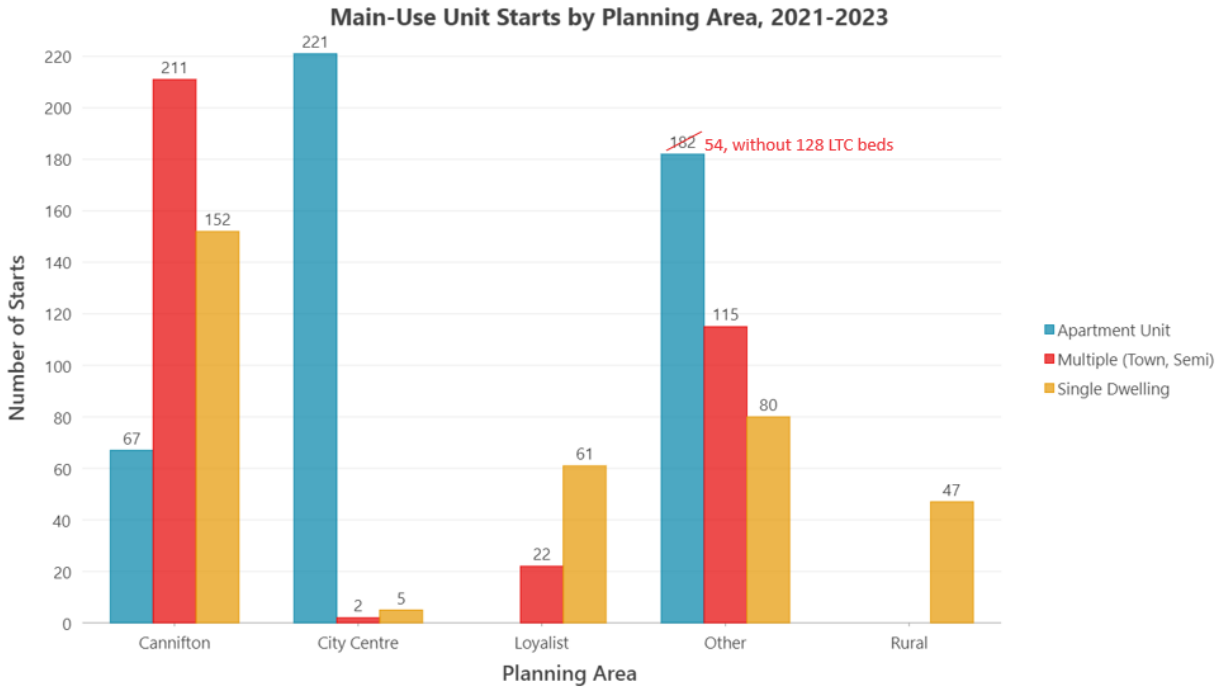


Figure 1 From 2021-2023 Building Starts Summary Provided by the City of Belleville

A persons per unit (PPU) count was then applied to the building starts to get the total potential population in these areas.

The average PPU by dwelling type are as follows:

- Low density at 2.77 PPU;
- Medium density at 2.12 PPU;
- High density at 1.57 PPU.

*The PPU values were taken from the 2017 Technical Memorandum No. 1: Population and Development Projections, dated March 30, 2018 (Rev 1). We acknowledge that the estimated annual PPUs may differ (as shown in the Watson Study), but for the purposes of our time buckets and differing between low, medium and high density, we used the abovementioned PPU values.

The low density PPU was applied to the increased single dwellings to get a population count from 2021-2023.
The medium density PPU was applied to the increased multiple dwellings to get a population count from 2021-2023.
The high density PPU was applied to the increased apartment dwellings to get a population count from 2021-2023.

The building starts with associated PPUs were then distributed into the appropriate area (as explained in Section 2).

The PPU for the 2021-2023 building starts were then added to the initial 2021 population within each area to get the 2023 (existing) population. Note that these values include the Accessory Dwelling Unit (ADU) starts, as identified in the 2021-2023 Building Starts Summary from the City. These values can be seen in Table 1.

Table 1 Population by Planning Area

Name	Calculated Area (ha)	2021 Census Population	2023 Population	2023 Serviced Population
Urban	1,917	36,438	37,292	37,292
Bayshore/ City Centre	354	2,955	3,325	3,325
Loyalist Secondary Plan Area	1,004	2,651	2,894	2,894
Cannifton	1,007	4,450	5,471	5,471
Black Bear Ridge		152	156	-
Foxboro		306	307	-
Corbyville Village (1)		-	-	-
TOTAL		**46,952**	**49,445**	**48,982**
** Counts do not include Statistics Canada under coverage rate**				

4. Conclusion and Next Steps

As shown in Table 1, JLR have calculated the existing population for the seven identified areas using the above methodology. These population values represent our best estimate of the 2023 population of the City of Belleville, using data available. It should be noted that due to inconsistent area boundaries and changing P.P.U. values, the population provided is an estimate. The counts do not include the Statistics Canada under coverage rates, as the up-to-date rates are not available.

For the next memorandum, JLR will look at the population projections through to 2051 for these areas categorized by short, medium and long term time slots. This will build on the work done to date for the existing population and project the short, medium and long term spatially distributed population for the City. This work will be done to support the Civil team's servicing study.

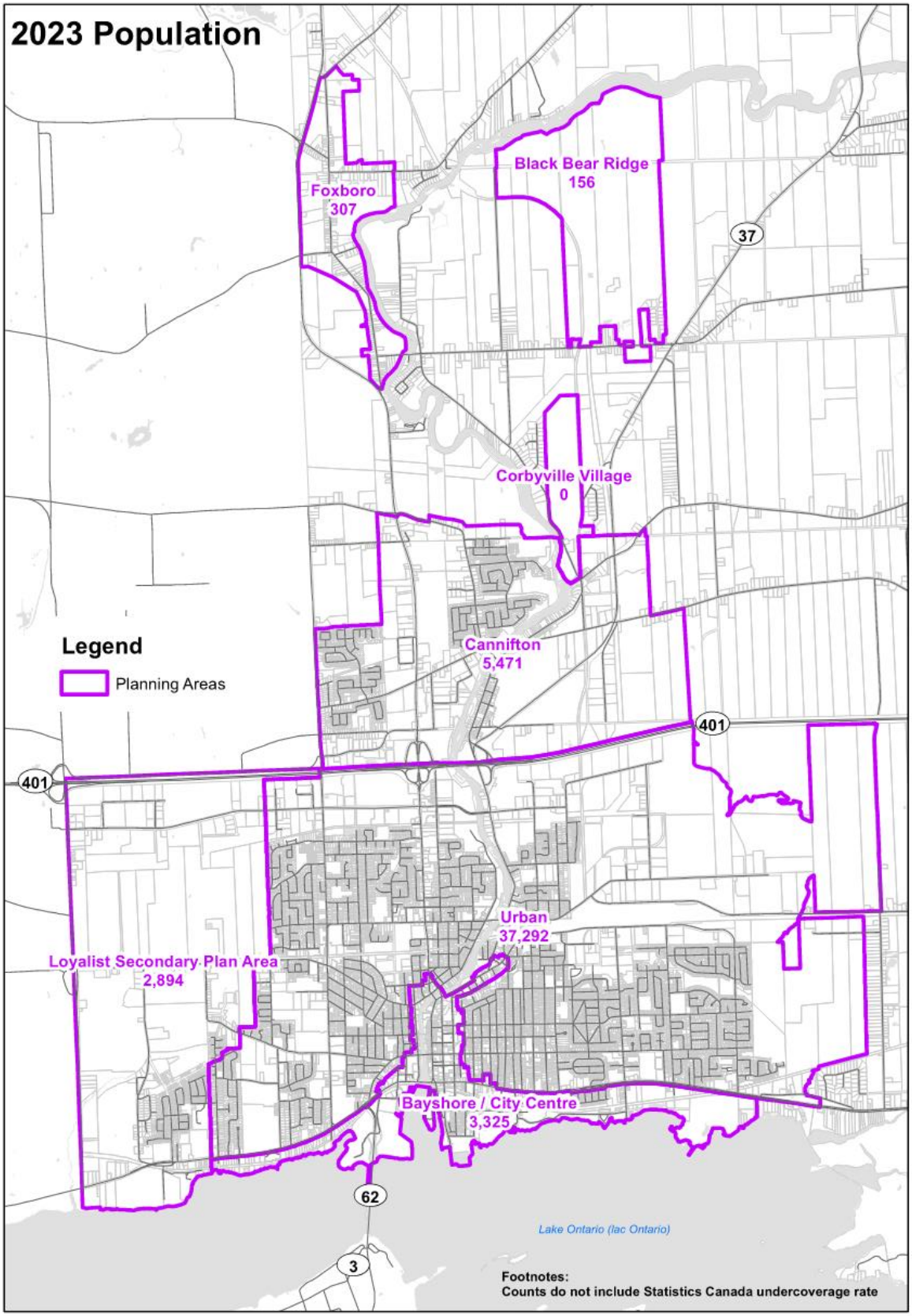


Figure 2 City of Belleville Existing Population by Planning Area

J.L. RICHARDS & ASSOCIATES LIMITED

Prepared by:

Madelen Fellows, M.Pl.
Planner

Reviewed by:

Susan Shi, P.Eng., M.Eng.
Associate, Senior Environmental Engineer

MF:ss

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

MEMO

Date: June 20, 2025

To: Nathan Jianopoulos, City of Belleville
Glenn J. McGlashon, McGlashon Planning Consultants

From: Madelen Fellows, M.Pl., J.L. Richards & Associates Limited

CC: Susan Shi, P.Eng., M.Eng., J.L. Richards & Associates Limited

Subject: City of Belleville Black Bear Ridge Servicing Study
Planning Memorandum #2 – Population Projections (Residential Growth)

JLR No.: 32874-000.1

1. Introduction

J.L. Richards & Associates Limited (JLR), was retained to complete a Servicing Study for the Black Bear Ridge Development area in Belleville, Ontario (City). To support the Servicing Study, JLR's Planning Team has been tasked with identifying the spatially distributed existing and future serviced population of the City of Belleville. Planning Memorandum # 1 provided the existing (2023) spatially distributed population. This memorandum is intended to provide future residential growth projections, including the short-, mid-, and long-term population that will receive water and wastewater servicing.

2. Background Information

JLR worked with the City's Engineering and Development Services Department to identify future population projections, and the design basis. The future population projections have been developed based on the existing (2023) serviced population in Planning Memorandum #1, and using the following additional documents:

- Residential Land Supply, as of December 2023 from the City of Belleville Engineering and Development Services Department
- Development Control Areas, from the City of Belleville
- Black Bear Ridge Draft Plan of Subdivision, June 25, 2024, Biglieri Group
- Corbyville Land Use Allocation Plan, April 5, 2023, R.F.A Planning Consultant Inc.
- City of Belleville Official Plan, 2021
- Avonlough Sewage Pump Station (SPS) and Conveyance System, December 6, 2023, Council Report

As outlined in Planning Memorandum #1, the spatial distribution of the population has been divided into the following areas:

- Urban Area
- Bayshore/City Centre
- Loyalist Secondary Plan Area
- Cannifton
- Foxboro
- Black Bear Ridge (incl. Harmony Public School)
- Corbyville Village

The P.P.U. (person per unit) counts that were applied in the future projections were the same as identified in the previous memo.

- Low Density at 2.77 P.P.U.
- Medium Density at 2.12 P.P.U.
- High Density at 1.57 P.P.U.

*The PPU values were taken from the 2017 Technical Memorandum No. 1: Population and Development Projections, dated March 30, 2018 (Rev 1). We acknowledge that the estimated annual PPUs may differ (as shown in the Watson Study), but for the purposes of our time buckets and differing between low, medium and high density, we used the abovementioned PPU values.

3. Methodology

In discussion with the City, it was decided that the short-, mid-, and long-term population projections would be identified using the following methodology:

- Short-Term (0-10 years): Existing 2023 Population + Residential Land Supply + Avonlough Phase 1 + Black Bear Ridge Phase 1
- Mid-Term (10-20 years): Short-Term + Development Control Areas + Avonlough Phase 2 + Black Bear Ridge Phase 2
- Long-Term (20+ years): Mid-Term + Avonlough Phase 3 + Black Bear Ridge + Foxboro + Black Bear Ridge Phase 3

Black Bear Ridge is anticipated to have a total build-out of 3,049 residential units at 3 P.P.U., in alignment with the Functional Servicing Report, completed by Jewell Engineering, dated July 16th, 2024. In discussion with the City and Black Bear Ridge, it was assumed that the following number of units will be built for each Black Bear Ridge Development phase:

- Phase 1: 559 residential units based on the number of Total Net Developable Residential Units included in the Black Bear Ridge Draft Plan of Subdivision, dated June 25th, 2024.
- Phase 2: An estimated 1,245 residential units.
- Phase 3: An estimated 1,245 residential units for the remaining build-out units.

Refer to the Design Basis Memorandum for a summary of anticipated institutional, commercial, and industrial growth.

Short-Term (0-10 years):

In order to identify the short-term population, JLR applied the existing population identified in Planning Memo #1, in addition to the Residential Land Supply (RLS) and Avonlough Phase 1.

The RLS identifies Plans of Subdivision (Registered and Draft), along with Vacant Lands Zoned Residential within the City. The RLS also identified both proposed and complete apartment units. The units completed prior to 2023 would have been included in our existing population taken from either the 2021 Census or the City's Building Starts 2021-2023. Therefore, we have only included the apartment units in the Short-Term counts that yet to be built.

It was decided that based on the nature and timing of these types of developments, the available units identified in the RLS would best fit into the short-term time bucket of 0-10 years. JLR applied the P.P.U. based on the type of dwellings, generated a population value and identified the planning area for each future development.

The growth within Black Bear Ridge Phase 1 was based on the 559 Total Net Developable Residential Units included in Biglieri Group's Draft Plan of Subdivision, dated June 25th, 2024. A P.P.U of 3 was applied to the unit counts for an additional population of 1,677. In addition to the Black Bear Ridge's existing population, this yields a 2033 population of 1,833.

For Avonlough Phase 1, the projected number of units served was taken from the Council Report from December 6, 2023 – Capital Budget Item 24-1.001. The report showed 1,800 units serviced by the end of Phase 1 (2026-2034). A P.P.U. of

2.7 was applied to these units to arrive at a total population of 4,860. The Council Report outlines that the 1,800 new residential units are within the Loyalist West Secondary Plan Area. There is additional land supply within the Loyalist West Secondary Plan Area that will not be serviced by Avonlough SPS and the growth in these areas are accounted for separately, as shown in Figure 1.

Table 1 Short-Term (2033) Population by Planning Area

Planning Area	Calculated Area (ha)	2023 Population	2023 Serviced Population	2033 Population	2033 Serviced Population
Urban	1,917	37,292	37,292	40,392	40,392
Bayshore/City Centre	354	3,325	3,325	4,595	4,595
Avonlough SPS Phase 1	-	-	-	4,860	4,860
Loyalist Secondary Plan Area	1,004	2,894	2,894	5,687 (1)	5,687 (1)
Cannifton	1,007	5,471	5,471	6,539	6,539
Black Bear Ridge	381	159	-	1,833	1,833
Foxboro	195	307	-	307	-
Corbyville Village	75	-	-	-	-
TOTAL		**49,448**	**48,982**	**64,213**	**63,906**

Counts do not include Statistics Canada under coverage rate

(1) The population projection is intended for areas within Loyalist Secondary Plan Area that are not serviced by Avonlough SPS.

Mid-Term (10-20 Years):

In order to identify the mid-term population, JLR applied the short-term population as outlined above, in addition to the Development Control Areas (DCA), and Avonlough Phase 2. The DCAs are identified through a zoning layer and are vacant lands projected for growth within the City.

JLR identified the types of lands within the DCAs that are residential through the zoning by-law mapping and the amount of land (ha) that the residential. The DCAs were organized into the planning areas known as Urban, Bayshore/City Centre, Cannifton, and Corbyville. Directed by the City, a density of 18 units per net hectare was applied to the amount of DCA land in each planning area, as shown in Table 2. The low density P.P.U. was applied to the potential number of units to get to the potential population.

Table 2 Additional Units Based on Development Control Areas

Planning Area	Area (ha) of Residential DCA	Potential Units	Potential Population
Urban	95.7	1,723	4,772
Bayshore/City Centre	4.3	77	214
Cannifton	99.6	1,458	4,039
Corbyville	41.7	700	1,712

While Corbyville shows a potential of an additional 750 units in the DCA, as calculated from the DCA area with a density of 18units pet net hectare, the Belleville Official Plan outlines that the maximum number of residential uses in Corbyville Village should not exceed 850 residential units on the basis that the industrial area is redeveloped for residential units or 700 units should the industrial area remains non-residential (Policy 4.3.2a). Therefore, JLR have adjusted the potential units for Corbyville to 700 units in alignment with the current land use. 350 of these units being low density (2.77 P.P.U.) and 350 being medium density (2.12 P.P.U.), both development types were split evenly between the mid- and long-term. This brings the mid-term population for Corbyville to 856 as shown in Table 3.

The anticipated growth for Black Bear Ridge Phase 2 has not been defined. In order to disperse the large number of units throughout the planning timeframes, it was assumed that 1,245 out of the 3,049 (build-out) units would be completed in the mid-term. A density of 3 P.P.U. was used to project population growth in alignment with the Functional Servicing Report by Jewell Engineering.

For Avonlough Phase 2, the projected number of units served was taken from the Council Report from December 6, 2023 – Capital Budget Item 24-1.001. The report shows 5,600 units serviced by the end of Phase 2 (2034-2045). A P.P.U. of 2.7 was applied to these units to get a total population of 15,120.

Table 3 Mid-Term (2043) Population by Planning Area

Planning Area	Calculated Area (ha)	2033 Population	2033 Serviced Population	2043 Population	2043 Serviced Population
Urban	1,917	40,392	40,392	45,164	45,164
Bayshore/City Centre	354	4,595	4,595	4,809	4,809
Avonlough SPS Phase 2	N/A	4,860	4,860	15,120	15,120
Loyalist Secondary Plan Area(1)	1,004	5,687 (1)	5,687 (1)	5,687 (1)	5,687 (1)
Cannifton	1,007	6,539	6,539	10,578	10,578
Corbyville Village	75	-	-	856	856
Black Bear Ridge	381	1,833	1,833	5,568	5,568
Foxboro	195	307	-	307	-
TOTAL		**64,213**	**63,906**	**88,089**	**87,782**

Counts do not include Statistics Canada under coverage rate

(1) The population projection is intended for areas within Loyalist Secondary Plan Area that are not serviced by Avonlough SPS.

Long-Term (20+ Years)

In order to identify the long-term population, JLR applied the mid-term population as outlined above, in addition to all other areas (including Black Bear Ridge and Foxboro) outside the urban boundary, and Avonlough Phase 3.

The anticipated growth for Black Bear Ridge Phase 3 has not been defined. In order to disperse the large number of units throughout the planning timeframes, it was assumed that the remaining 1,245 out of the 3,049 (build-out) units would be completed in the long-term. As advised by the City, a P.P.U of 3 was applied to this dwelling estimate giving a total estimated long-term population for Black Bear Ridge of 9,147.

For Avonlough Phase 3, the projected number of units served was taken from the Council Report from December 6, 2023 – Capital Budget Item 24-1.001. The report shows 9,000 units serviced by the end of Phase 3 (beyond 2045. A P.P.U. of 2.7 was applied to these units to get a total population of 24,300.

The remaining population projection for the long-term in Corbyville yields a 2043 service population of 1,712.

Table 4 Long-Term (2043+) Population by Planning Area

Planning Area	Calculated Area (ha)	2043 Population	2043 Serviced Population	2043+ Population	2043+ Serviced Population
Urban	1,917	45,164	45,164	45,164	45,164
Bayshore/City Centre	354	4,809	4,809	4,809	4,809
Loyalist Secondary Plan Area	1,004	5,687	5,687	5,687	5,687
Avonlough SPS Phase 3	N/A	15,120	15,120	24,300	24,300
Cannifton	1,007	10,578	10,578	10,578	10,578
Black Bear Ridge	381	5,568	5,568	9,303	9,303
Foxboro	195	307	-	307	307
Corbyville Village	75	856	-	1,712	1,712
TOTAL		**88,089**	**87,782**	**101,860**	**101,860**

4. Conclusion and Next Steps

Figure 1 shows the spatial distribution of short-, mid- and long-term growth projections. These population values represent our best estimate of the future population projections of the City of Belleville, using data available. It should be noted that due to inconsistent area boundaries and changing P.P.U. values, the population provided is an estimate. The counts do not include the Statistics Canada under coverage rates, as the up-to-date rates are not available.

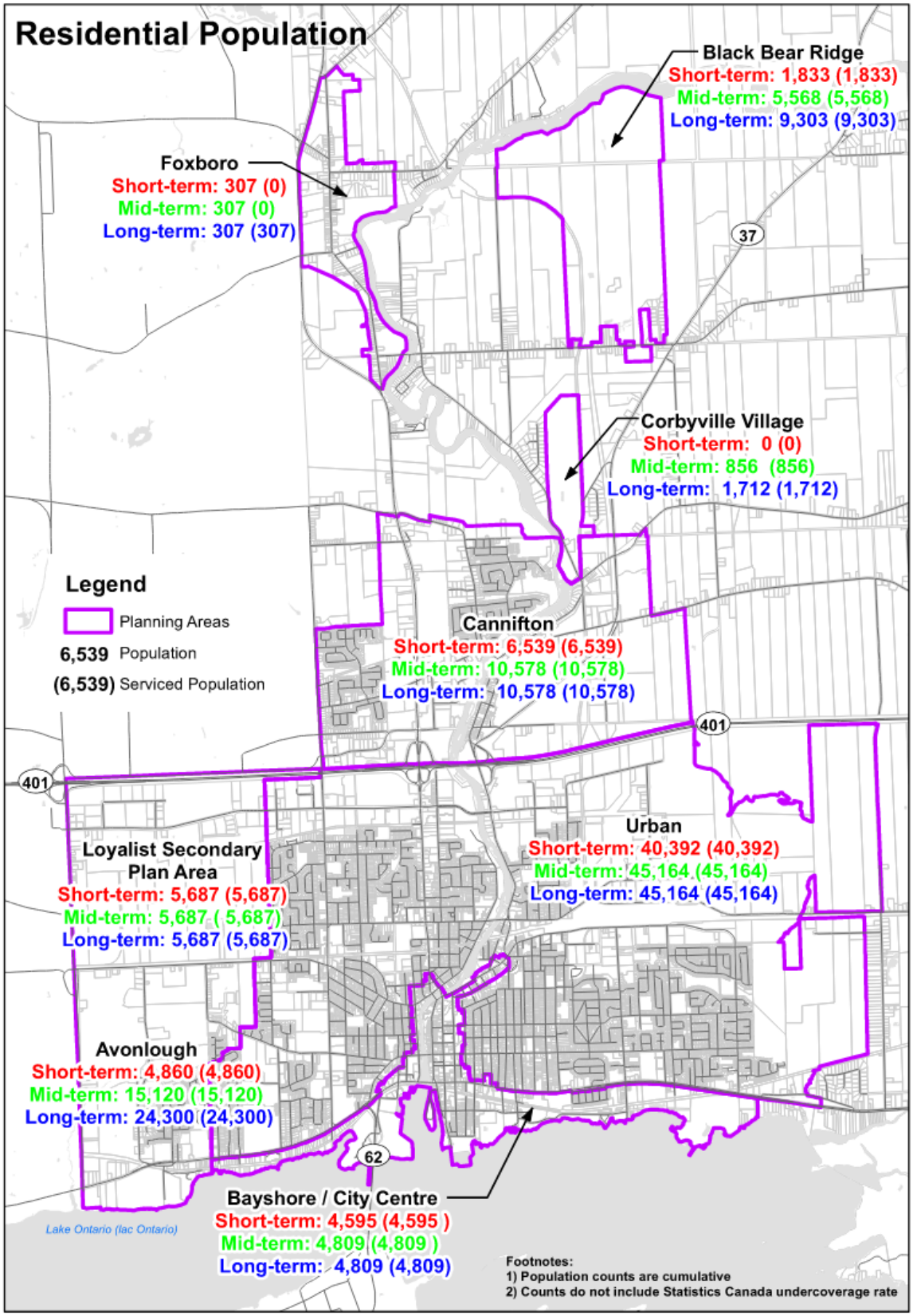


Figure 1 Short-, Mid-, and Long-Term Residential Population Projections by Planning Area

J.L. RICHARDS & ASSOCIATES LIMITED

Prepared by:

Madelen Fellows, M.Pl.
Planner

Reviewed by:

Susan J. Shi, P.Eng., M.Eng.
Associate, Senior Environmental Engineer

MF:ss

Appendix C

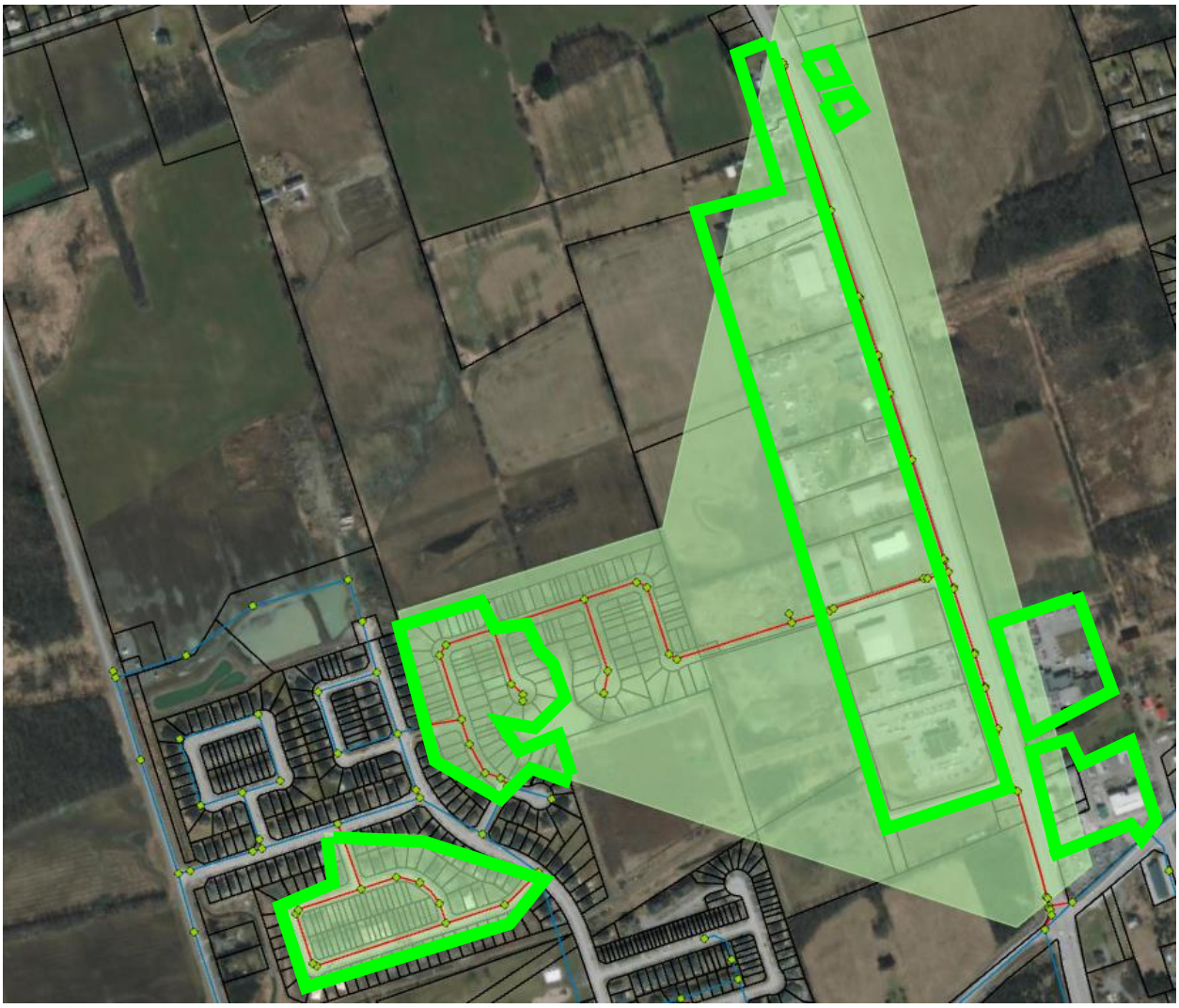
Water Model Simulation Results

Area 1: North of Ridgeway Place

Area 2: Kawartha Court & Lanark Drive

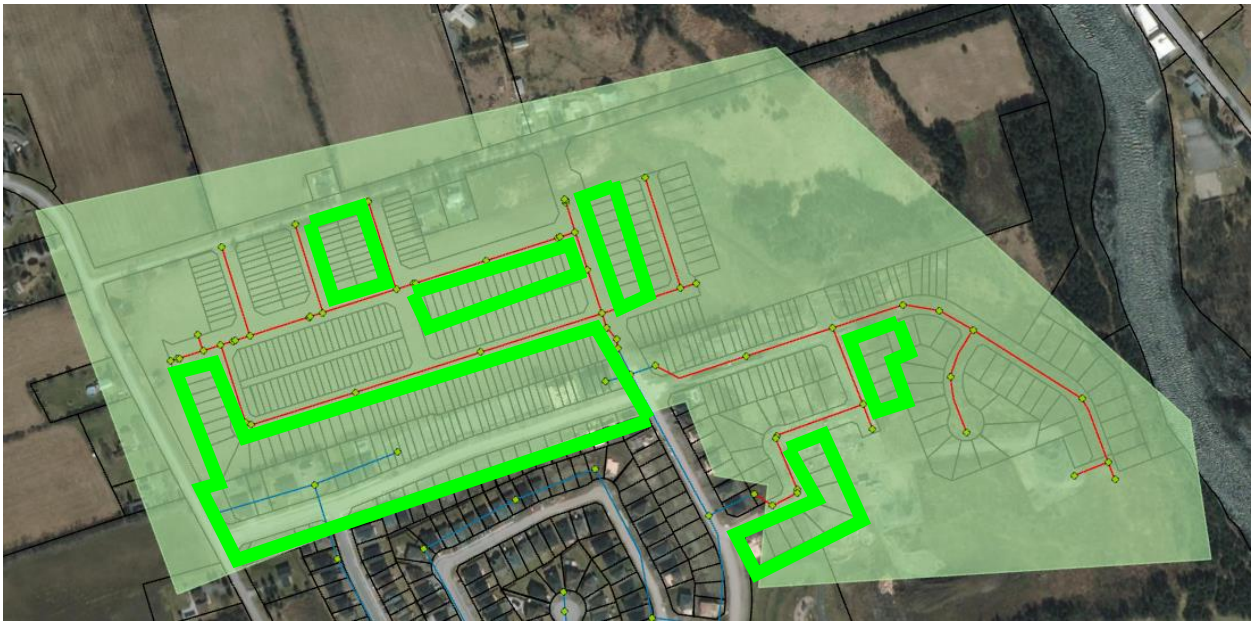
Area 3: Lincoln Drive East of Hanlyn Crescent

Area 4: Summit Crescent



Area 5: North Front Street, Raycroft Drive & Covington Crescent

Area 6: Redwood Drive and Primrose Crescent



Area 7: North of Wims Way & East of Essex Drive

From: Cardinal, Kevin <kcardinal@belleville.ca>
Sent: September 23, 2024 11:47 AM
To: Regine Climaco
Cc: Zach Georgitsos; Annie Williams; Susan Jingmiao Shi; Jianopoulos, Nathan; MPC Glenn
Subject: RE: Request for information: Water Model Confirmation (32874-000 Black Bear Ridge)

Regine,
My comment about the "Max day demand plus fire flow scenario": Pine St. reservoir would have either pump 6310 or 6320 utilized (likely 6320 if more flow was required) not both. If fire was North of the 401 and pressure couldn't be maintained by the fire pump from Adam St. would be the only time Sidney St. bypass would open; it may not open if fire is South of the 401.
"Peak hour demand scenario" looks ok.
Other comments in red below.
Thank you,
Kevin

From: Regine Climaco <rclimaco@jlrichards.ca>
Sent: September 23, 2024 8:39 AM
To: Cardinal, Kevin <kcardinal@belleville.ca>
Cc: Zach Georgitsos <zgeorgitsos@jlrichards.ca>; Annie Williams <awilliams@jlrichards.ca>; Susan Jingmiao Shi <sshi@jlrichards.ca>; Jianopoulos, Nathan <njianopoulos@belleville.ca>; MPC Glenn <Gmcglashon@outlook.com>
Subject: Request for information: Water Model Confirmation (32874-000 Black Bear Ridge)

Hi Kevin,

Please see the following request for information from our water model team. We'd appreciate a response ASAP as this is the final confirmation of the water model for the draft existing conditions report.

See attached a PDF with two figures showing how we have modelled all the pumps and valves based on what was discussed during our meeting.

The first figure is for a fire flow/emergency scenario, and the second figure is for a peak hour demand scenario but during a normal day with no emergency.

Both scenarios are assumed to be during the day around 7-8am.

Can you please confirm that the system operating conditions are representative under these 2 scenarios.

Also, can you please confirm if all pumping stations supply the system simultaneously-Yes, however depending on demand (tower and reservoir levels) we may chose not to run all pumping stations simultaneously. . We understand there are different reservoir filling cycles – Yes, normal practice is fill North Park first, then Pine St. . As we have it modelled currently, there are active pumps at all pumping stations supplying the system at the same time. – not sure if you mean a specific model or both models, but I think I have answered this question above. There are active pumps at all stations that can supply the system at the same time.

Thank you,

Regine Climaco, P.Eng.
Civil Engineer

203 - 863 Princess Street
Kingston, ON, K7L 5N4

Work: 343-306-0065
rclimaco@jlrichards.ca

From: Regine Climaco
Sent: September 16, 2024 2:49 PM
To: Zach Georgitsos; Annie Williams
Subject: FW: Belleville Water Distribution System - Operating Conditions - Meeting Minutes & Information Request

Regine Climaco, P.Eng.
Civil Engineer
Kingston, ON
Work: 343-306-0065

From: Cardinal, Kevin <kcardinal@belleville.ca>
Sent: Monday, September 16, 2024 2:25 PM
To: Regine Climaco <rclimaco@jlrichards.ca>; Jianopoulos, Nathan <njianopoulos@belleville.ca>
Cc: Susan Jingmiao Shi <sshi@jlrichards.ca>
Subject: Re: Belleville Water Distribution System - Operating Conditions - Meeting Minutes & Information Request

Looks like I made a typing error, should be 1.29m to 2.10m. I am on vacation and will return tomorrow if you have any questions.
Thank you,
Kevin

Sent from my Bell Samsung device over Canada's largest network.

From: Regine Climaco <rclimaco@jlrichards.ca>
Sent: Monday, September 16, 2024 12:16:09 p.m.
To: Jianopoulos, Nathan <njianopoulos@belleville.ca>; Cardinal, Kevin <kcardinal@belleville.ca>
Cc: Susan Jingmiao Shi <sshi@jlrichards.ca>
Subject: RE: Belleville Water Distribution System - Operating Conditions - Meeting Minutes & Information Request

Hi Kevin,

It sounds like my last email to you might have been marked as spam. Could you please confirm these water levels in the wet well?

Belleville Water Treatment Plant	
The high lift pumps supply the system, and 2 transfer pumps pull water from the wet well into treated water storage tank.	Yes
The treated water storage tank provides water to the wet well through gravity.	Yes
The wet well typically operates at levels between 1.3 and 2.2m. **City to provide average range of levels in the wet well.**	Average low level is 2.29 m Average high level is 4.10 m
Levels in the in-ground treated water storage tank at the WTP typically range from 2 and 4m. **City to provide average range of tank levels.**	Average low level is 2.29 m Average high level is 4.10 m

Regine Climaco, P.Eng.
Civil Engineer

203 - 863 Princess Street
Kingston, ON, K7L 5N4

Work: 343-306-0065
rclimaco@jlrichards.ca

From: Jianopoulos, Nathan <njianopoulos@belleville.ca>
Sent: Friday, September 13, 2024 2:20 PM
To: Regine Climaco <rclimaco@jlrichards.ca>
Cc: Susan Jingmiao Shi <sshi@jlrichards.ca>
Subject: RE: Belleville Water Distribution System - Operating Conditions - Meeting Minutes & Information Request

Hi Regine,

Wasn't an email sent by me - it looks like the email you sent got caught by our spam traps. I released mine and it came through no problem. I anticipate it will be the same on Kevin's side.

Just to keep you updated, I didn't realize Glenn was at a conference the past few days – so you'll be getting comments for that this afternoon. They were all minor.

Thanks so much, Regine,
Nathan

From: Regine Climaco <rclimaco@jlrichards.ca>
Sent: September 13, 2024 2:05 PM
To: Jianopoulos, Nathan <njianopoulos@belleville.ca>
Cc: Susan Jingmiao Shi <sshi@jlrichards.ca>
Subject: RE: Belleville Water Distribution System - Operating Conditions - Meeting Minutes & Information Request

Hi Nathan,

Checking to see if you tried to send something to me?
I got a postmaster@belleville email this morning which only copied the two of us.

Thanks!

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

Regine Climaco, P.Eng.

Civil Engineer

203 - 863 Princess Street
Kingston, ON, K7L 5N4

BEST MANAGED COMPANIES Platinum member

Work: 343-306-0065
rclimaco@jlrichards.ca

From: Regine Climaco <rclimaco@jlrichards.ca>
Sent: Friday, September 13, 2024 10:37 AM
To: Cardinal, Kevin <kcardinal@belleville.ca>; Susan Jingmiao Shi <sshi@jlrichards.ca>; Jianopoulos, Nathan <njianopoulos@belleville.ca>; MPC Glenn <Gmcglashon@outlook.com>
Cc: Annie Williams <awilliams@jlrichards.ca>; Zach Georgitsos <zgeorgitsos@jlrichards.ca>
Subject: RE: Belleville Water Distribution System - Operating Conditions - Meeting Minutes & Information Request

Hi Kevin,

Following up on this information request.

Thank you,

Regine Climaco, P.Eng.

Civil Engineer

203 - 863 Princess Street
Kingston, ON, K7L 5N4

Work: 343-306-0065
rclimaco@jlrichards.ca

From: Regine Climaco <rclimaco@jlrichards.ca>
Sent: Wednesday, September 11, 2024 10:38 AM
To: Cardinal, Kevin <kcardinal@belleville.ca>; Susan Jingmiao Shi <sshi@jlrichards.ca>; Jianopoulos, Nathan <njianopoulos@belleville.ca>; MPC Glenn <Gmcglashon@outlook.com>
Cc: Annie Williams <awilliams@jlrichards.ca>; Zach Georgitsos <zgeorgitsos@jlrichards.ca>
Subject: RE: Belleville Water Distribution System - Operating Conditions - Meeting Minutes & Information Request

Hi Kevin,

Based on the meeting notes, we were expecting a range of 1.3 to 2.2m for the wet well levels. Could you please confirm if 2.29m to 4.10m is still correct for the wet well levels?

Belleville Water Treatment Plant	
The high lift pumps supply the system, and 2 transfer pumps pull water from the wet well into treated water storage tank.	Yes
The treated water storage tank provides water to the wet well through gravity.	Yes
The wet well typically operates at levels between 1.3 and 2.2m. **City to provide average range of levels in the wet well.**	Average low level is 2.29 m Average high level is 4.10 m
Levels in the in-ground treated water storage tank at the WTP typically range from 2 and 4m. **City to provide average range of tank levels.**	Average low level is 2.29 m Average high level is 4.10 m

Thank you,

Regine Climaco, P.Eng.
Civil Engineer
Kingston, ON
Work: 343-306-0065

From: Cardinal, Kevin <kcardinal@belleville.ca>
Sent: Monday, September 9, 2024 1:41 PM
To: Susan Jingmiao Shi <sshi@jlrichards.ca>; Jianopoulos, Nathan <njianopoulos@belleville.ca>; MPC Glenn <Gmcglashon@outlook.com>
Cc: Regine Climaco <rclimaco@jlrichards.ca>; Annie Williams <awilliams@jlrichards.ca>; Zach Georgitsos <zgeorgitsos@jlrichards.ca>
Subject: Re: Belleville Water Distribution System - Operating Conditions - Meeting Minutes & Information Request

Susan,
Sorry for the delay, please see answers below.
Thank you,
Kevin

From: Susan Jingmiao Shi <sshi@jlrichards.ca>
Sent: Tuesday, August 27, 2024 9:53 AM
To: Cardinal, Kevin <kcardinal@belleville.ca>; Jianopoulos, Nathan <njianopoulos@belleville.ca>; MPC Glenn <Gmcglashon@outlook.com>
Cc: Regine Climaco <rclimaco@jlrichards.ca>; Annie Williams <awilliams@jlrichards.ca>; Zach Georgitsos <zgeorgitsos@jlrichards.ca>
Subject: Belleville Water Distribution System - Operating Conditions - Meeting Minutes & Information Request

Hello Kevin,

Thanks for providing all the information during our meeting last week. It was very helpful!

We wanted to confirm the information received during the meeting and request some additional information. Please accept this email as the meeting minutes and let us know of any errors/omissions.

In the table below, we have summarized the notes taken during the meeting and all questions/required information are shown in **bold.**

JLR Notes & Questions	City Confirmation/Answer
John Street Elevated Tank	
The pumps that fill the tank are a mixture of the pumps from the Pine Street and North Park BPSs.	Yes
Daily operating bandwidth from approximately 30% to 89% of the total tank volume. **City to provide average range of tank operating conditions based on 1 month of data.**	Average low level is 40.51% Average high level is 87.78% Note:100%=7.63m 67%=4.79m 11%=0.00m
North Park Street Reservoir and BPS	
Only 1 pump is typically active (Pump 6510).	Yes
There are 3 pumps in total. Pumps 6510 and 6520 are VFDs and 6530 is constant.	Yes
Discharge pressure fluctuates based on system operators manually adjusting setpoint for daily system demand changes. **City to provide average range of discharge pressures for the pumping station.**	Yes Average low pressure is 392 Kpa Average high pressure is 414 Kpa

The operating level of the tank is approximately between 2 and 4.25m, **City to confirm.**	Average low level is 2.13 m Average high level is 4.19 m
New pumps are planned to be installed. There will potentially be 3 VFD pumps.	Yes
Pine Street Reservoir and BPS	
Pumps are constants (i.e. no VFDs).	Yes
The operating level of the tank is approximately between 2 and 4m. **City to provide average range of tank levels.**	Average low level is 2.29 m Average high level is 4.10 m
Adam Street Booster Pumping Station	
Pump 2 is always active to supply domestic flow and the other 2 pumps are fire pumps which can turn on during emergency scenarios.	Yes
Discharge pressure stays at approximately 523kPa constantly.	Yes
Belleville Water Treatment Plant	
The high lift pumps supply the system, and 2 transfer pumps pull water from the wet well into treated water storage tank.	Yes
The treated water storage tank provides water to the wet well through gravity.	Yes
The wet well typically operates at levels between 1.3 and 2.2m. **City to provide average range of levels in the wet well.**	Average low level is 2.29 m Average high level is 4.10 m
Levels in the in-ground treated water storage tank at the WTP typically range from 2 and 4m. **City to provide average range of tank levels.**	Average low level is 2.29 m Average high level is 4.10 m
General Questions	
What are the typical discharge pressures (or range) for all pumps during the day?	574 kpa between hours 0800-1600 (563-588 kpa)

<table>
<tr><td>City to confirm.</td><td></td></tr>
<tr><td>Can you please confirm the storage volumes of all tanks in the system (John Street, North Park Street, Pine Street, Water Treat Plant Reservoir and Wet Well?

The current volumes in the water model are listed below:

<table><tr><th>Tank</th><th>Volume (m^3)</th></tr><tr><td>High Lift Wet Well</td><td>643.16</td></tr><tr><td>WTP Reservoir</td><td>4504.35</td></tr><tr><td>Pine Street Reservoir</td><td>10465.43</td></tr><tr><td>North Park Street Reservoir</td><td>8933.33</td></tr><tr><td>John Street Elevated Tank</td><td>4128.25</td></tr></table>
City to confirm all storage volumes of all tanks/reservoirs in the system.</td><td>Volumes are fairly close to what you have:

High lift pump well – (646.40 m3 using drawings)

WTP Reservoir – (4.5 ML)

Pine St Reservoir – (11.35 ML)

North Park Reservoir – (9.0 ML)

John St Elevated – (3.4 ML)</td></tr>
<tr><td>Please confirm if there is a check valve at the intersection of Bell Boulevard just west of North Park Street

City to confirm if there is a check valve at this location.</td><td>Confirmed a swing check on the 400mm intersection of North Park/Bell Blvd. allowing flow to go from west to east.</td></tr>
<tr><td>The check valve at Sidney Street opens when the pressure drops below a threshold in Pressure Zone 2 (north of the highway), and the bypass is generally closed. Bypass would be opened under a fire flow scenario in Pressure Zone 2.</td><td>Correct</td></tr>
</table>

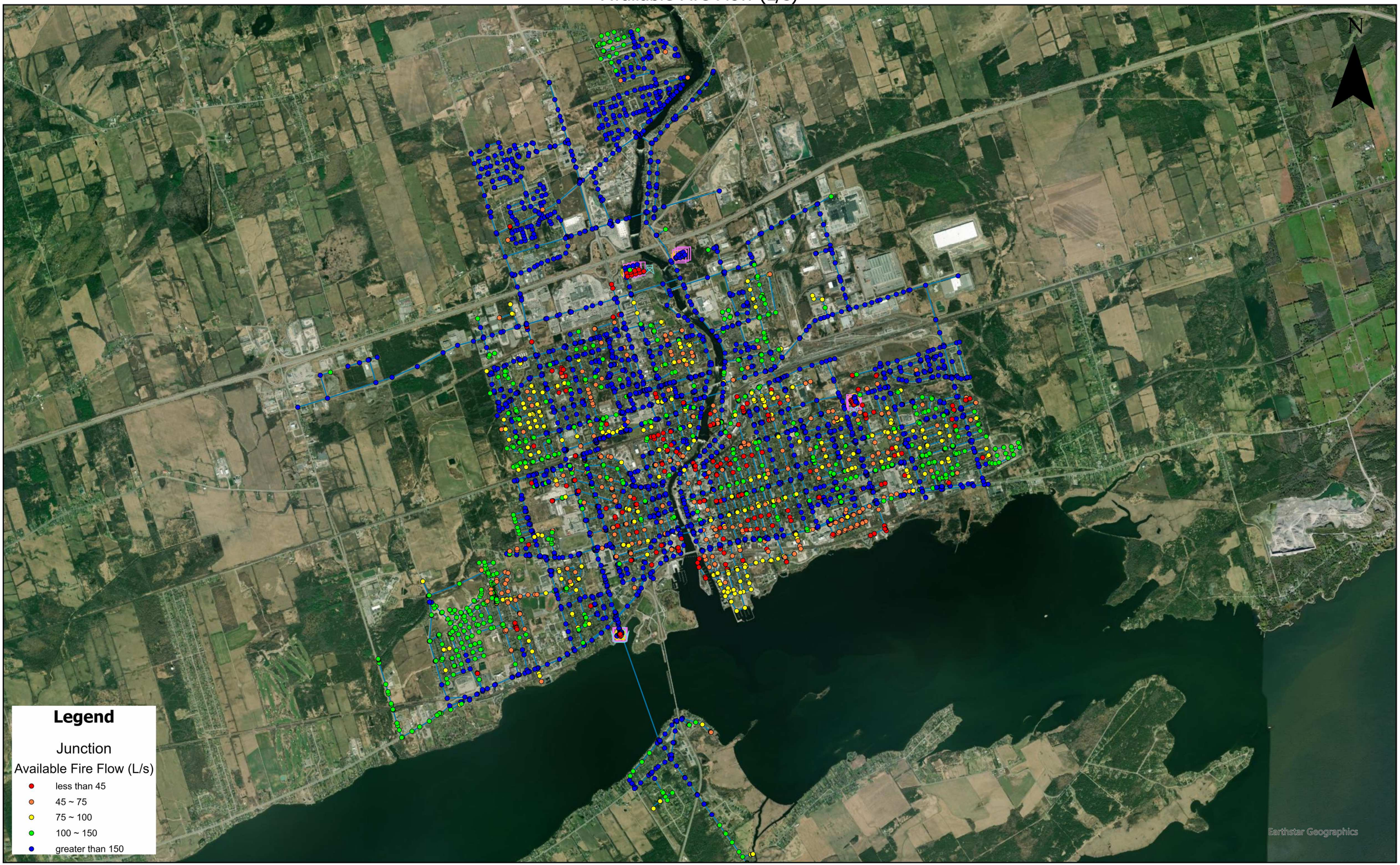
Susan Jingmiao Shi, P.Eng., M.Eng.

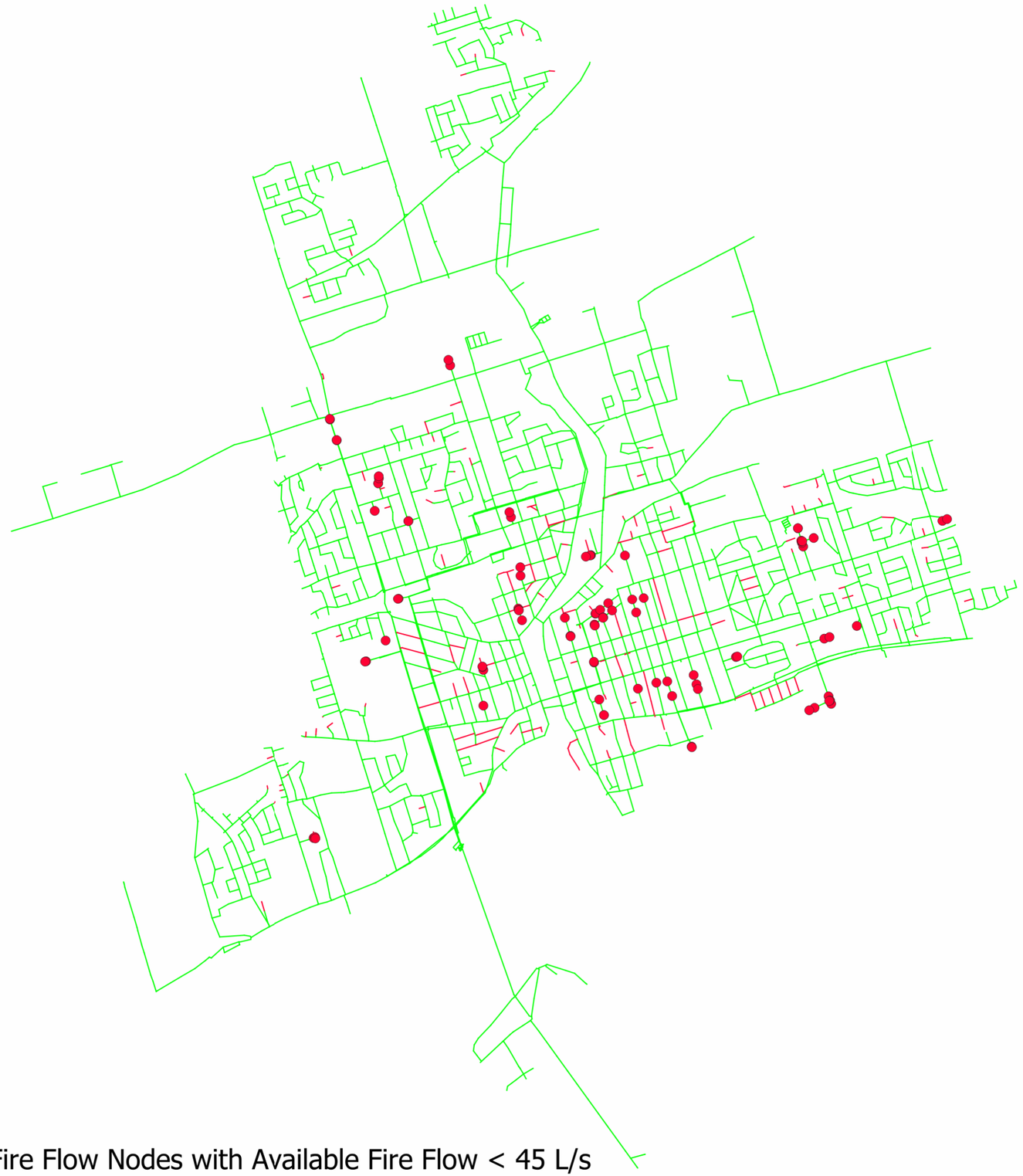
Associate; Senior Environmental Engineer;
Practice Lead, Regional Market

203 - 863 Princess Street
Kingston, ON, K7L 5N4

Work: 343-302-5406
sshi@jlrichards.ca

Belleville Existing System - Maximum Day Plus Fire Flow
Available Fire Flow (L/s)





Belleville Existing System - Fire Flow Nodes with Available Fire Flow < 45 L/s

Legend

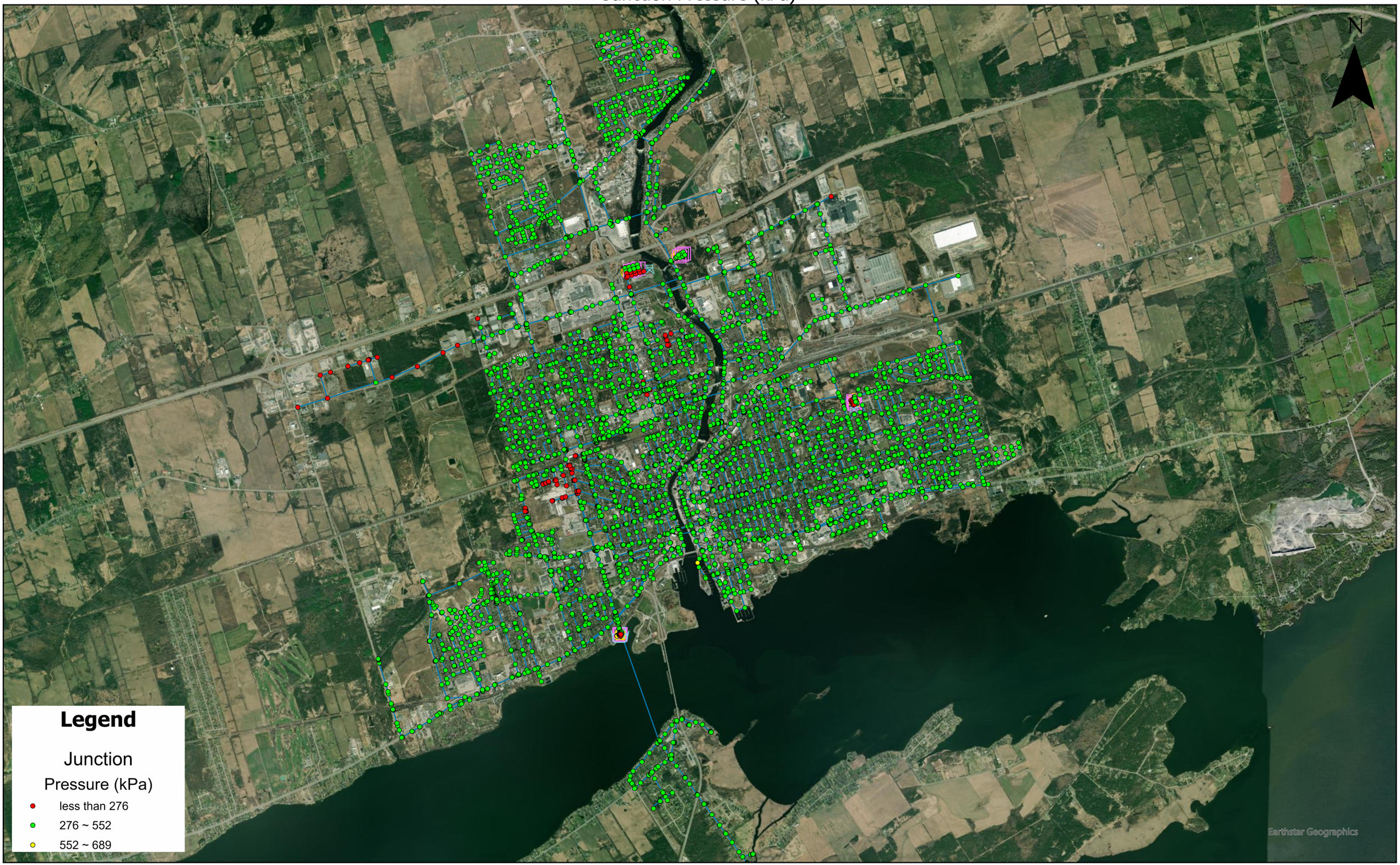
Junctions

- Fire Flow < 45 L/s and Diameter >= 150 mm

Watermains

- Diameter < 150 mm
- Diameter >= 150 mm

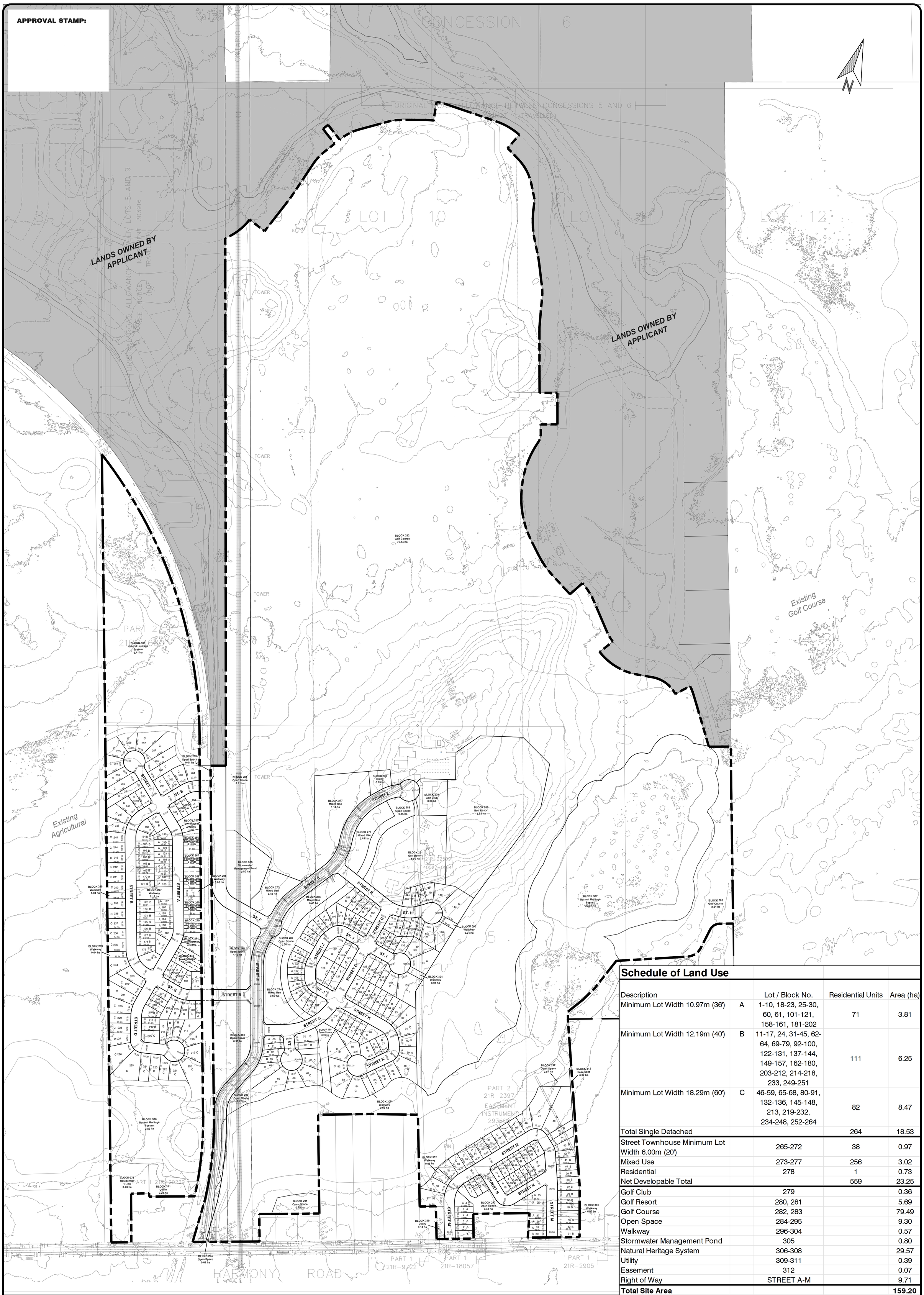
Belleville Existing System - Peak Hour Demand
Junction Pressure (kPa)



Appendix D

Draft Plan of Subdivision

APPROVAL STAMP:



Schedule of Land Use

Description		Lot / Block No.	Residential Units	Area (ha)
Minimum Lot Width 10.97m (36')	A	1-10, 18-23, 25-30, 60, 61, 101-121, 158-161, 181-202	71	3.81
Minimum Lot Width 12.19m (40')	B	11-17, 24, 31-45, 62-64, 69-79, 92-100, 122-131, 137-144, 149-157, 162-180, 203-212, 214-218, 233, 249-251	111	6.25
Minimum Lot Width 18.29m (60')	C	46-59, 65-68, 80-91, 132-136, 145-148, 213, 219-232, 234-248, 252-264	82	8.47
Total Single Detached			264	18.53
Street Townhouse Minimum Lot Width 6.00m (20')		265-272	38	0.97
Mixed Use		273-277	256	3.02
Residential		278	1	0.73
Net Developable Total			559	23.25
Golf Club		279		0.36
Golf Resort		280, 281		5.69
Golf Course		282, 283		79.49
Open Space		284-295		9.30
Walkway		296-304		0.57
Stormwater Management Pond		305		0.80
Natural Heritage System		306-308		29.57
Utility		309-311		0.39
Easement		312		0.07
Right of Way		STREET A-M		9.71
Total Site Area				**159.20**

TITLE:

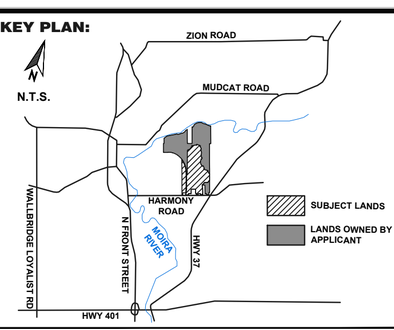
DRAFT PLAN OF SUBDIVISION

LEGAL DESCRIPTION:

Part of Lots 8, 9, 10 and 11, Concession 5
Part of Lots 7, 8, 9, 10 and 11, Concession 6
Township of Thurlow
Now in the City of Belleville
County of Hastings

BLACK BEAR RIDGE LP.

KEY PLAN:



BLACK BEAR RIDGE VILLAGE

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATE AND CORRECTLY SHOWN IN ACCORDANCE WITH A PLAN OF SURVEY PREPARED BY

SURVEYOR
WATSON LAND SURVEYORS, OLS.

DATE

OWNER'S CERTIFICATE:

I HEREBY AUTHORIZE **THE BIGLIERI GROUP LTD.** TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE TOWN OF WHITBY

NAME
COMPANY

APRIL 23, 2021
DATE

REQUIRED INFORMATION:

AS REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT R.S.O. 1990.

(a) SEE PLAN
(b) SEE PLAN
(c) SEE KEY MAP
(d) SEE SCHEDULE OF LAND USE
(e) SEE PLAN
(f) SEE PLAN
(f.1) N/A
(g) SEE PLAN
(h) MUNICIPAL SERVICES AVAILABLE
(i) SANDY SILT, SILTY SAND, AND CLAYEY SILT
(j) SEE PLAN
(k) MUNICIPAL SERVICES AVAILABLE
(l) SEE PLAN

NOTE:
DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

REVISIONS

No.	Description	Date	Int.
3			
2			
1			

PROJECT No.: 22826
DATE: JUNE 25, 2024
SCALE: 1:3000
DRAFTED BY: EC CHECKED BY: MP
DRAWING No.: **DP-01**

BIGLIERI GROUP
2472 Kingston Road, Toronto
21 King Street W, Suite 1502, Hamilton
(416) 693-9155
thebiglierigroup.com

C:\Users\TBG-DT\The Biglieri Group\TBG_Project - 2020-2024\2022\22826\4 - External Consultants Docs+Dwgs\1 - Survey\24.02.21_Updated Topo and Boundary for Phase 1\Black Bear Ridg

Appendix E

Development Control Areas List

32874-000 Black Bear Ridge Servicing Study
Appendix E - Development Control Areas

FID	Shape *	ZoneSymbol	Zoning	ID	DCArea_ha	FID_OP_Com	legend	OP_Area
0	Polygon	DC	Development Control	1	207.4	227	ENVIRONMENTAL PROTECTION	0
1	Polygon	DC	Development Control	1	207.4	280	EMPLOYMENT LAND USE	32.1
2	Polygon	DC	Development Control	1	207.4	832	EMPLOYMENT LAND USE	164.2
3	Polygon	DC	Development Control	1	207.4	893	RURAL LAND USE	11.2
4	Polygon	DC	Development Control	2	3.3	280	EMPLOYMENT LAND USE	3.3
93	Polygon	DC	Development Control	4	27.3	895		24.6
94	Polygon	DC	Development Control	4	27.3	980	MINERAL AGGREGATE	24.6
95	Polygon	DC	Development Control	4	27.3	895		2.6
96	Polygon	DC	Development Control	4	27.3	1025	RURAL LAND USE	2.6
97	Polygon	DC	Development Control	5	1.4	896		0.4
98	Polygon	DC	Development Control	5	1.4	979	MINERAL AGGREGATE	0.4
99	Polygon	DC	Development Control	5	1.4	896		1
100	Polygon	DC	Development Control	5	1.4	1025	RURAL LAND USE	1
101	Polygon	DC	Development Control	6	0.7	897		0.6
102	Polygon	DC	Development Control	6	0.7	979	MINERAL AGGREGATE	0.6
103	Polygon	DC	Development Control	6	0.7	897		0.1
104	Polygon	DC	Development Control	6	0.7	1025	RURAL LAND USE	0.1
105	Polygon	DC	Development Control	7	3.5	898		3.3
106	Polygon	DC	Development Control	7	3.5	912	AGRICULTURAL LAND USE	3.3
107	Polygon	DC	Development Control	7	3.5	898		0.2
108	Polygon	DC	Development Control	7	3.5	1026	RURAL LAND USE	0.2
5	Polygon	DC	Development Control	8	3.1	894	RURAL LAND USE	3.1
109	Polygon	DC	Development Control	9	1.2	899		1.2
110	Polygon	DC	Development Control	9	1.2	970	HAMLET	1.2
6	Polygon	DC	Development Control	10	0.1	821	RESIDENTIAL LAND USE	0.1
7	Polygon	DC	Development Control	11	13.1	283	EMPLOYMENT LAND USE	13.1
8	Polygon	DC	Development Control	12	51.2	155	COMMERCIAL LAND USE	0.3
9	Polygon	DC	Development Control	12	51.2	157	COMMERCIAL LAND USE	13.7
10	Polygon	DC	Development Control	12	51.2	285	EMPLOYMENT LAND USE	18.5
11	Polygon	DC	Development Control	12	51.2	810	RESIDENTIAL LAND USE	18.6
12	Polygon	DC	Development Control	13	0.6	163	COMMERCIAL LAND USE	0.6
13	Polygon	DC	Development Control	14	1.9	799	RESIDENTIAL LAND USE	1.9
14	Polygon	DC	Development Control	15	0.1	827	RESIDENTIAL LAND USE	0.1
15	Polygon	DC	Development Control	16	1.3	146	COMMERCIAL LAND USE	1.3
16	Polygon	DC	Development Control	17	3.5	273	EMPLOYMENT LAND USE	3.5
17	Polygon	DC	Development Control	18	8	98	COMMERCIAL LAND USE	0.7
18	Polygon	DC	Development Control	18	8	579	RESIDENTIAL LAND USE	7.3
19	Polygon	DC	Development Control	19	2.4	1031	RURAL LAND USE	2.4
20	Polygon	DC	Development Control	20	4.6	73	COMMERCIAL LAND USE	0.2
21	Polygon	DC	Development Control	20	4.6	74	COMMERCIAL LAND USE	0.1
22	Polygon	DC	Development Control	20	4.6	248	RESIDENTIAL LAND USE	4.3
23	Polygon	DC	Development Control	21	0.1	585	RESIDENTIAL LAND USE	0.1
24	Polygon	DC	Development Control	22	0.2	475	RESIDENTIAL LAND USE	0.2
25	Polygon	DC	Development Control	23	0	13	CITY CENTRE	0
26	Polygon	DC	Development Control	23	0	204	ENVIRONMENTAL PROTECTION	0
111	Polygon	DC	Development Control	23	0	13	CITY CENTRE	0
112	Polygon	DC	Development Control	23	0	204	ENVIRONMENTAL PROTECTION	0
27	Polygon	DC	Development Control	24	0.1	394	RESIDENTIAL LAND USE	0.1
28	Polygon	DC	Development Control	25	0.1	732	RESIDENTIAL LAND USE	0.1
29	Polygon	DC	Development Control	26	1.2	197	COMMUNITY FACILITY	1.2
30	Polygon	DC	Development Control	27	0.1	135	COMMERCIAL LAND USE	0.1
31	Polygon	DC	Development Control	28	2.2	774	RESIDENTIAL LAND USE	2.2
32	Polygon	DC	Development Control	29	44.2	900		0
113	Polygon	DC	Development Control	29	44.2	900		0.8
114	Polygon	DC	Development Control	29	44.2	956	HAMLET	0.8
115	Polygon	DC	Development Control	29	44.2	900		0.3
116	Polygon	DC	Development Control	29	44.2	957	HAMLET	0.3
117	Polygon	DC	Development Control	29	44.2	900		0.1
118	Polygon	DC	Development Control	29	44.2	959	HAMLET	0.1
119	Polygon	DC	Development Control	29	44.2	900		1.4
120	Polygon	DC	Development Control	29	44.2	961	HAMLET	1.4
121	Polygon	DC	Development Control	29	44.2	900		0.6
122	Polygon	DC	Development Control	29	44.2	962	HAMLET	0.6
123	Polygon	DC	Development Control	29	44.2	900		1.6
124	Polygon	DC	Development Control	29	44.2	963	HAMLET	1.6

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125	Polygon	DC	Development Control	29	44.2	900		39.5
126	Polygon	DC	Development Control	29	44.2	1001	RURAL LAND USE	39.5
33	Polygon	DC	Development Control	30	20.5	492	RESIDENTIAL LAND USE	8.2
34	Polygon	DC	Development Control	30	20.5	836	RESIDENTIAL LAND USE	3.2
35	Polygon	DC	Development Control	30	20.5	844	RESIDENTIAL LAND USE	2.3
36	Polygon	DC	Development Control	30	20.5	856	RESIDENTIAL LAND USE	1.9
127	Polygon	DC	Development Control	30	20.5	249	RESIDENTIAL LAND USE	4.9
128	Polygon	DC	Development Control	30	20.5	856	RESIDENTIAL LAND USE	4.9
37	Polygon	DC	Development Control	31	5.4	273	EMPLOYMENT LAND USE	5.4
38	Polygon	DC	Development Control	32	5.9	705	RESIDENTIAL LAND USE	5.9
39	Polygon	DC	Development Control	33	0	705	RESIDENTIAL LAND USE	0
40	Polygon	DC	Development Control	34	25	273	EMPLOYMENT LAND USE	1
41	Polygon	DC	Development Control	34	25	768	RESIDENTIAL LAND USE	23.9
129	Polygon	DC	Development Control	34	25	223	ENVIRONMENTAL PROTECTION	0
130	Polygon	DC	Development Control	34	25	768	RESIDENTIAL LAND USE	0
131	Polygon	DC	Development Control	34	25	224	ENVIRONMENTAL PROTECTION	0
132	Polygon	DC	Development Control	34	25	768	RESIDENTIAL LAND USE	0
133	Polygon	DC	Development Control	34	25	225	ENVIRONMENTAL PROTECTION	0
134	Polygon	DC	Development Control	34	25	768	RESIDENTIAL LAND USE	0
42	Polygon	DC	Development Control	35	39.3	854	RESIDENTIAL LAND USE	28.5
43	Polygon	DC	Development Control	35	39.3	855	ENVIRONMENTAL PROTECTION	0
44	Polygon	DC	Development Control	35	39.3	893	RURAL LAND USE	10.8
45	Polygon	DC	Development Control	36	1.2	721	RESIDENTIAL LAND USE	1.2
46	Polygon	DC	Development Control	37	4.8	152	COMMERCIAL LAND USE	4.8
47	Polygon	DC	Development Control	37	4.8	799	RESIDENTIAL LAND USE	0
48	Polygon	DC	Development Control	38	49.4	228	ENVIRONMENTAL PROTECTION	0
49	Polygon	DC	Development Control	38	49.4	283	EMPLOYMENT LAND USE	40.5
50	Polygon	DC	Development Control	38	49.4	290	EMPLOYMENT AREA – EXCEPTION TWO	8.5
51	Polygon	DC	Development Control	38	49.4	834	AGRICULTURAL	0.1
52	Polygon	DC	Development Control	39	8.4	161	COMMERCIAL LAND USE	0
53	Polygon	DC	Development Control	39	8.4	288	EMPLOYMENT LAND USE	5.8
54	Polygon	DC	Development Control	39	8.4	815	RESIDENTIAL LAND USE	2.5
55	Polygon	DC	Development Control	40	11.8	366	OPEN SPACE	0
56	Polygon	DC	Development Control	40	11.8	823	RESIDENTIAL LAND USE	11.6
57	Polygon	DC	Development Control	41	11.5	289	EMPLOYMENT LAND USE	10.9
58	Polygon	DC	Development Control	42	19	290	EMPLOYMENT AREA – EXCEPTION TWO	19
59	Polygon	DC	Development Control	43	98.6	290	EMPLOYMENT AREA – EXCEPTION TWO	57.5
60	Polygon	DC	Development Control	43	98.6	833	AGRICULTURAL	0
61	Polygon	DC	Development Control	43	98.6	835	EMPLOYMENT LAND USE	5
62	Polygon	DC	Development Control	43	98.6	891	AGRICULTURAL LAND USE	0
135	Polygon	DC	Development Control	43	98.6	290	EMPLOYMENT AREA – EXCEPTION TWO	0.6
136	Polygon	DC	Development Control	43	98.6	833	AGRICULTURAL	0.6
137	Polygon	DC	Development Control	43	98.6	833	AGRICULTURAL	18.6
138	Polygon	DC	Development Control	43	98.6	891	AGRICULTURAL LAND USE	18.6
139	Polygon	DC	Development Control	44	5.9	901		5.9
140	Polygon	DC	Development Control	44	5.9	969	HAMLET	5.9
141	Polygon	DC	Development Control	45	9.4	902		9.4
142	Polygon	DC	Development Control	45	9.4	1021	RURAL LAND USE	9.4
143	Polygon	DC	Development Control	46	11.3	903		11.3
144	Polygon	DC	Development Control	46	11.3	969	HAMLET	11.3
63	Polygon	DC	Development Control	47	6.6	865	RESIDENTIAL LAND USE	6.3
64	Polygon	DC	Development Control	48	44.5	294	EMPLOYMENT LAND USE	1
65	Polygon	DC	Development Control	48	44.5	366	OPEN SPACE	0.5
66	Polygon	DC	Development Control	48	44.5	367	OPEN SPACE	0.9
67	Polygon	DC	Development Control	48	44.5	822	RESIDENTIAL LAND USE	0
68	Polygon	DC	Development Control	48	44.5	824	RESIDENTIAL LAND USE	41.7
69	Polygon	DC	Development Control	49	13.8	807	RESIDENTIAL LAND USE	0
70	Polygon	DC	Development Control	49	13.8	851	COMMERCIAL LAND USE	11
71	Polygon	DC	Development Control	49	13.8	852	RESIDENTIAL LAND USE	2.8
72	Polygon	DC	Development Control	49	13.8	882	RESIDENTIAL LAND USE	0
145	Polygon	DC	Development Control	49	13.8	807	RESIDENTIAL LAND USE	0
146	Polygon	DC	Development Control	49	13.8	852	RESIDENTIAL LAND USE	0
147	Polygon	DC	Development Control	49	13.8	852	RESIDENTIAL LAND USE	0
148	Polygon	DC	Development Control	49	13.8	882	RESIDENTIAL LAND USE	0
73	Polygon	DC	Development Control	50	21.2	162	COMMERCIAL LAND USE	20.3
74	Polygon	DC	Development Control	51	66.4	163	COMMERCIAL LAND USE	22.8

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75	Polygon	DC	Development Control	51	66.4	165	COMMERCIAL LAND USE	1.6
76	Polygon	DC	Development Control	51	66.4	282	EMPLOYMENT LAND USE	5.6
77	Polygon	DC	Development Control	51	66.4	819	RESIDENTIAL LAND USE	36.4
78	Polygon	DC	Development Control	52	1	839	EMPLOYMENT LAND USE	1
149	Polygon	DC	Development Control	53	2.8	904		2.8
150	Polygon	DC	Development Control	53	2.8	968	HAMLET	2.8
151	Polygon	DC	Development Control	54	1	905		1
152	Polygon	DC	Development Control	54	1	969	HAMLET	1
153	Polygon	DC	Development Control	55	0.3	906		0.3
154	Polygon	DC	Development Control	55	0.3	971	HAMLET	0.3
155	Polygon	DC	Development Control	56	11.9	907		3.3
156	Polygon	DC	Development Control	56	11.9	971	HAMLET	3.3
157	Polygon	DC	Development Control	56	11.9	907		8.6
158	Polygon	DC	Development Control	56	11.9	1018	RURAL LAND USE	8.6
79	Polygon	DC	Development Control	57	11.3	908		0
159	Polygon	DC	Development Control	57	11.3	908		0
160	Polygon	DC	Development Control	57	11.3	971	HAMLET	0
161	Polygon	DC	Development Control	57	11.3	908		11.3
162	Polygon	DC	Development Control	57	11.3	1018	RURAL LAND USE	11.3
163	Polygon	DC	Development Control	58	0.2	909		0.2
164	Polygon	DC	Development Control	58	0.2	969	HAMLET	0.2
165	Polygon	DC	Development Control	59	0.7	910		0.7
166	Polygon	DC	Development Control	59	0.7	968	HAMLET	0.7
167	Polygon	DC	Development Control	60	2.8	911		2.8
168	Polygon	DC	Development Control	60	2.8	968	HAMLET	2.8
80	Polygon	DC	Development Control	61	0.2	164	COMMERCIAL LAND USE	0.2
81	Polygon	DC	Development Control	62	0.7	364	OPEN SPACE	0.7
82	Polygon	DC	Development Control	62	0.7	821	RESIDENTIAL LAND USE	0
83	Polygon	DC	Development Control	63	0.6	492	RESIDENTIAL LAND USE	0.6
84	Polygon	DC	Development Control	64	0.1	818	RESIDENTIAL LAND USE	0.1
85	Polygon	DC	Development Control	65	0	865	RESIDENTIAL LAND USE	0
86	Polygon	DC	Development Control	66	0.1	865	RESIDENTIAL LAND USE	0.1
87	Polygon	DC	Development Control	67	0.6	865	RESIDENTIAL LAND USE	0.6
88	Polygon	DC	Development Control	68	1.5	717	RESIDENTIAL LAND USE	1.5
89	Polygon	DC	Development Control	69	0	721	RESIDENTIAL LAND USE	0
90	Polygon	DC	Development Control	70	0.1	267	EMPLOYMENT LAND USE	0
91	Polygon	DC	Development Control	70	0.1	721	RESIDENTIAL LAND USE	0.1
92	Polygon	DC	Development Control	71	0.4	721	RESIDENTIAL LAND USE	0.4