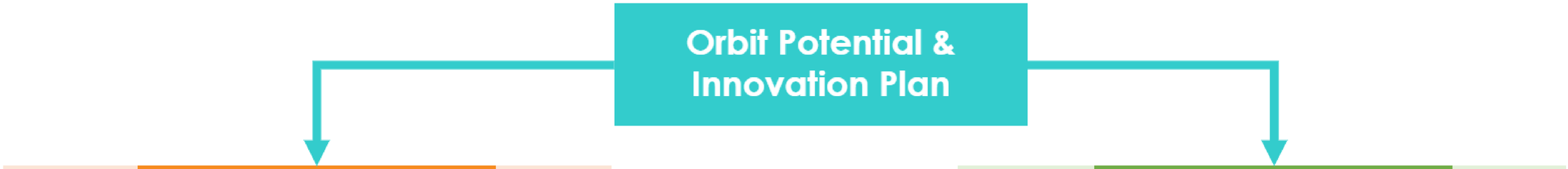
Orbit Potential and Innovation Plan

Public Information Centre

December 15, 2022

7:00pm to 9:00pm

What is OPIP?



A **Secondary Plan** provides detailed objectives and policies for a specific area, related to topics such as:

- Growth
- Housing
- Economic Development
- Parks and Open Space
- Transportation
- Heritage
- Urban Design
- Infrastructure

- The **Servicing Master Plan** will identify the preferred servicing strategies (water, wastewater, stormwater and mobility) required for the OPIP Secondary Plan Area.
- The study will be undertaken in consultation with regulatory agencies, Indigenous Communities, affected stakeholders and the public.

Location

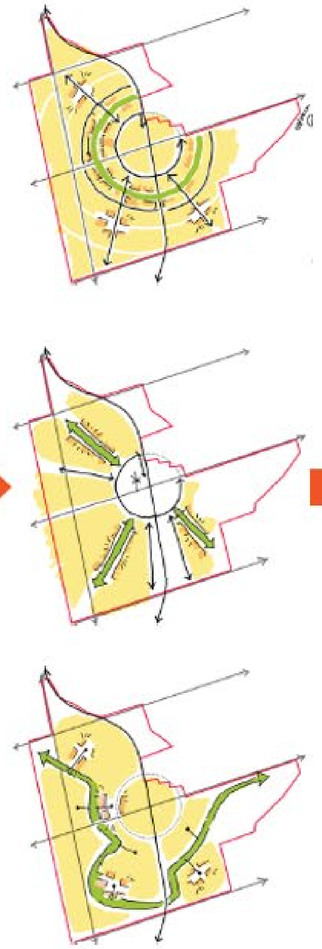

Yonge Street
6th Line
7th Line
Innisfil Beach Road
Innisfil Town Hall
5th Line
GO Rail Line
Orbit
Canadian Tire
Fire Station
Alcona
20th Side Road
South Innisfil Community Centre
Proposed GO Station
Lefroy
Lake Simcoe Public School
Belle Ewart
Wastewater Treatment Plant
Belle Beach
Simcoe Beach
Innisfil Beach Park
Big Cedar Golf Club
Big Cedar Point Beach
Lake Simcoe

Process to Date

Partisan's concept visual

Discussion Paper

Key themes to be explored with the design implementation



Strategies and Concepts

Exploration of three concept designs

Current Stage

Concept Development

Design development and population number testing

- Streets and blocks
- Open Space Iterations
- Land Use
- Heights and Densities
- Public Realm
- Urban Design
- Active Transportation
- Transit

Secondary Plan

Finalized demonstration plan

Vision Statement and Goals

*"The Orbit is a cutting-edge community where **small town and rural lifestyles co-exist with the benefits and attributes of urban living**.*

The public realm is at the forefront with housing density & affordability, mobility, transit, arts, culture, technology, connectivity, business, digital innovation, economy, healthcare, social cohesion & infrastructure, sustainability, agriculture, open spaces, access to trails & waterfront and walkability.

*The Orbit creates a dynamic centre of activity **for visitors and residents alike**, appealing to a variety of lifestyle activities that are possible and available in the area […] Offering a **rural-urban, all-season experience and easy access to the City**"*

Achieving a sense of place

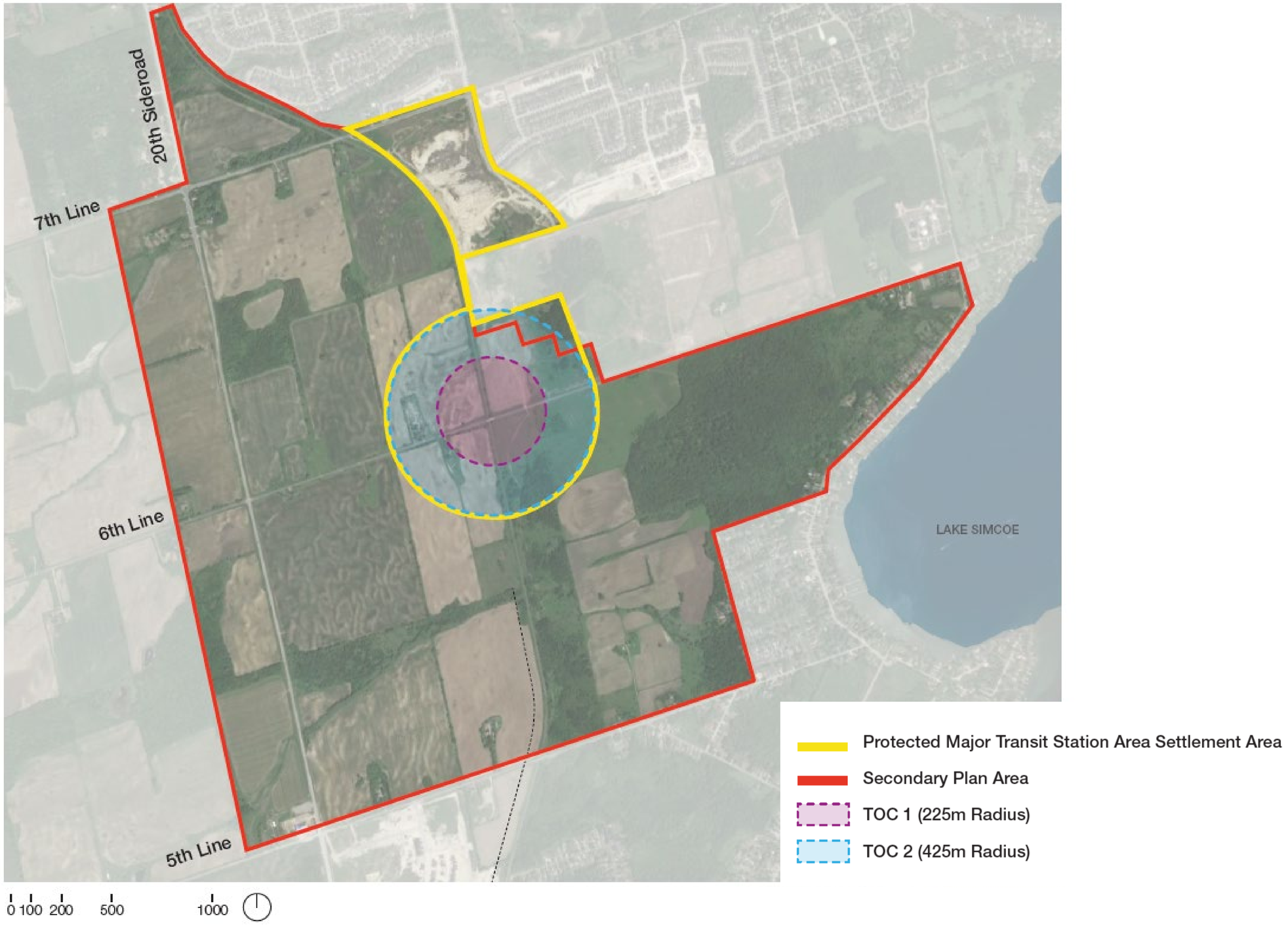
15 Minute Neighbourhoods

Higher quality density

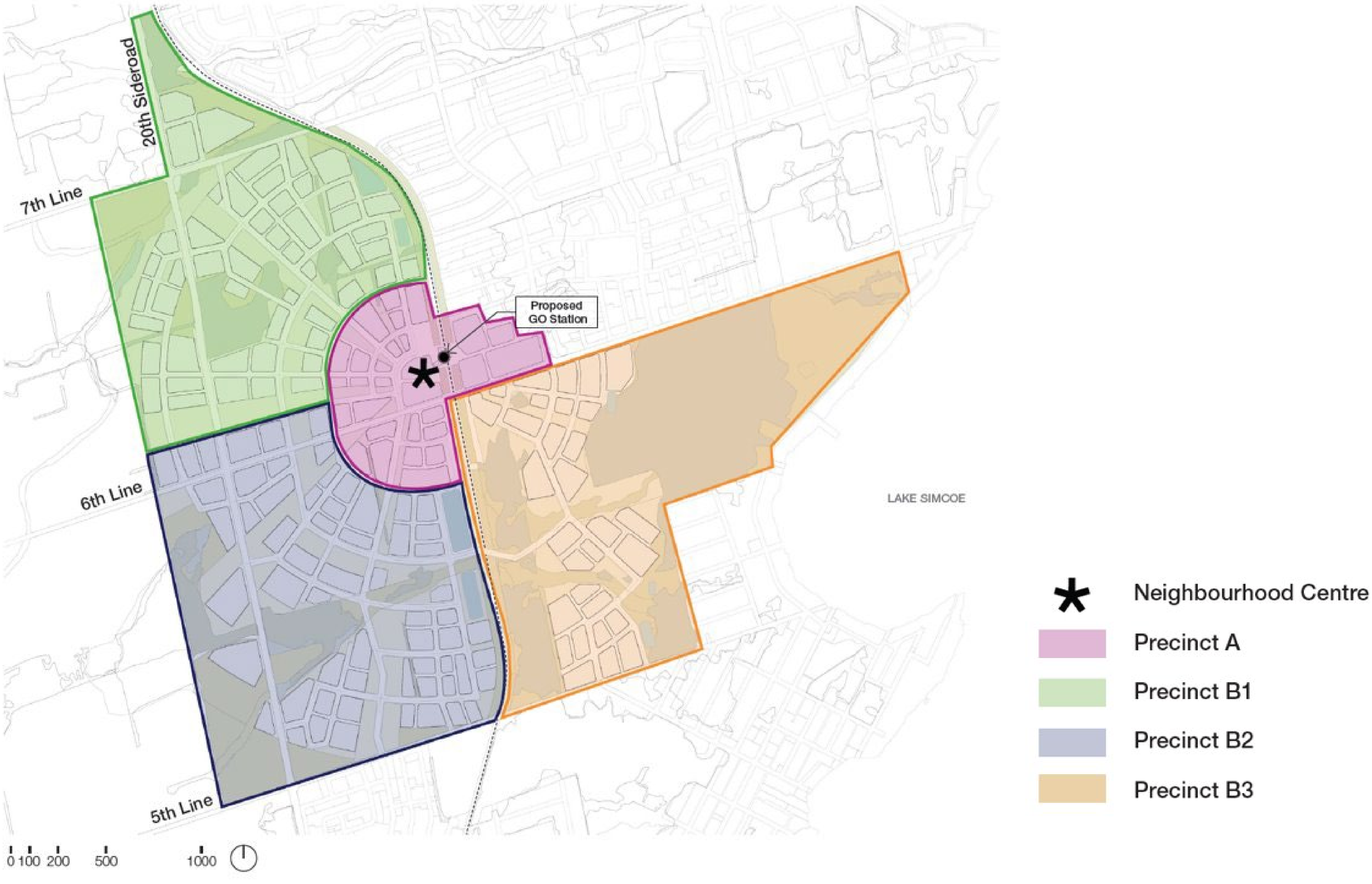
An ‘Insightful’ City

Sustainable community

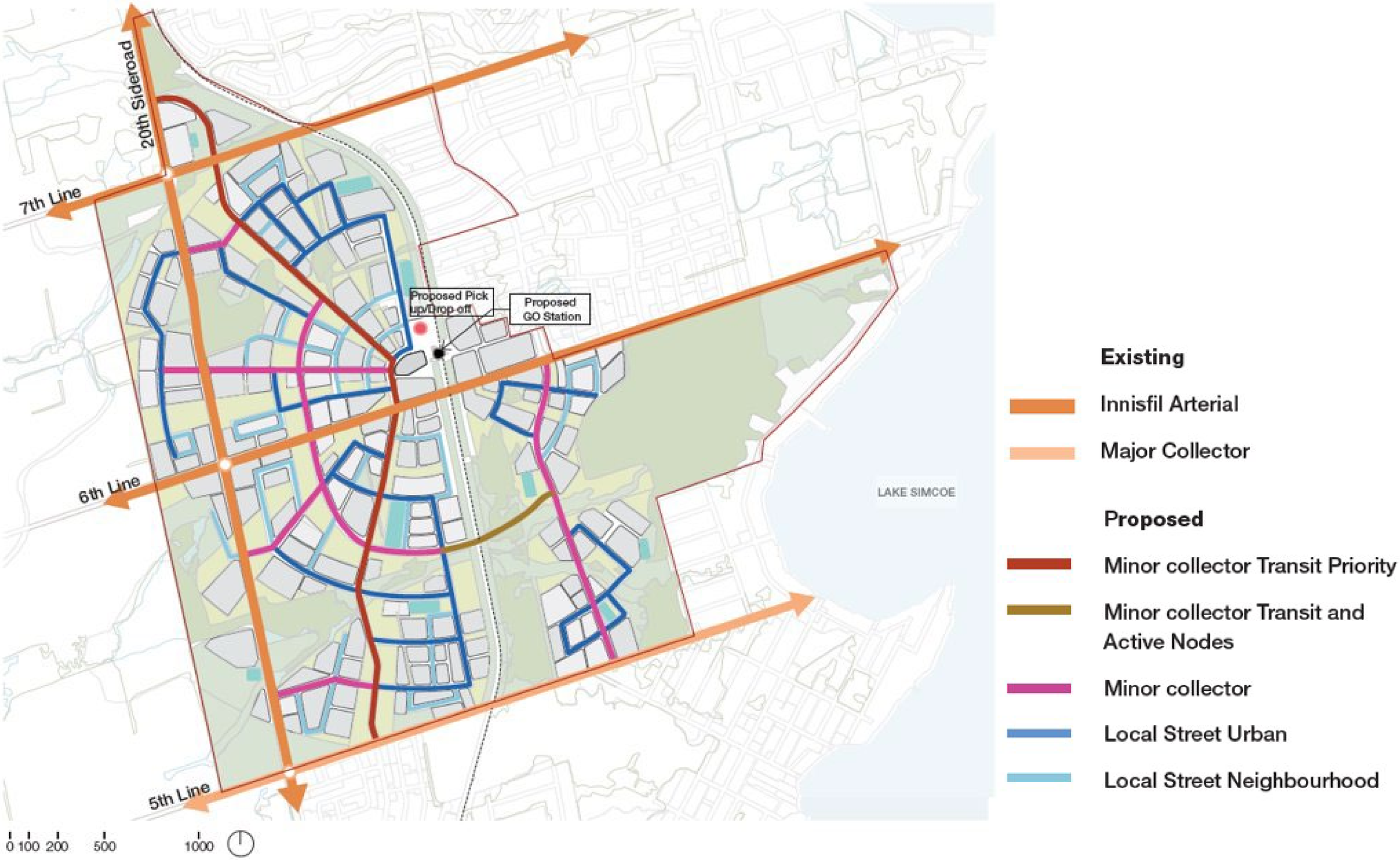
Secondary Plan Area



Precincts

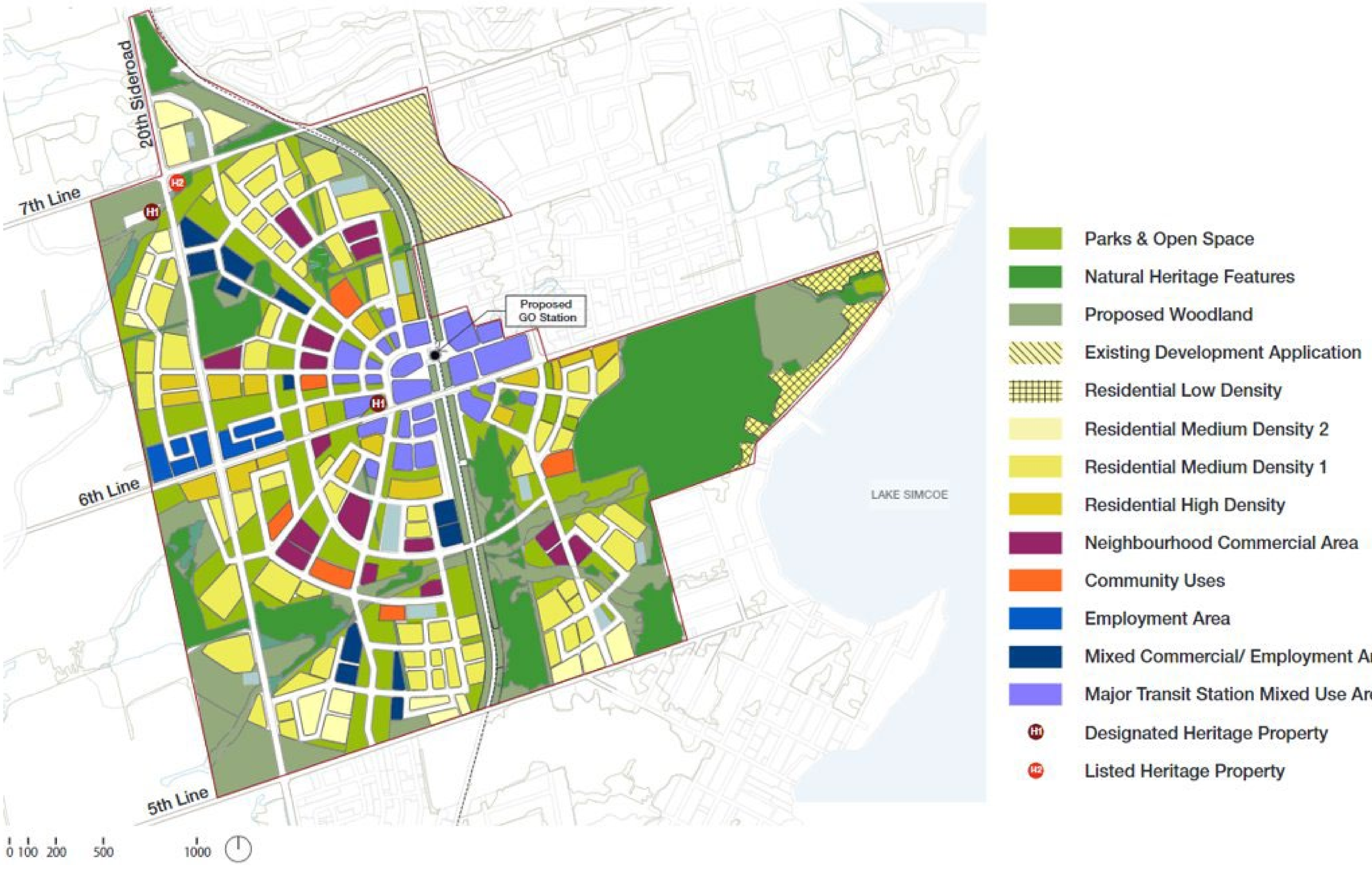

20th Sideroad
7th Line
Proposed
GO Station
6th Line
LAKE SIMCOE
5th Line
0 100 200 500 1000
Neighbourhood Centre
Precinct A
Precinct B1
Precinct B2
Precinct B3

Road Network

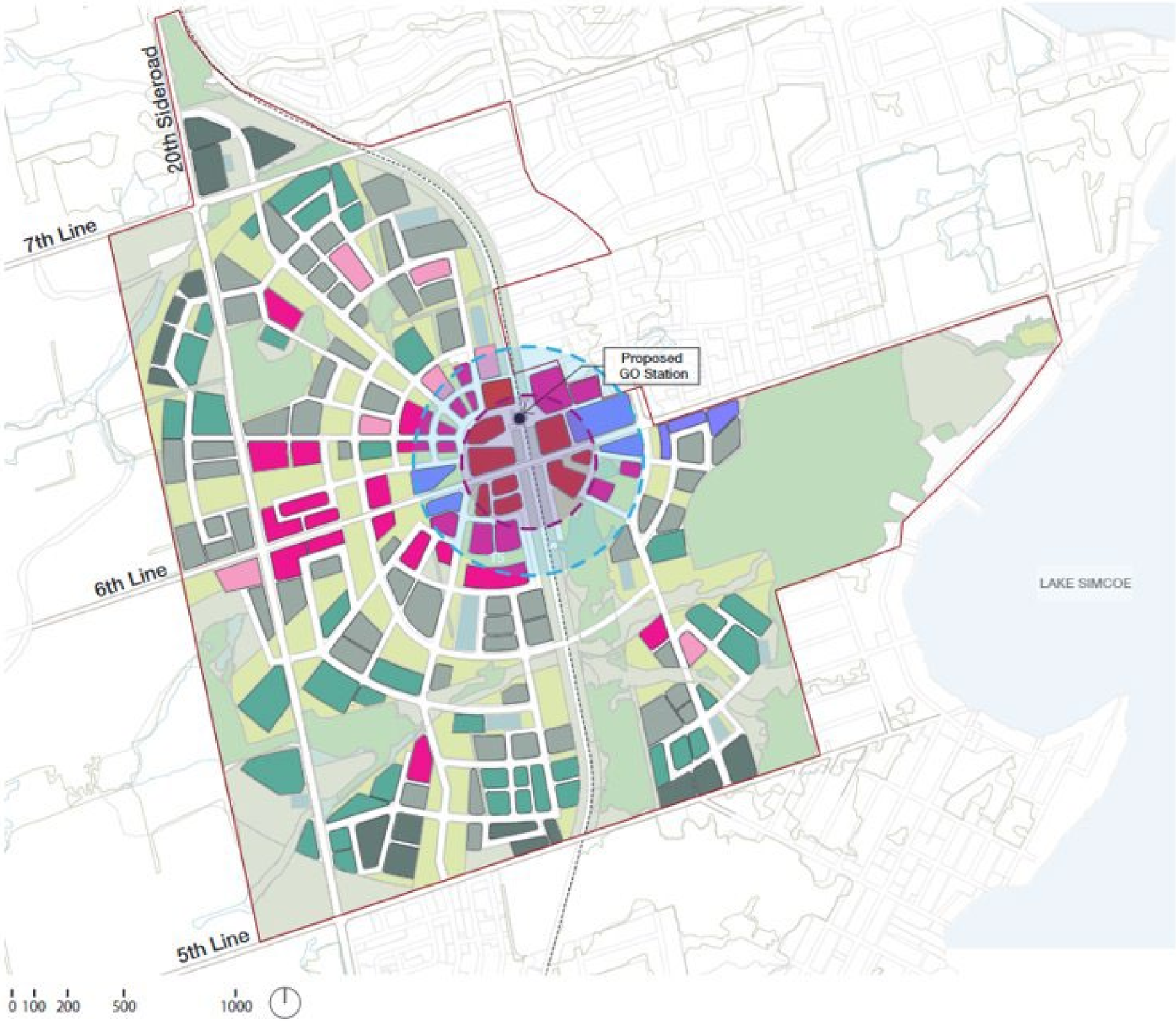


Walking and Cycling Trails

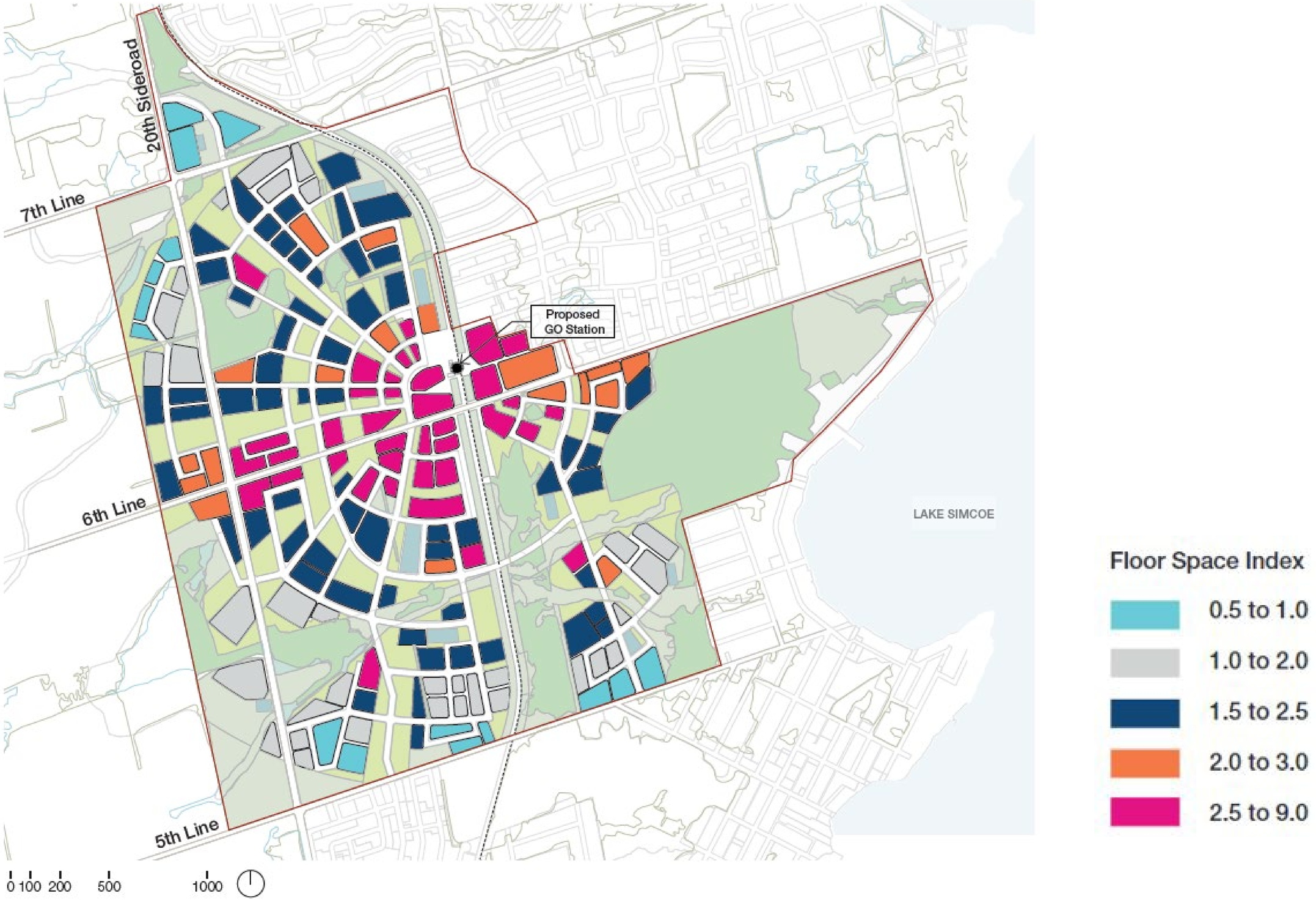
Land Use


20th Sideroad
7th Line
6th Line
5th Line
H1
H2
Proposed
GO Station
LAKE SIMCOE
0 100 200 500 1000
Parks & Open Space
Natural Heritage Features
Proposed Woodland
Existing Development Application
Residential Low Density
Residential Medium Density 2
Residential Medium Density 1
Residential High Density
Neighbourhood Commercial Area
Community Uses
Employment Area
Mixed Commercial/ Employment Area
Major Transit Station Mixed Use Area
Designated Heritage Property
Listed Heritage Property

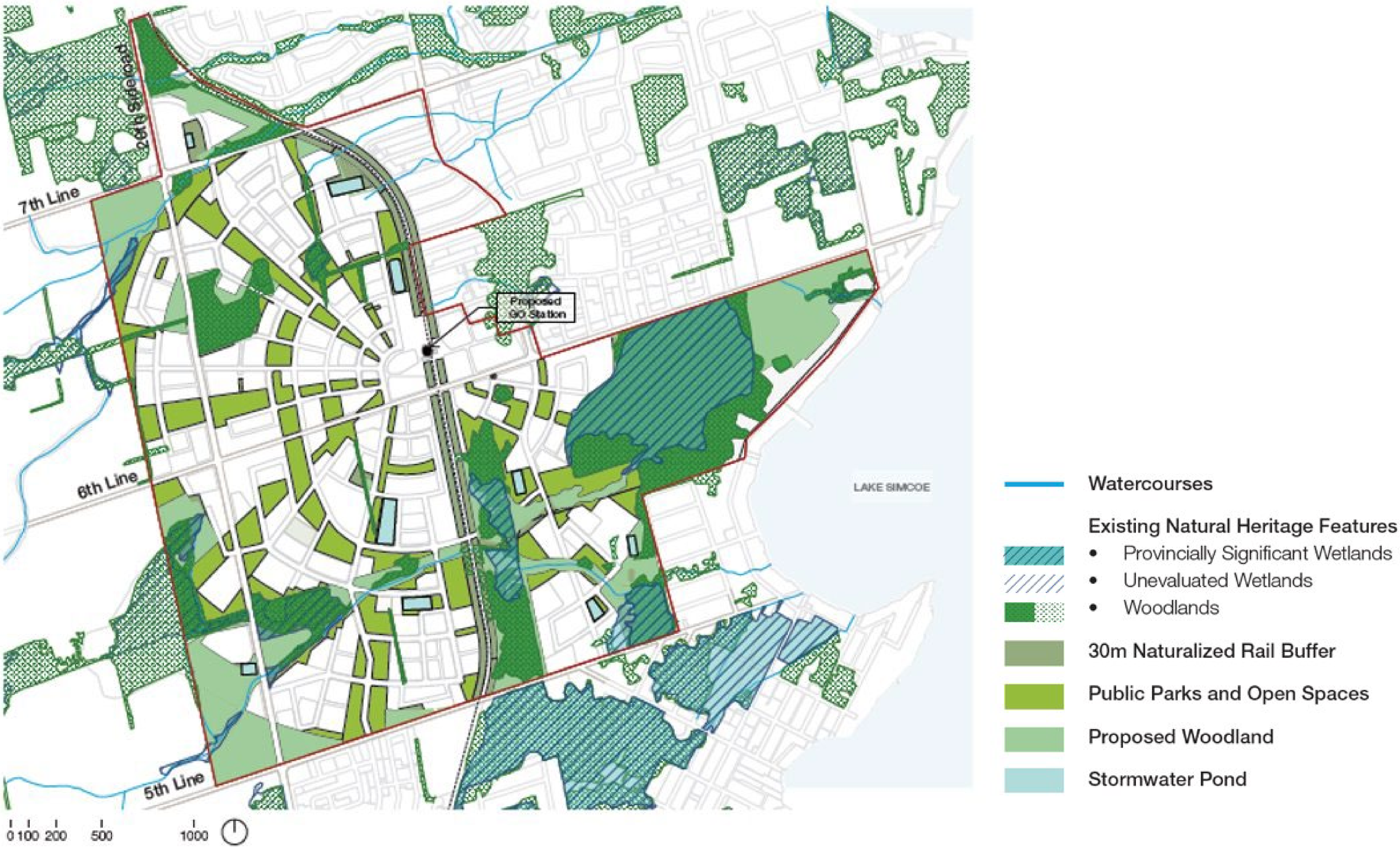
Building Heights



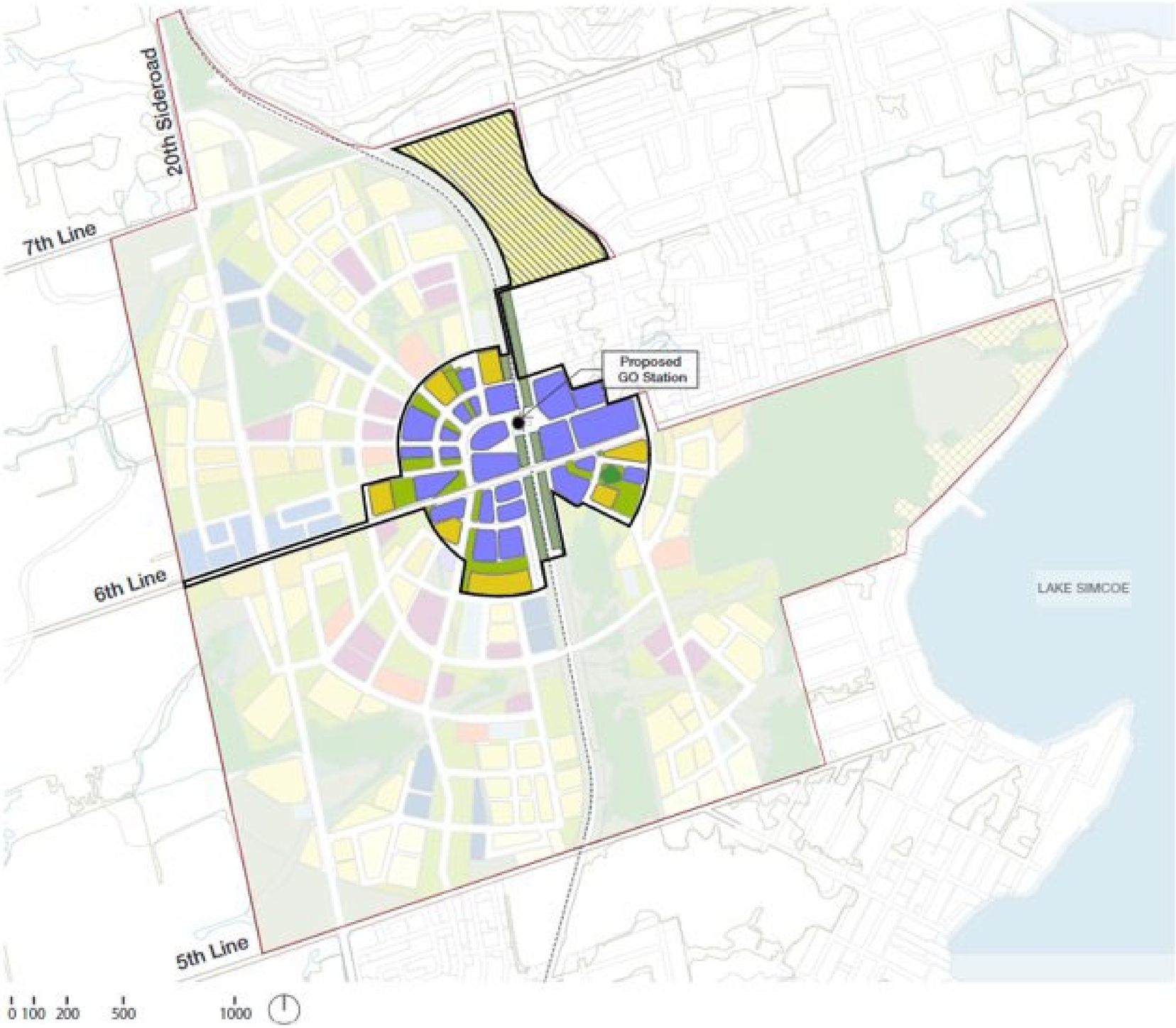
Density


20th Sideroad
7th Line
Proposed
GO Station
6th Line
LAKE SIMCOE
5th Line
0 100 200 500 1000
Floor Space Index
0.5 to 1.0
1.0 to 2.0
1.5 to 2.5
2.0 to 3.0
2.5 to 9.0

Open Space


28th Sideroad
7th Line
Proposed
GO Station
6th Line
LAKE SIMCOE
5th Line
0 100 200 500 1000
Watercourses
Existing Natural Heritage Features
• Provincially Significant Wetlands
• Unevaluated Wetlands
• Woodlands
30m Naturalized Rail Buffer
Public Parks and Open Spaces
Proposed Woodland
Stormwater Pond

Phasing


20th Sideroad
7th Line
Proposed
GO Station
6th Line
LAKE SIMCOE
5th Line
0 100 200 500 1000
Development to 2051

Servicing Master Plan

PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5
EA Process				
Problem or opportunity	**Alternative Solutions**	Alternative Design Concepts for Preferred Solution	Environmental Study Report (ESR)	Implementation
Technical Work				
Document Existing Conditions **Develop Problem and Opportunity Statement**	**Inventory Natural, Cultural, Social, Economic Environment** **Identify and Evaluate Alternative Solutions** **Select Preferred Solution**	Identify and Evaluate Design Concepts for Preferred Solution Identify Impacts and Mitigation Measures Select and Develop Preferred Design	Document EA process and findings in ESR Place ESR on Public Record for Review and Comment	Complete Contract Drawings and Tender Documents (mitigation measures and commitments) Construction and Operation Environmental monitoring
Public Consultation				
Notice of Study Commencement	**Public Information Centre**	Public Information Centre	Notice of Study Completion	

December 2022

What We've Heard

I don't feel the current plan is reflective on conservation of wildlife and the lake.

The Secondary Plan has taken into consideration existing natural heritage constraints including Provincially Significant Wetlands and other natural heritage features to avoid development in these areas. Any subsequent developments will further assess the impact on the natural environment.

Release of water whether via the storm network and/or the wastewater network must meet the criteria set out by the LSRCA and MECP to protect Lake Simcoe and the surrounding natural environment.

Very concerned about the impact on Lake Simcoe and its tributaries, including runoff, disruption to wildlife and natural areas.

The criteria set in place by the LSRCA must be met for quality control to ensure protection of Lake Simcoe. These include removal of 80% of total suspended solids and 80% of annual total phosphorus from all major development areas.

Where would the main access point(s) be for the Orbit and how will traffic flow be managed to not impose on existing neighbourhoods?

The Plan will be encouraging alternative modes of travel, to get to and from the Orbit, including active transportation and transit. A major collector with transit priority will provide access to the Orbit from 7th Line, 6th Line and 5th Line. In addition, access will be via active transportation spines from 20th Sideroad. Traffic flow will be managed by adding additional lanes on arterial and collector roads to help alleviate traffic.

Where will wastewater go and what impact will that have on natural springs and existing wastewater treatment areas? Will our lake be protected?

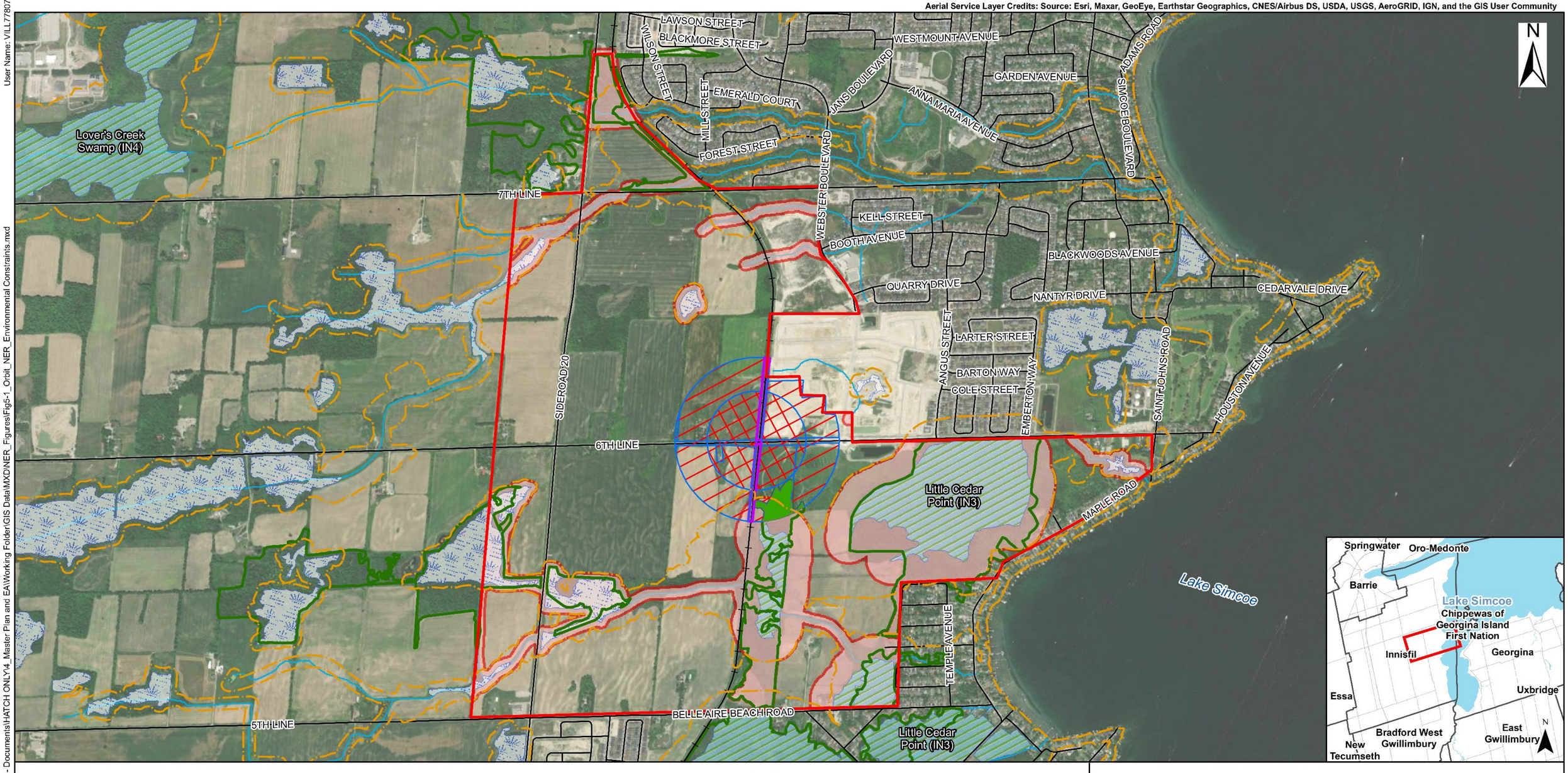
Based on the work that the Servicing Master Plan has undertaken, the wastewater will be directed to the existing Lakeshore Wastewater Treatment Plant (WWTP). The existing plant's capacity will be increased within the same site to accommodate the additional flow. The WWTP complies with the effluent criteria established by the MECP to mitigate any adverse impact to Lake Simcoe.

What is the transportation plan? It doesn't seem like the Uber system is working well for many.

The TMP recommends several improvements which will support a multi-modal transportation system. Improvements include widening of a number of different roadways within the study area, adding multi-use trails to 6th Line, 7th Line and 20th Sideroad and dedicated cycle lanes along Webster Boulevard, a secondary trail along the Barrie rail corridor, delivery of the proposed Innisfil GO Station, as well as a transit system with scheduled fixed-route services.

Existing Environment
Natural Heritage Features

Aerial Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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Legend

- Study Area
- LSRCA Regulated Area

Minister's Zoning Order (MZO)

- Environmental Protection Area (EPA)
- Open Space (OS)
- Transit Oriented Community 1 (TOC 1)
- Transit Oriented Community 2 (TOC 2)
- Track
- Road
- Watercourse
- Significant Woodland (within Study Area)
- Provincially Signficant Wetland
- Not Provincially Significant or Unevaluated Wetland
- Environmental Constraints

DATA SOURCES:

1. Spatial referencing - NAD 83 UTM Zone 17
2. Watercourses, Wetlands, Roads and Railways - Ontario Open Data
3. LSRCA Data and Natural Environment Areas provided by Town of Innisfil, 2022

0 250 500 1,000 Meters

1:20,000

Project:	**Orbit Potential Innovation Plan (OPIP)**		
Figure Title:	**Natural Environment Report Environmental Constraints**		
Prepared By:	HATCH	**Date: August 08 2022**	
Version: A	**Review:** S. STUART	**Figure:** 5-1	**Page:** -

Existing Environment
Cultural Heritage Resources

Existing Conditions

- Five (5) known Built Heritage Resources (BHRs) and Cultural Heritage Landscapes (CHLs) were identified within the Study Area

- Two (2) are designated under Part IV of the *Ontario Heritage Act*, and three (3) are listed on the Municipal Heritage Register

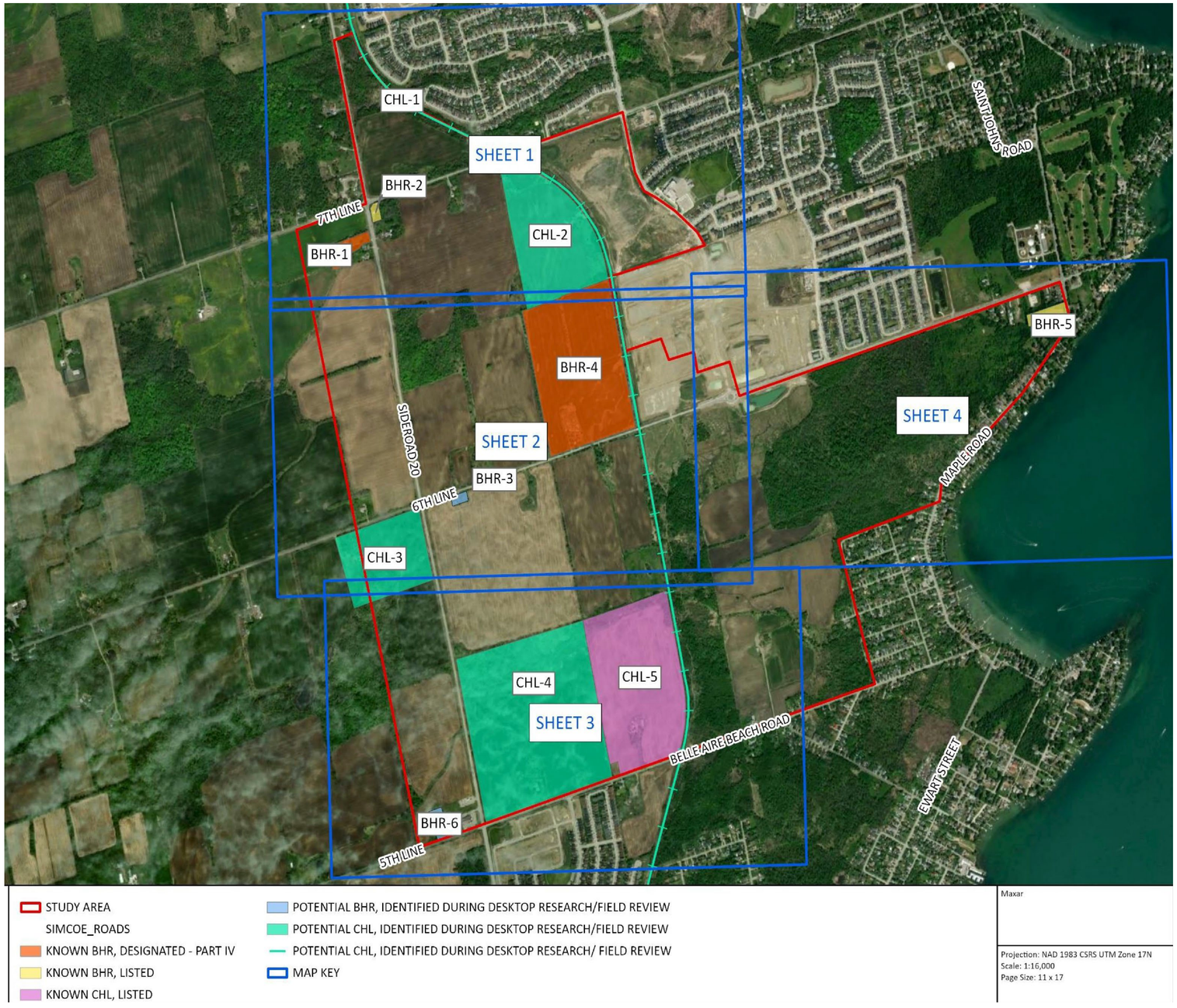
Recommendations

- Six (6) additional potential BHRs and CHLs were identified as part of the assessment

- Cultural Heritage Evaluation Reports should be completed for the six potential BHRs and CHLs identified within the Study Area to determine Cultural Heritage Value or Interest

- Three CHLs have been recommended for inclusion in the Town of Innisfil's Municipal Heritage Register

- Land use development in the Study Area should account for conservation of the identified BHRs and CHLs, such as through policies



Existing Environment
Archaeological Resources

Existing Conditions

- County of Simcoe Archaeological Management Plan has identified the majority of the Study Area as exhibiting archaeological potential

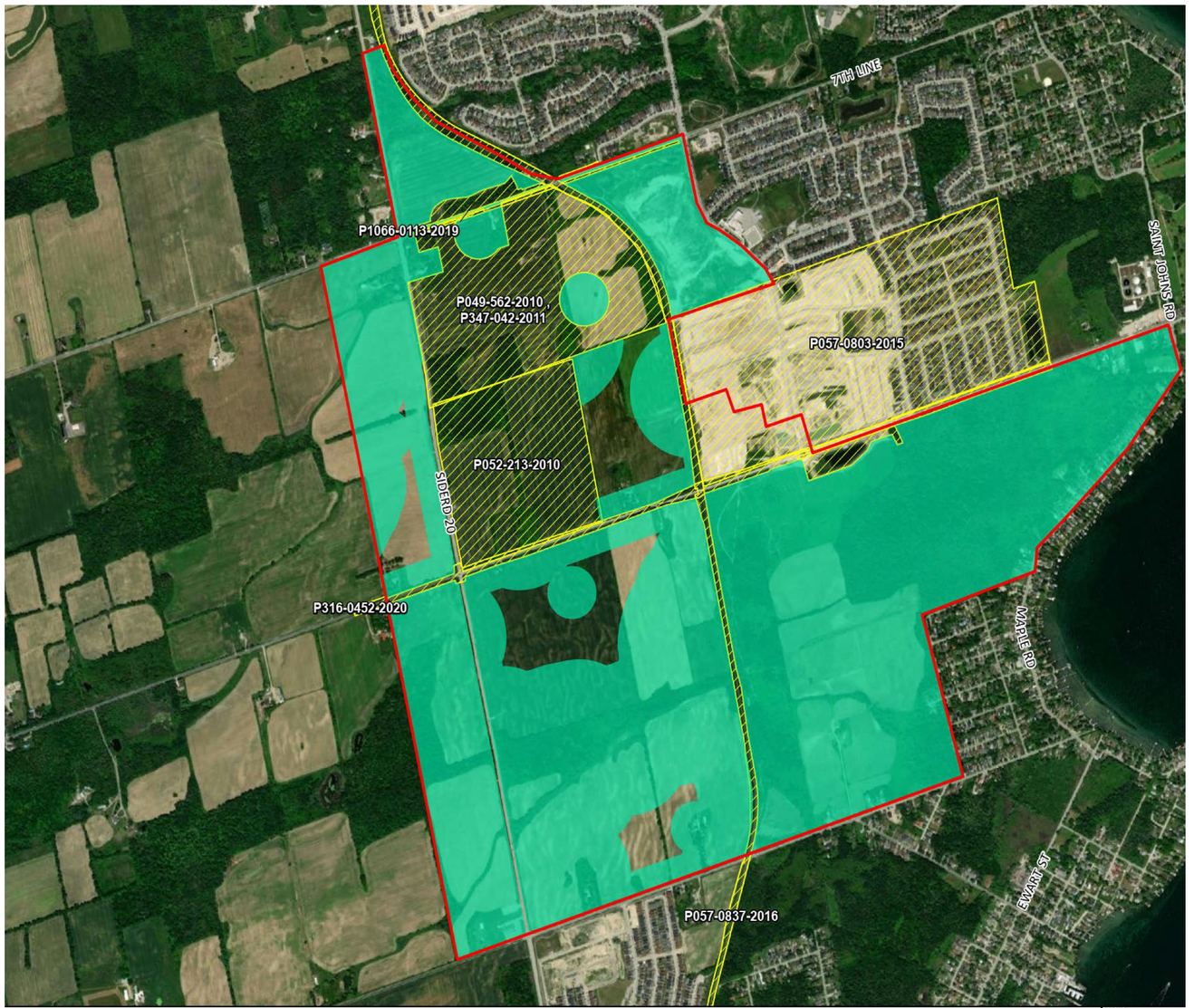
- ~73% of the Study Area, identified as having archaeological potential due to the potential presence of Indigenous and/or Euro-Canadian resources

- Five sites have been previously documented and identified as meeting the provincial criteria for Cultural Heritage Value or Interest and have been recommended for a Stage 3 Archaeological Assessment

Recommendations

- Pedestrian surveys will be required on all active or former agricultural lands within the Study Area, and test pit surveys will be required in woodlots

- Any lands within the Study Area that have not been previously assessed will require a Stage 1 Archaeological Assessment



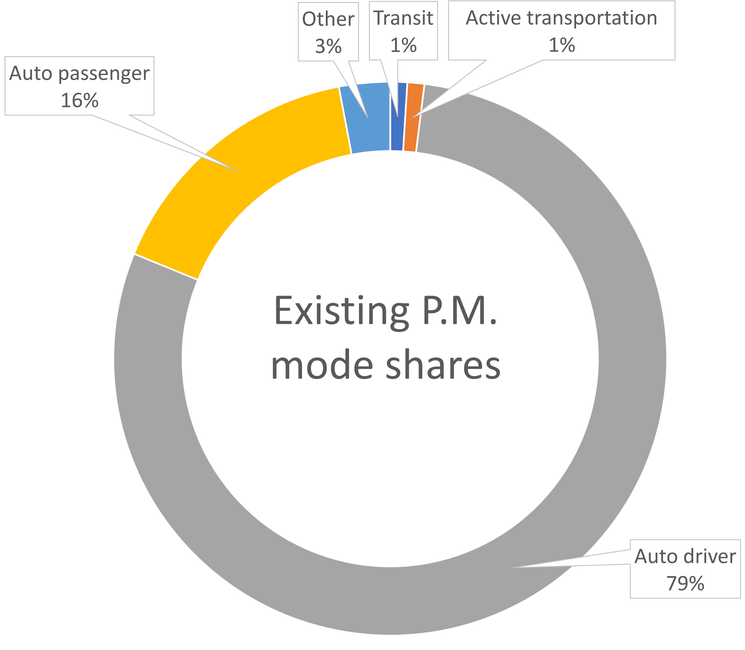
Transportation Existing Conditions

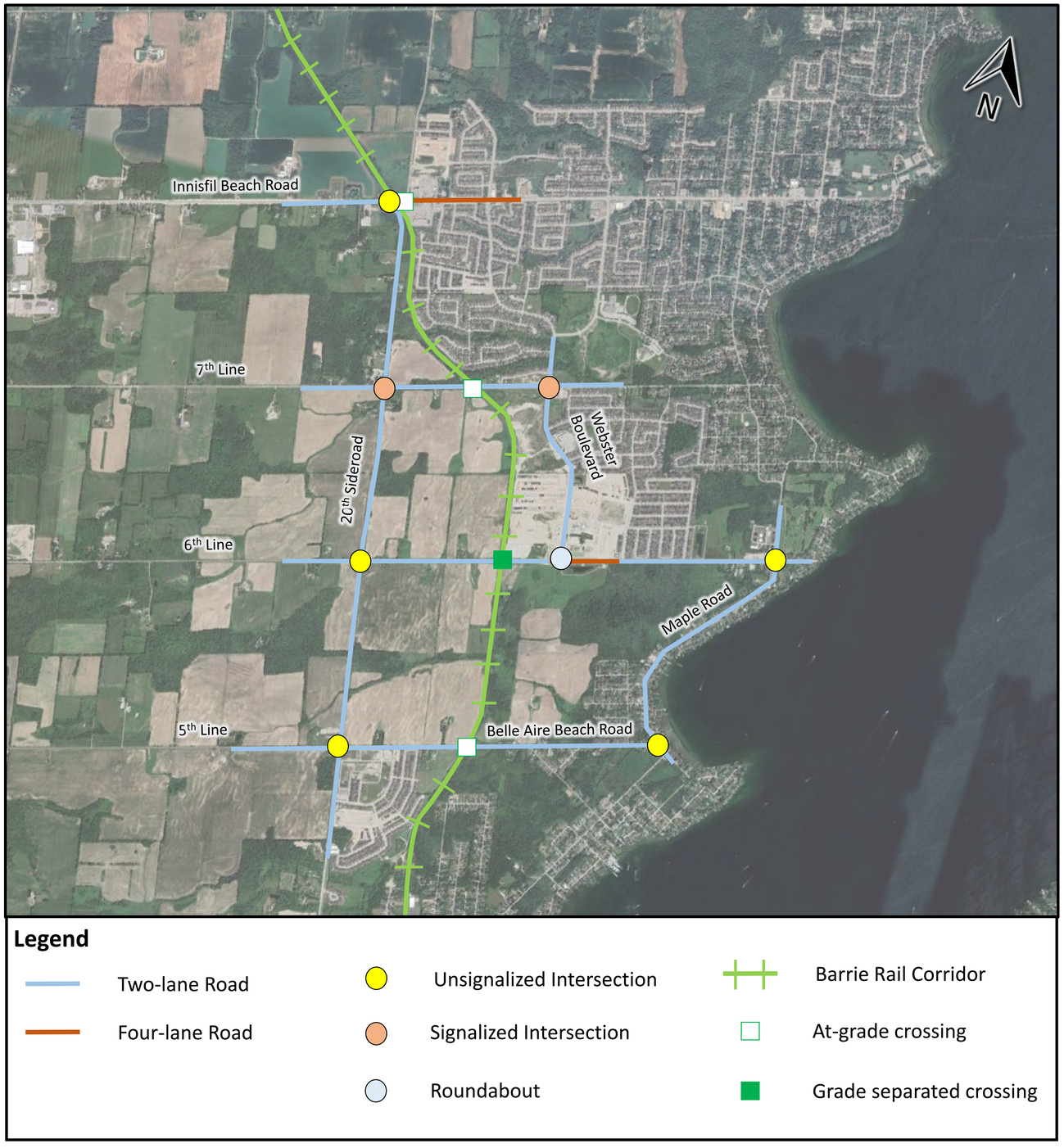
Existing Conditions

- Existing roads that will likely connect to Orbit at completion include:
  - 6th Line
  - 20th Sideroad
  - 7th Line
  - 5th Line/Belle Aire Beach Road
  - Webster Boulevard

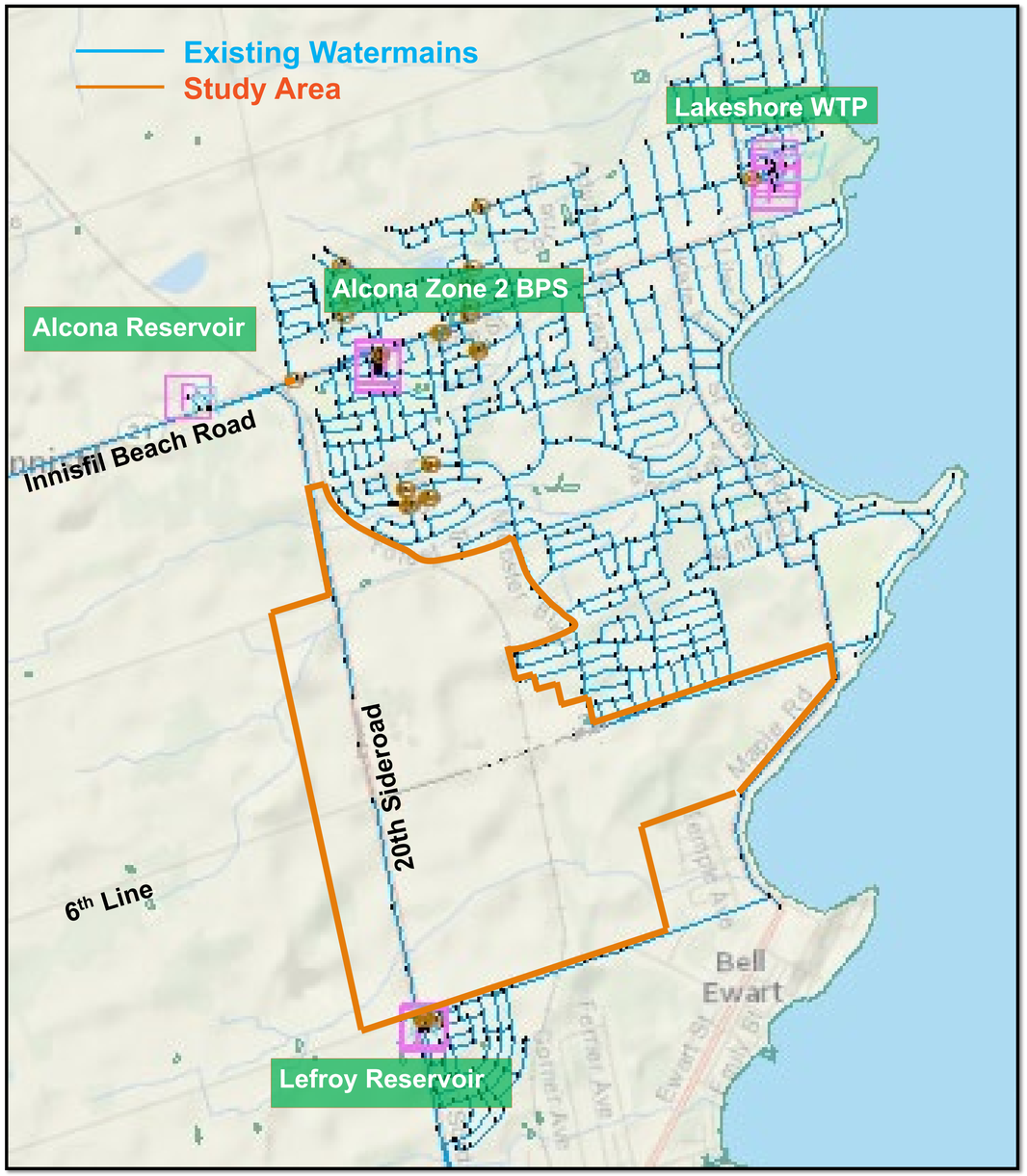
- Paths for pedestrians and cyclists are typically restricted to paved shoulders on arterials and major collectors (though Webster Boulevard has sidewalks)

- The Town provides local on-demand transit services through partnerships with Uber, Driverseat, and GoGo Grandparent.





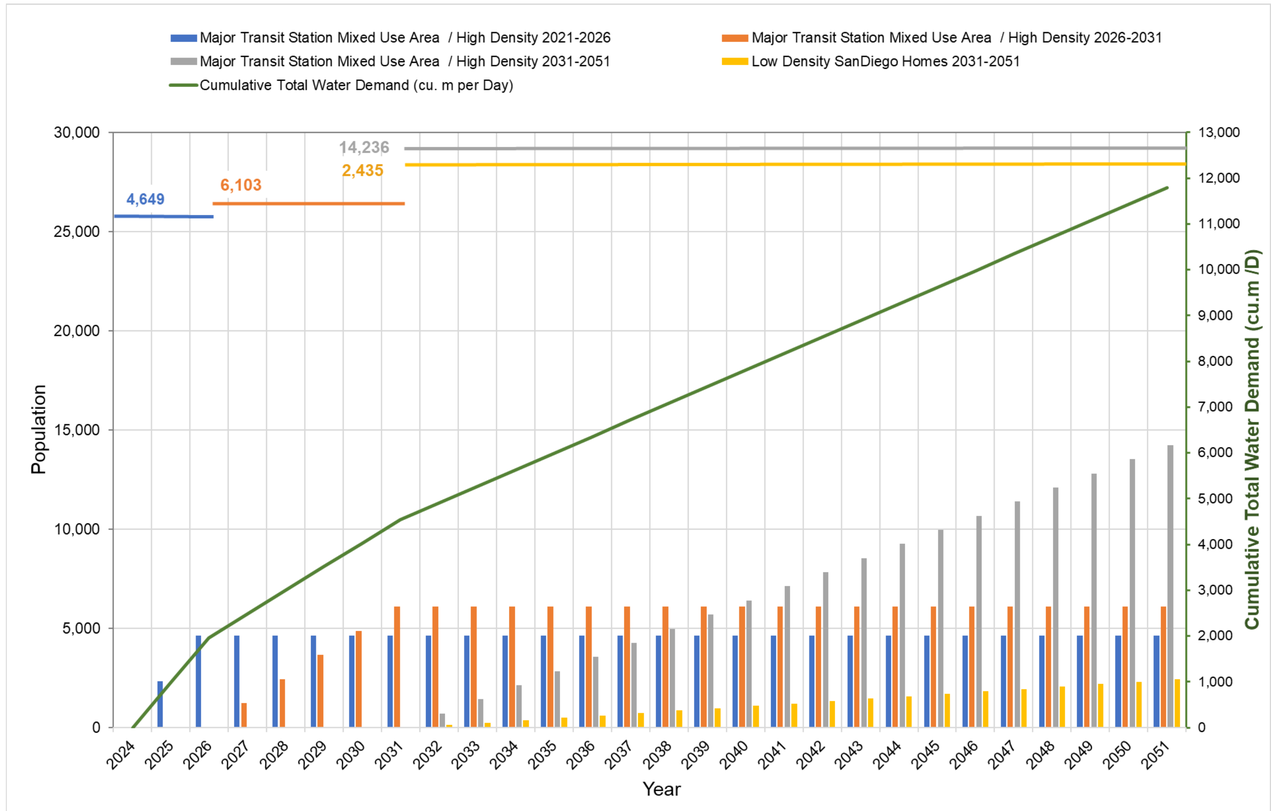
Water Existing Conditions and Design Criteria



Lakeshore Water Treatment Plant (WTP) is the only source for the Innisfil Lake Simcoe Drinking Water System and provides water to seven communities, as well as the Town of Bradford. Its rated capacity is at 38,000 m^3/day with provision to expand to 85,000 m^3/day within the same building with the addition of a new intake.

There are two pressure zones (Zone 1 and Zone 2) within Alcona water distribution system and one reservoir (Alcona). Lefroy Reservoir is fed from the Alcona Reservoir via 600 mm 20th Sideroad trunk watermain branching off to Belle Aire Beach Road.

OPIP Phasing Plan

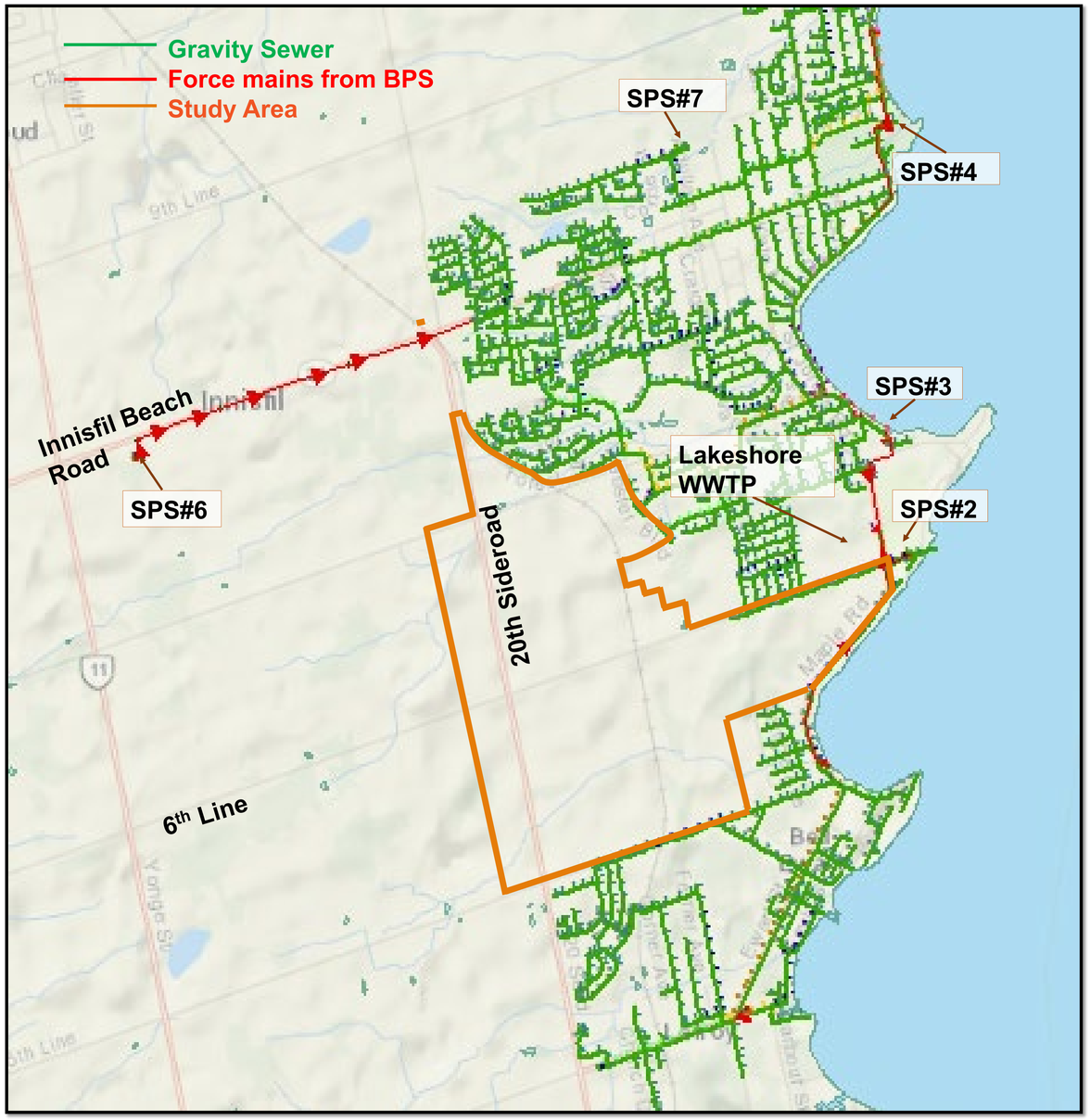


Forecasted Total Population: 27,424 people (Residential 24,927; Employment 2,497)

Design Criteria

	Unit	Residential	Industrial and Commercial
Average Day Demand	L/day per person	250	128
Maximum Day Factor		1.8	1.8
Maximum Day Demand	L/day per person	450	230
Maximum Day Flow	m^3/day	11,217	575
Total Maximum Day Flow	**m^3/day**	**~11,800**	
Minimum Required Water Storage Volume	To be in compliance with MECP guidance for calculation and with minimum 130 L/s fire flow.		

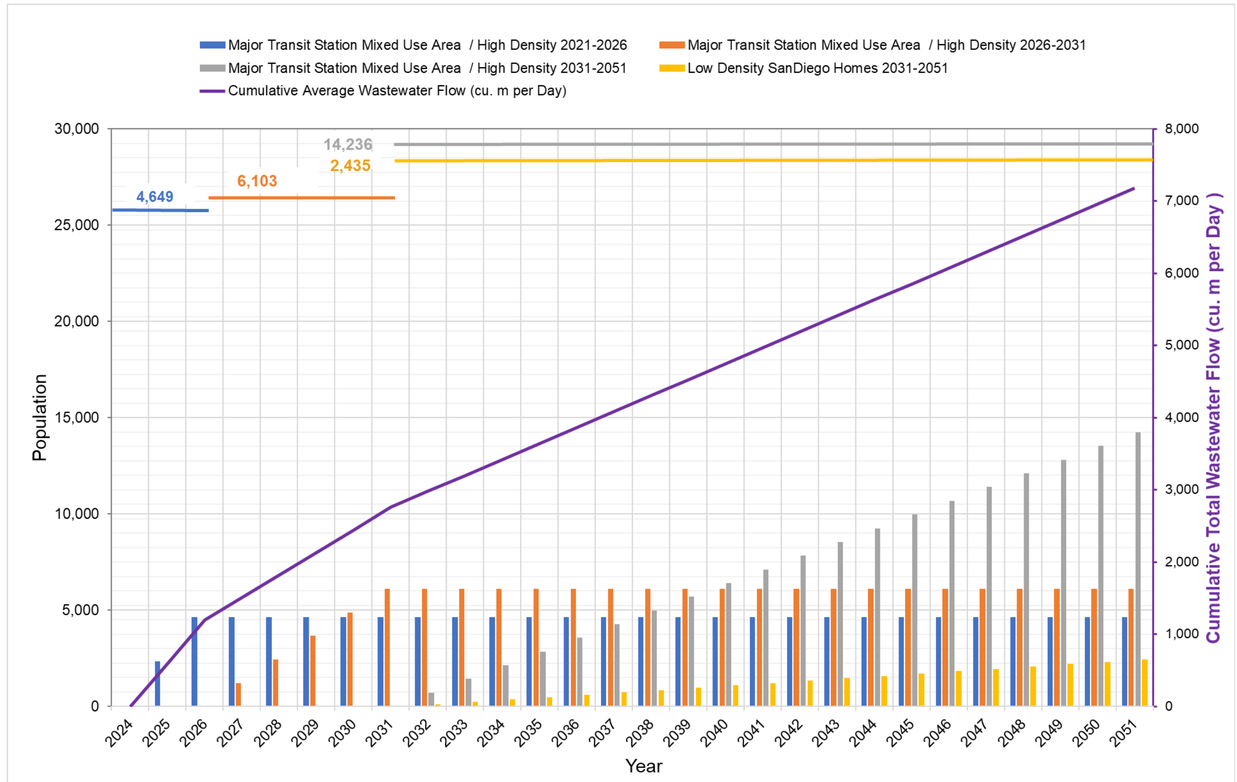
Wastewater Existing Conditions and Design Criteria



Lakeshore Wastewater Treatment Plant (WWTP) treats wastewater from Alcona and the shoreline, from Lefroy-Belle-Ewart to Big Bay Point. Its rated capacity is 17,000 m3/day with the provision to expand to 25,000 m3/day at Stage 3 and ultimately to 40,000 m3/day at Stage 4.

New Sewage Pumping Station (SPS) #2 with a 750 mm sewer was designed to handle existing flow coming along 6th Line.

OPIP Phasing Plan



Forecasted Total Population: 27,424 people (Residential 24,927; Employment 2,497)

Design Criteria

	Unit	Value
Average Residential Flow	L/day per person	325
Average Industrial and Commercial Flow (20 m^3/ha/d)	L/day per person	128
Harmon Peak Factor	2.6 (Residential) 3.5 (Commercial and Industrial)	
Average Day Flow	**m^3/day**	**7,175**
Peak Flow	**m^3/day**	**28,619**

Stormwater Existing Conditions

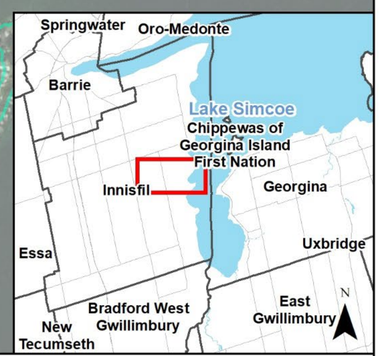
User Name: sank97585

Aerial Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

CA 552 | 0.05 ha
CA 553 | 0.14 ha
CA 554 | 0.40 ha
CA 555 | 0.07 ha
CA 556 | 0.08 ha
CA 504-2 | 0.22 ha
CA 602-2 | 0.18 ha
CA 502 | 4.33 ha
CA 651-2 | 0.21 ha
CA 654 | 0.16 ha
CA 601 | 0.46 ha
CA 602 | 0.14 ha
CA 651-3 | 0.11 ha
CA 653 | 0.14 ha
CA 651 | 0.37 ha
CA 655 | 0.31 ha
CA 652 | 0.14 ha
CA 652-2 | 0.12 ha
CA 601-2 | 0.16 ha
CA 751 | 0.35 ha
CA 704 | 0.22 ha
CA 751-2 | 0.19 ha
CA 702 | 0.53 ha
CA 703 | 0.42 ha
CA 701 | 3.43 ha

The existing (Pre-Development) catchments have the following peak flows during a 1 in 100 year storm event:

Catchment	Area (ha)	Peak Flow (L/s)	Peak Flow (m^3/s)	Catchment	Area (ha)	Peak Flow (L/s)	Peak Flow (m^3/s)
502	437.40	6599	6.60	655	30.80	1407	1.41
552	5.00	308	0.31	701	345.80	9946	9.95
553	13.90	595	0.60	702	53.00	2412	2.41
554	39.80	1907	1.91	703	42.20	1473	1.47
555	6.80	756	0.76	704	22.40	1005	1.01
556	8.50	755	0.76	751	35.20	2056	2.06
601	46.20	1020	1.02	601-2	15.90	699	0.70
651	37.40	2569	2.57	651-2	21.20	1418	1.42
652	14.10	971	0.97	651-3	10.80	895	0.90
653	13.70	1275	1.28	652-2	11.90	752	0.75
654	16.30	1491	1.49	751-2	19.30	1198	1.20



Legend

- Study Area
- Existing Pond
- 5 m Contours
- Catchment Outlet
- Watercourse
- Pre-Development Catchments within Study Area (Catchment Name | Area)
- Pre-Development Catchments outside Study Area
- Transit Oriented Community 1 (TOC 1)
- Transit Oriented Community 2 (TOC 2)
- Not Provincially Significant or Unevaluated Wetland
- Provincially Significant Wetland
- 1:100 Year Floodplain
- Regional storm event
- LSRCA Regulation Area

DATA SOURCES:

Roads and Railways - Ontario Open Data
Watercourses - Land Information Ontario
Property Boundaries - City of Toronto Open Data

0 220 440 880 Meters

1:17,517

Project:	**Orbit Potential Innovation Plan (OPIP)**		
Figure Title:	**Existing (Pre-Development) Catchments**		
Prepared By:	HATCH	**Date: December 08 2022**	
Version: A	**Review:** -	**Figure:** -	**Page:** -

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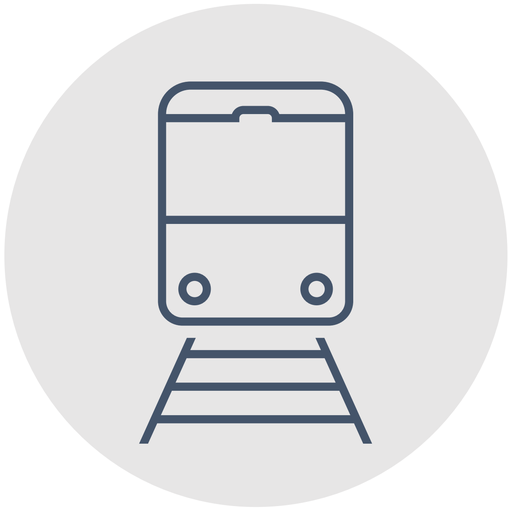
Problem and Opportunity Statement

Problem

The Town of Innisfil is undertaking the OPIP Secondary Plan in order to plan for a new community within the Town of Innisfil with a focus on preserving agricultural lands and natural landscapes, and to encourage a mix of small town and urban living. The infrastructure and municipal services needed to support this development do not currently exist.

Opportunity

The OPIP Secondary Plan and Servicing Plan are concurrently being developed to guide future development and municipal infrastructure services within the study area.



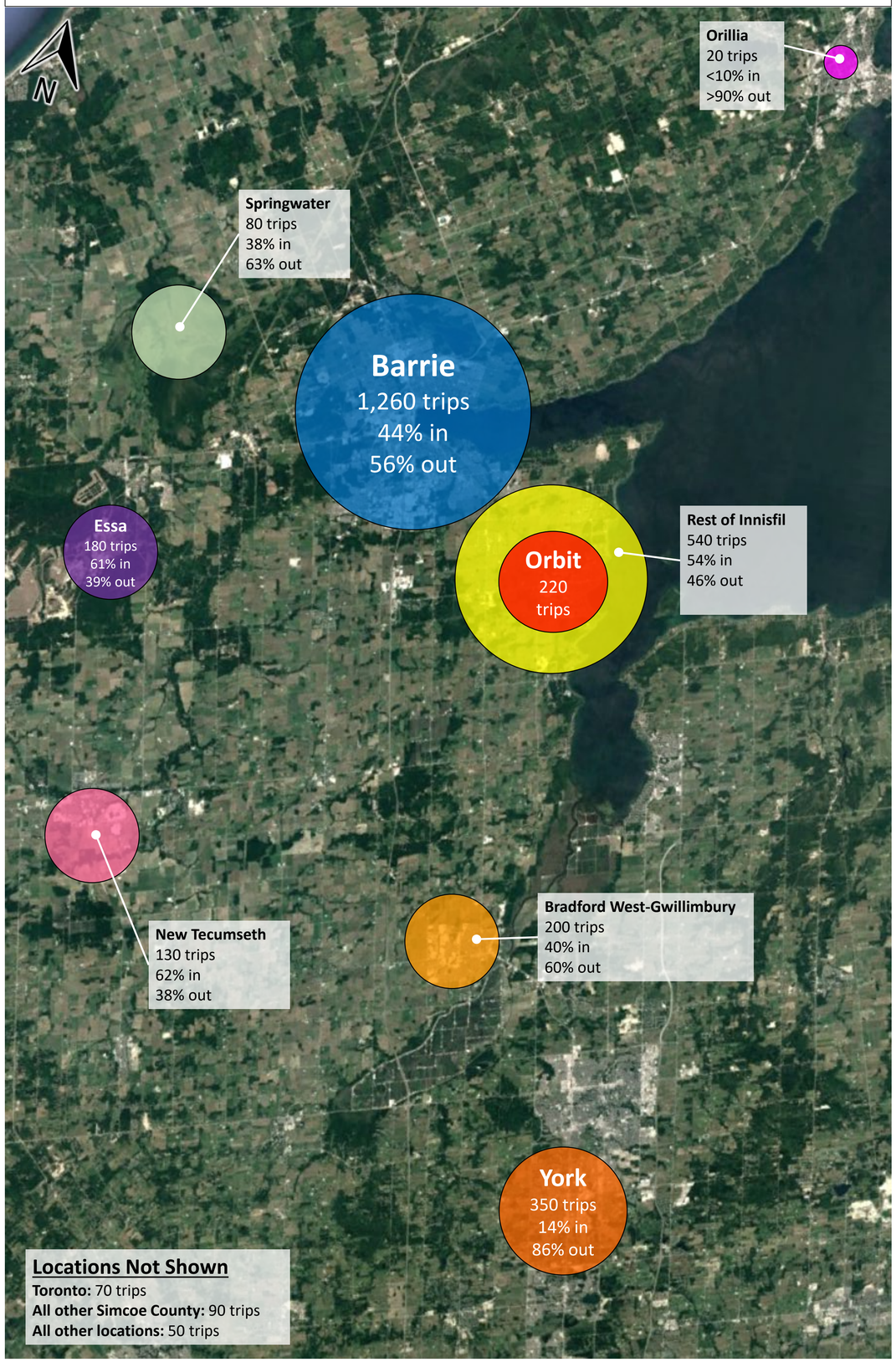
Transportation Objectives

- The Orbit aims to fulfil the objectives of the Innisfil Official Plan and Transportation Master Plan:
  - Increase transit share of trips to 20%
  - Increase pedestrian and cyclist (i.e., active transportation) share of trips to 15%
  - Ensure safe accommodation of all road users, regardless of age or ability
- The Orbit also aims to protect for future growth beyond 2051

Transportation 2051 Conditions

- By 2051, Orbit will have approximately 25,000 residents and 2,500 employees
- Orbit will generate approximately 5,800 peak hour trips, but only 3,200 will be taken by automobile
- By reducing automobile use in this way, the Orbit will:
  - Improve residents' health
  - Reduce pollution
  - Improve equity and accessibility
  - Improve employment opportunities

2051 Peak Hour Vehicle Trips to and from Orbit

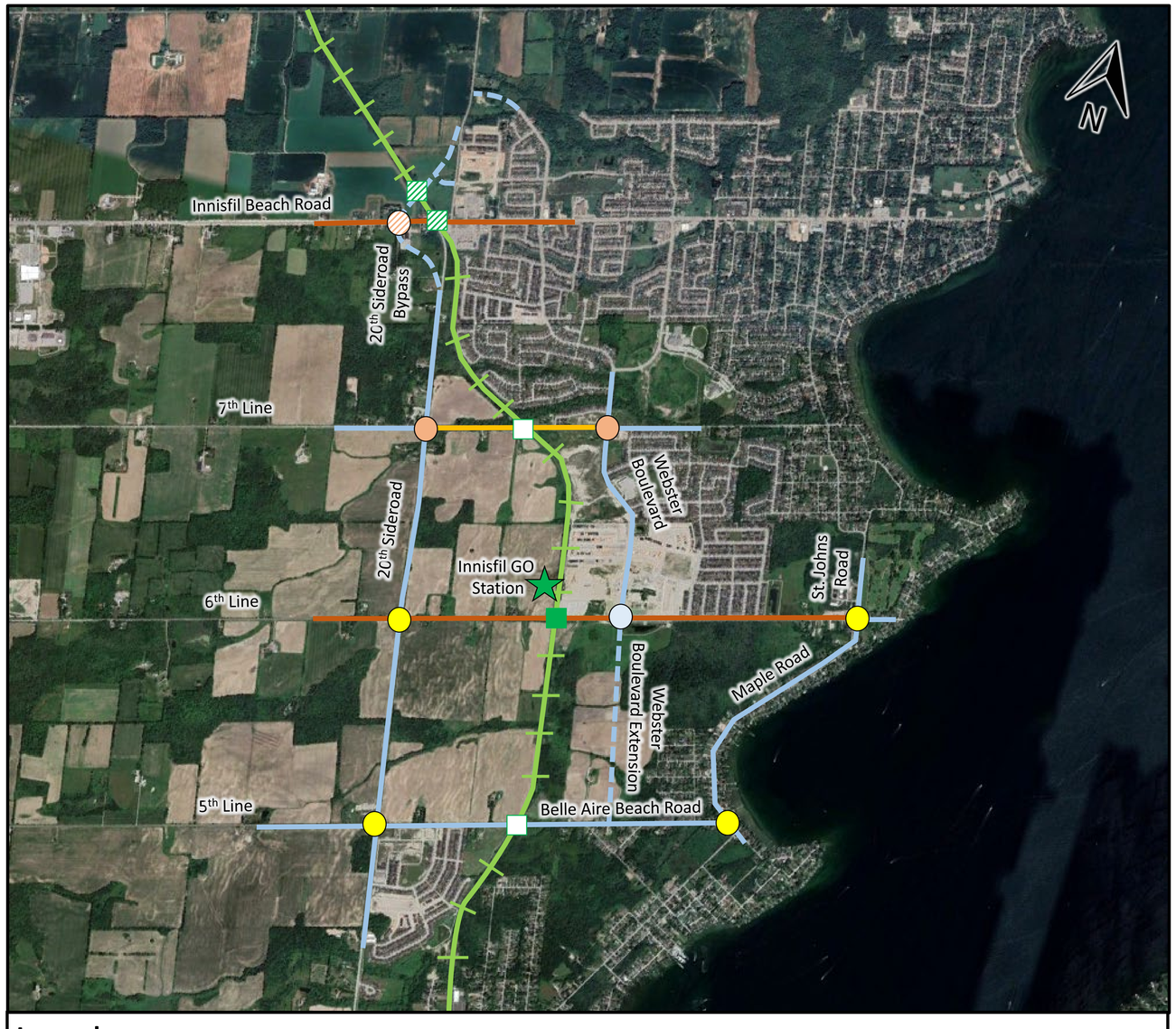


Transportation Recommendations by 2051

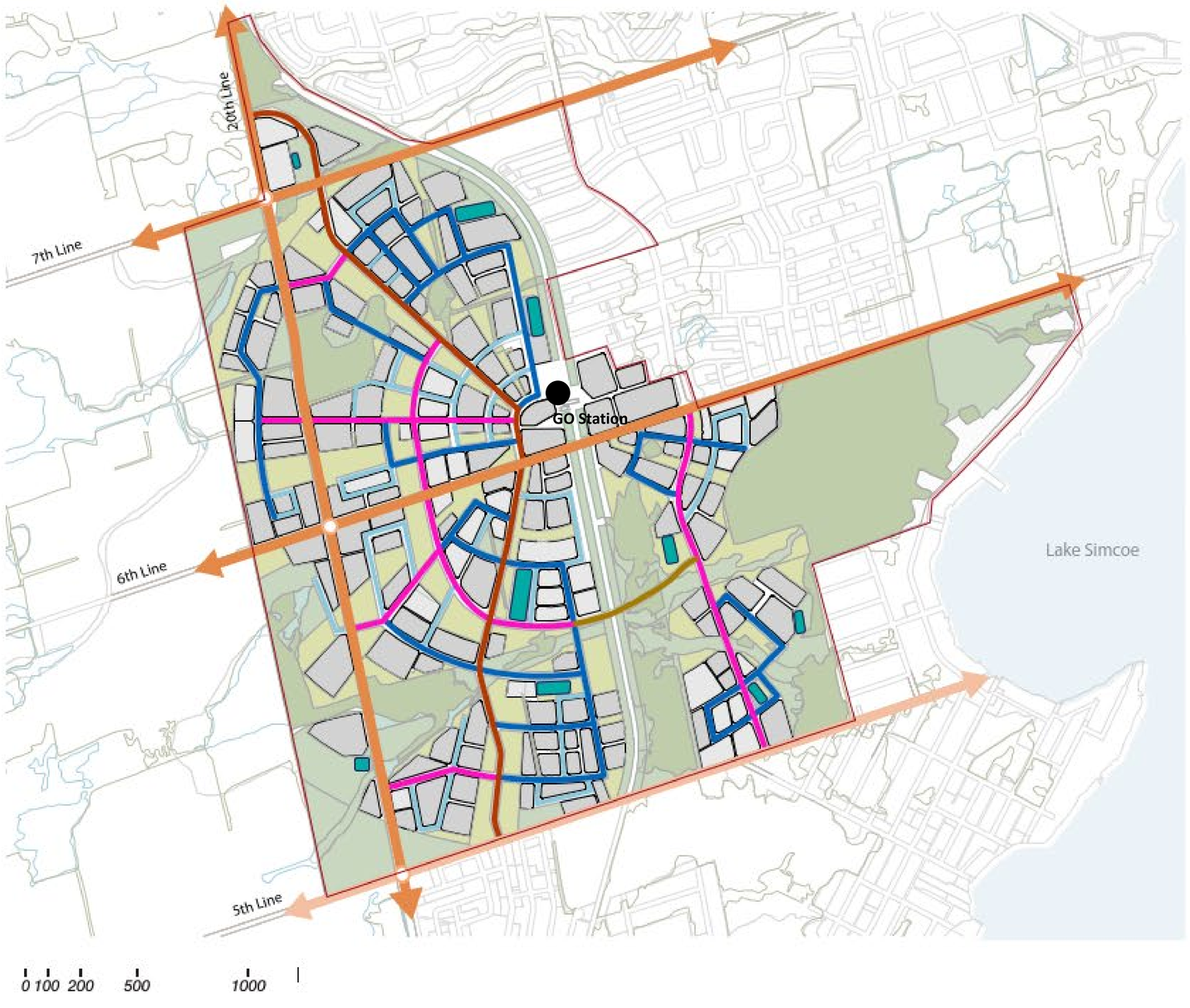
- Recommendations include the implementation of TMP planned upgrades, notably:
  - 6th Line widening from two to four lanes between County Road 27 and St. Johns Road
  - 7th Line widening from two to three lanes between 20th Sideroad and Webster Boulevard
  - 20th Sideroad Bypass near Innisfil Beach Road
  - Webster Boulevard extension from 6th Line to 5th Line
  - Multi-use trails along 6th Line, 7th Line, 20th Sideroad, and dedicated cycle lanes along Webster Boulevard
  - Secondary trail along the Barrie rail corridor between 7th Line and Belle Aire Beach Road
  - Deliver the proposed Innisfil GO Station
  - Deliver a transit system with scheduled fixed-route services

- Future intersection control treatments (notably at 6th Line & 20th Sideroad) to be determined in subsequent studies.

- Recommend revisiting prior analysis undertaken for 6th Line EA and 7th Line EA to ensure consistency with most up-to-date planning targets.

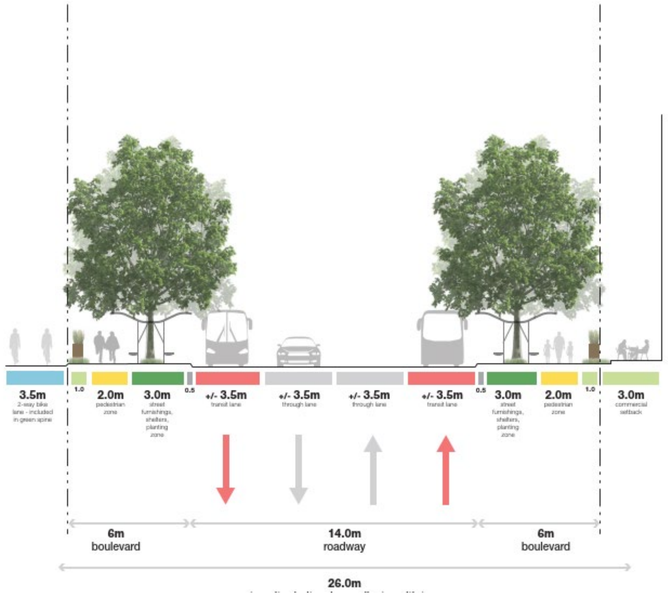


Transportation Road Network

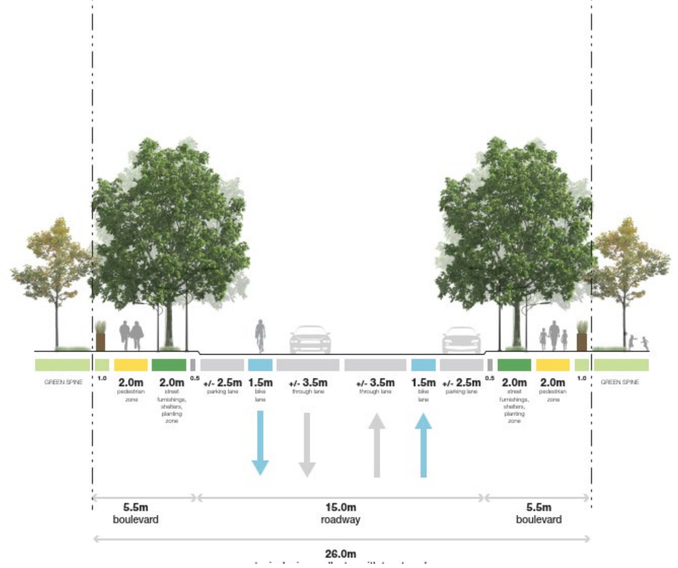


Transportation Streets and Blocks

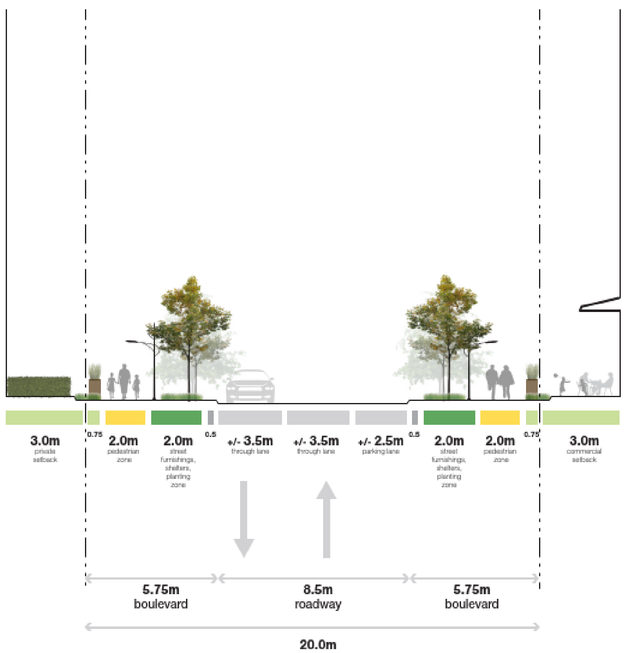
Minor Collector – Transit Priority



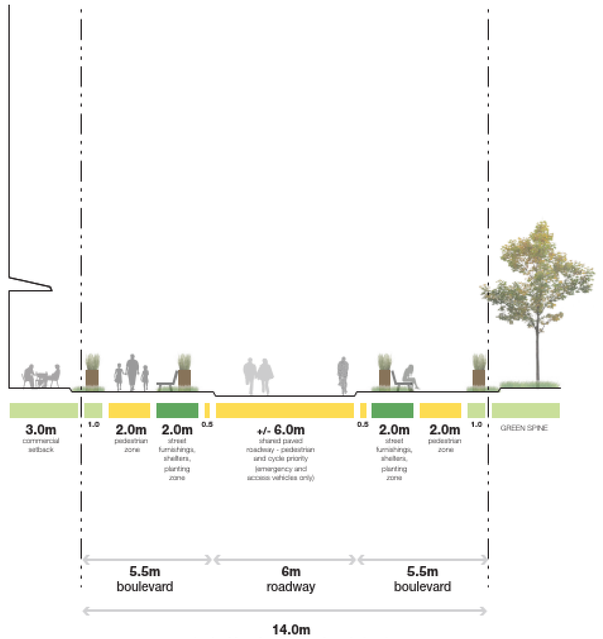
Minor Collector



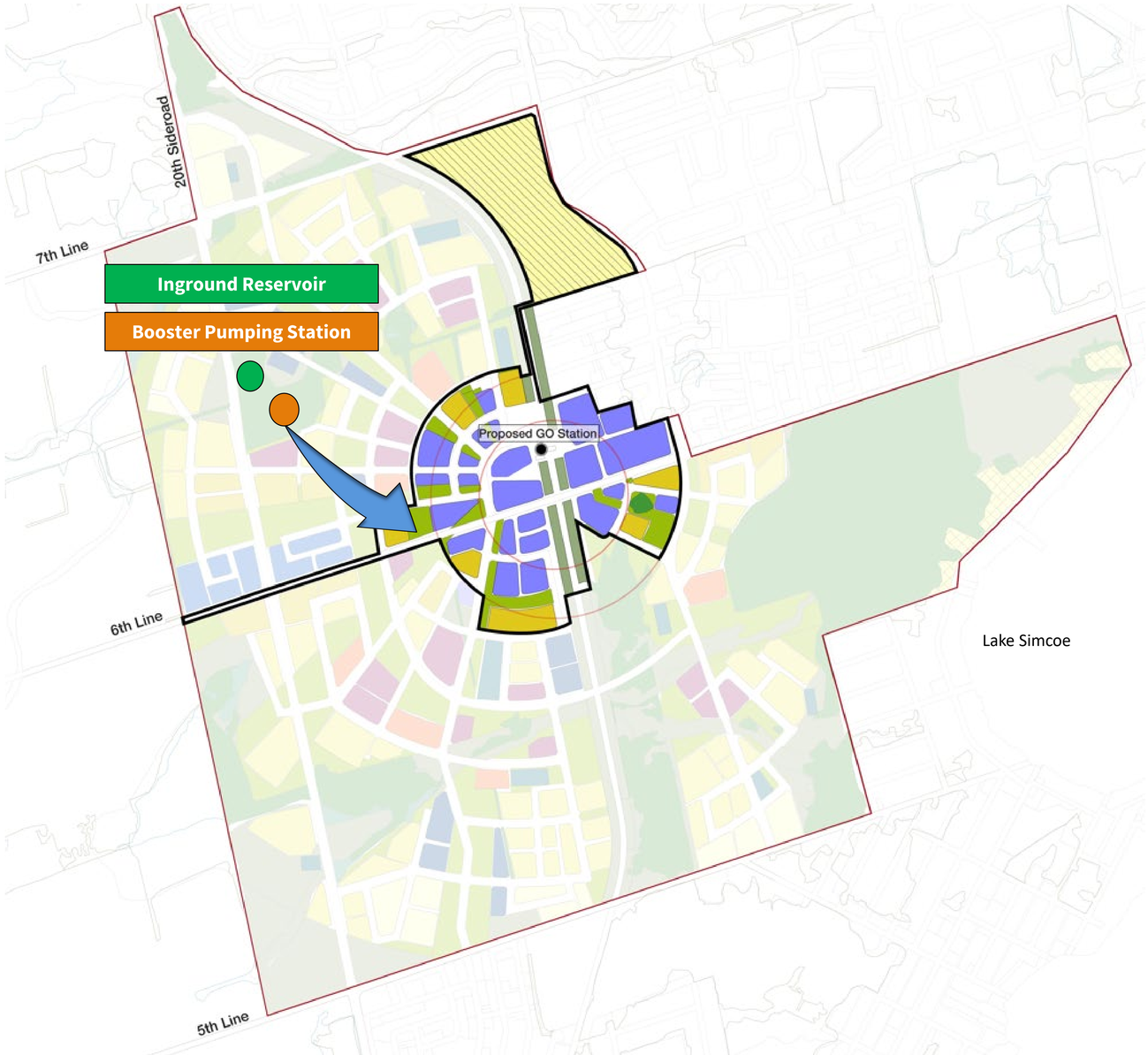
Local Street Urban



Local Street Neighbourhood



Water Alternative 1



Alternative 1 – Supply from Alcona System with an Inground Reservoir

- Lakeshore WTP capacity expansion with new second intake.
- Pipe capacity increase from Lakeshore WTP to Alcona Reservoir and Alcona trunk watermain on 20th Sideroad.
- Orbit inground reservoir on highest ground elevation, filled by gravity from the watermain on 20th Sideroad.
- Orbit Booster Pump Station pumps water from the inground Reservoir to OPIP study area.

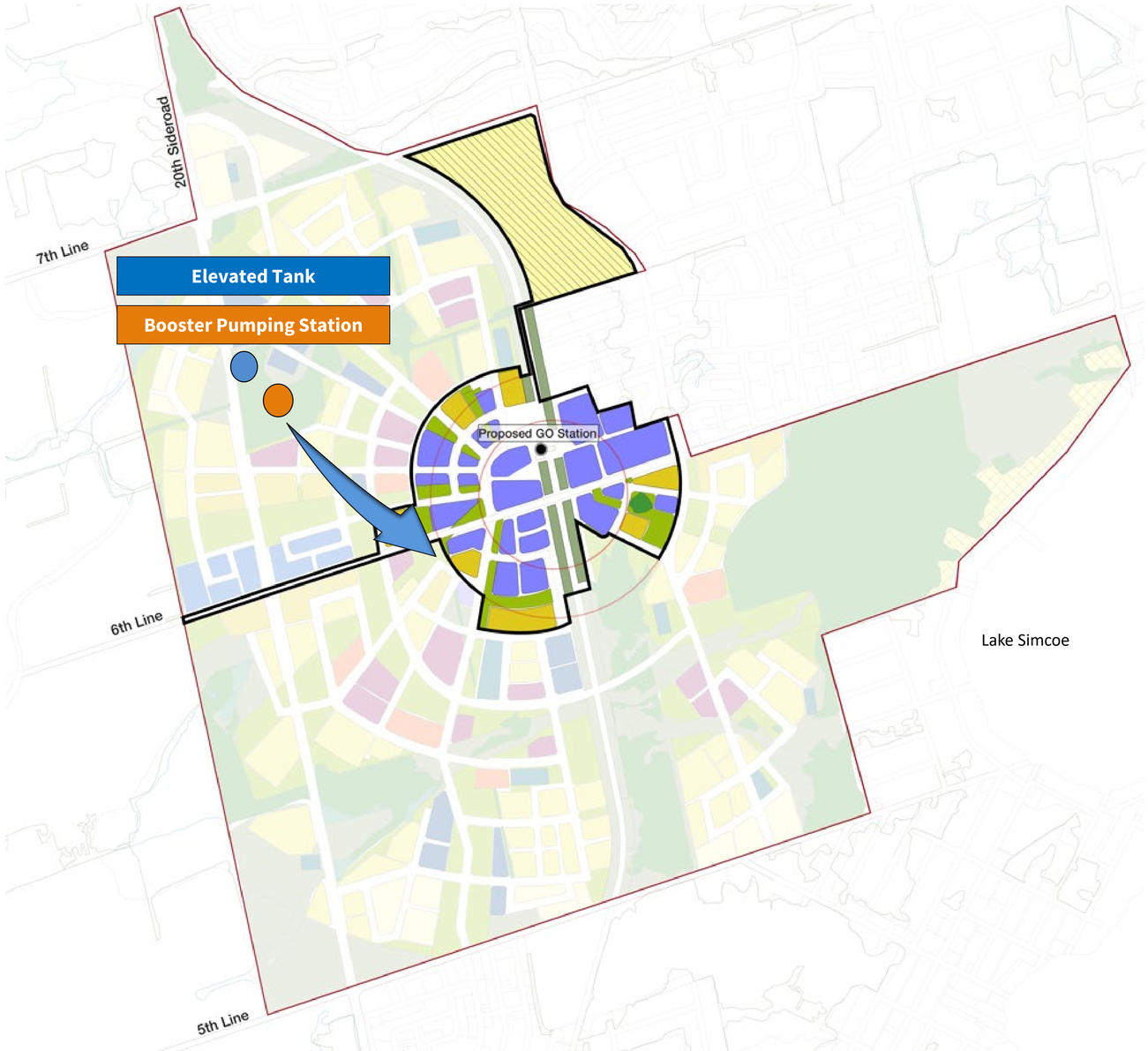
Pros:

- Increased water flow through Alcona Reservoir.
- Inground reservoir is less visible than an elevated tank.
- Orbit pressure zone can be extended to high elevation areas in existing Zone 1 to increase the level of service.
- Emergency supply can be pumped from Orbit reservoir to 20th Sideroad.

Cons:

- Future growth in the OPIP area will require delineation of pressure zone of the first phase of the OPIP growth area.
- Continuous pumping is required, potentially using more energy.

Water Alternative 2



Alternative 2 – Supply from Alcona System with Elevated Tank

- Lakeshore WTP capacity expansion with new second intake.
- Pipe capacity increase from Lakeshore WTP to Alcona Reservoir and Alcona trunk watermain on 20th Sideroad.
- Orbit Booster Pumping Station pressurizes the Orbit Pressure zone and fills the Elevated Tank.
- Orbit Elevated Tank on the highest ground elevation, filled by the Booster Pumping Station.

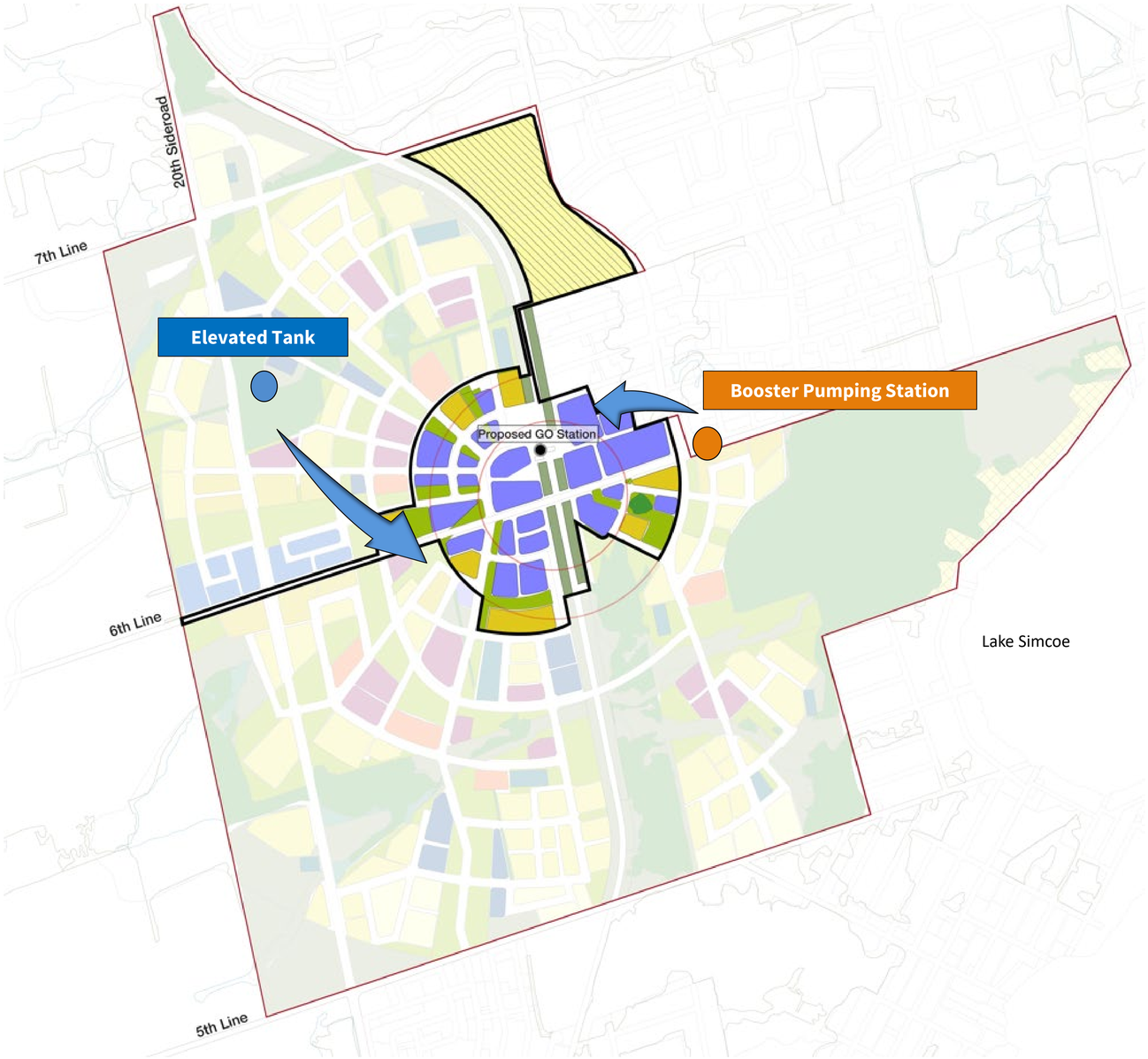
Pros:

- Increases water flow through Alcona Reservoir.
- Orbit pressure zone can be extended to high elevation areas in existing Zone 1 to increase the level of services.
- Emergency supply can be pumped from Orbit tank to the watermain on the 20th Sideroad.
- Elevated storage tank allows for pumping cycles to be optimized for energy efficiency.

Cons:

- High visibility of elevated tank.
- Depending on the elevated tank selected, future upgrades for additional capacity might be limited.
- Future growth of the OPIP area will require re-delineation of the first phase of the growth.

Water Alternative 3



Alternative 3 – Supply from Alcona System Zone 1

- Lakeshore WTP capacity expansion with new second intake.
- Pipe capacity upgrades from the Lakeshore WTP along St. Johns Road to the Orbit connection on 6th Line.
- Orbit Booster Pumping Station on the 6th Line pressurizes the Orbit Pressure Zone with supply from Zone 1.
- Orbit Elevated Tank with high water level to be between 285 and 291m on high ground elevation providing storage to the study area.

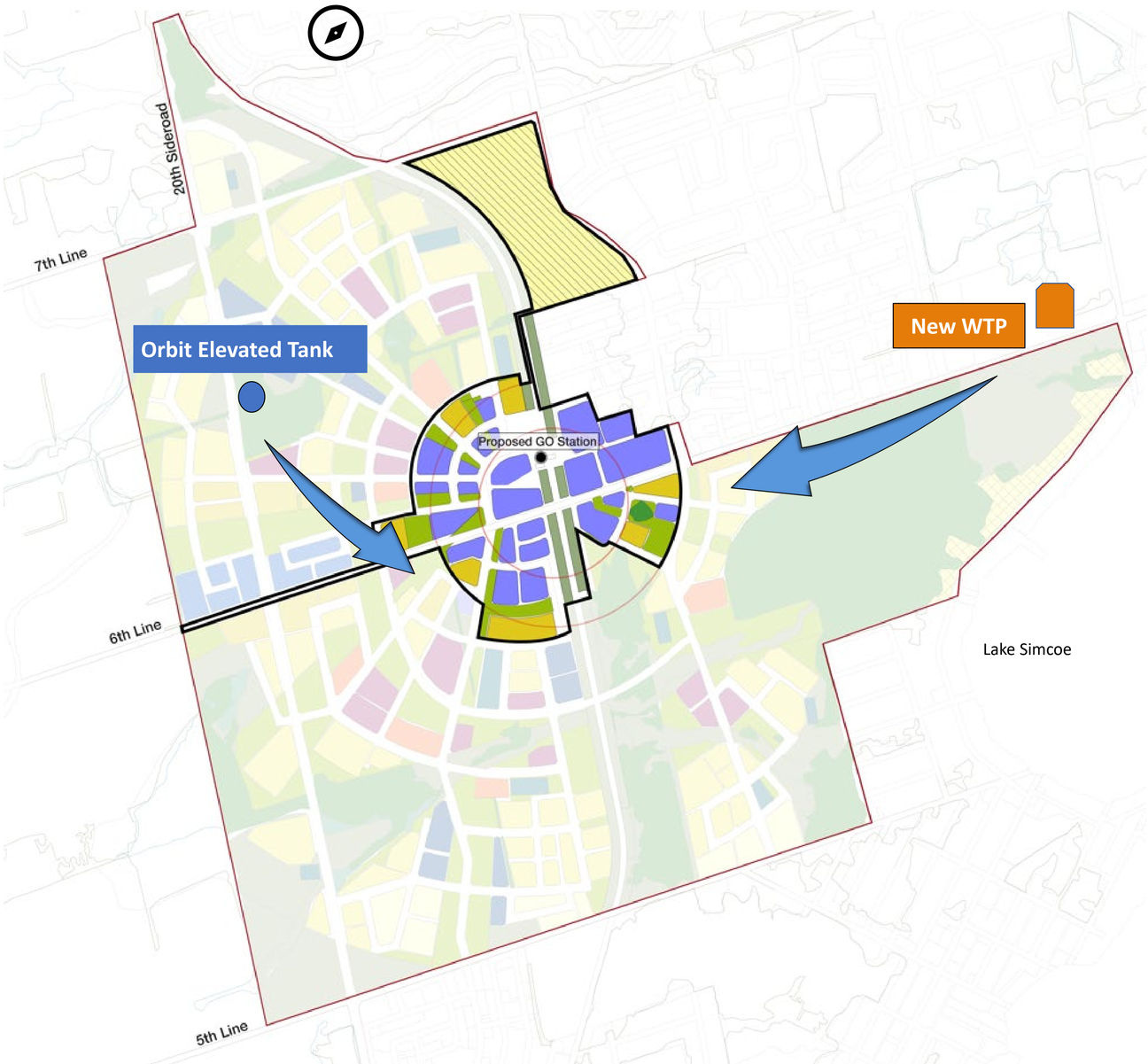
Pros:

- Orbit pressure zone can be extended to high elevation areas in existing Zone 1 to increase the level of services.
- This alternative does not require expansion of Alcona Reservoir and watermain on the 20th Sideroad.
- Emergency supply can be pumped from Orbit tank to the watermain on the 20th Sideroad.
- Elevated storage tank allows for pumping cycles to be optimized for energy efficiency.

Cons:

- High visibility of elevated tank.
- Future growth of the OPIP area will require re-delineation of the first phase of the growth.
- Potentially creates further bottlenecks within existing Zone 1.

Water Alternative 4



Alternative 4 – New South WTP with an Elevated Tank

New south WTP with new intake, pumping station and inground storage located along 6th Line (within Lakeshore WWTP property). The Orbit pressure zone to be pressurized with a pumping station at the WTP and an Elevated Tank on higher ground would provide floating volume.

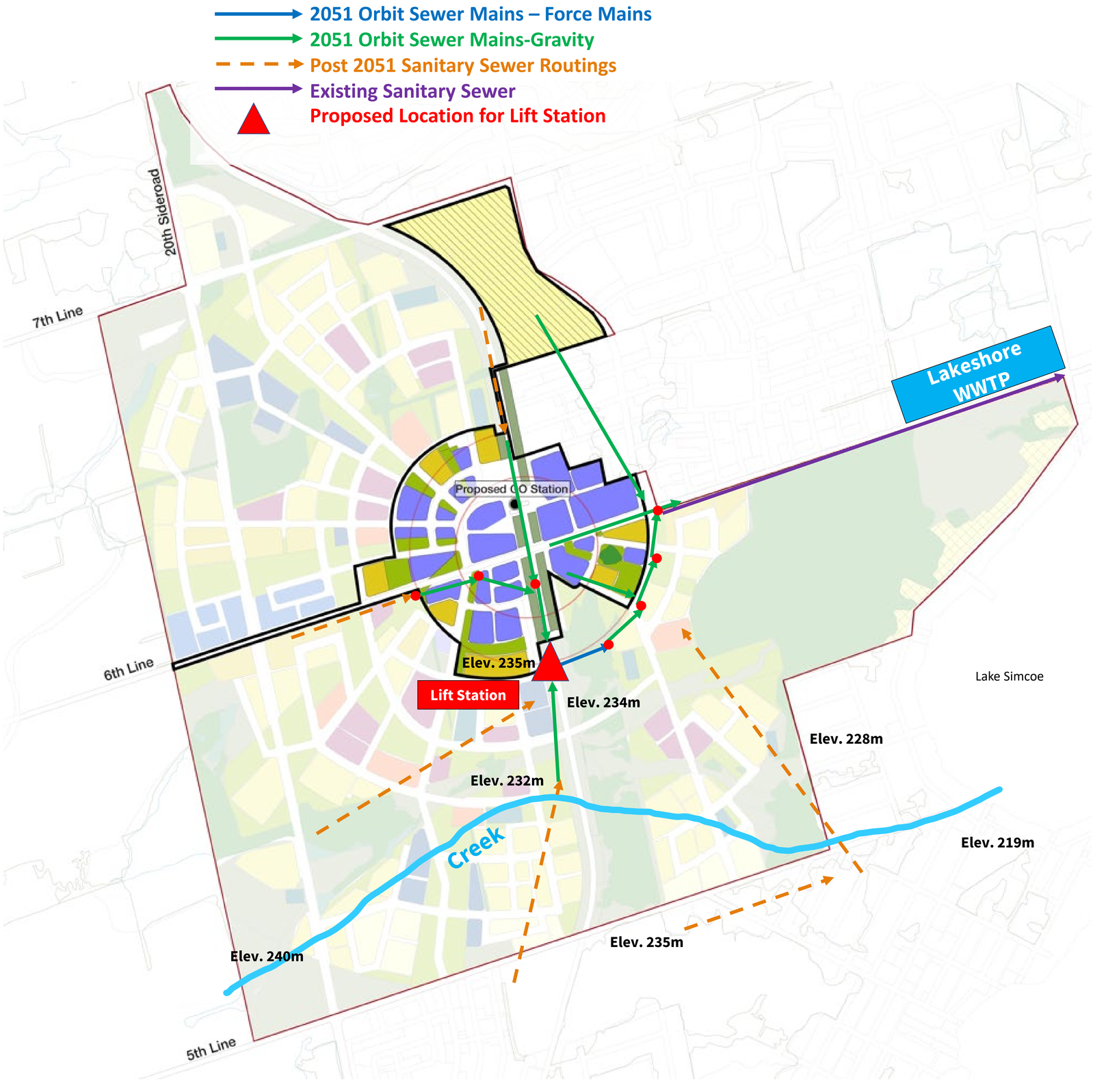
Pros:

- No changes to the existing water treatment and supply system are required.
- Any provision for future expansions within the existing Alcona system can be allocated to other growth.
- Alleviates potential bottlenecks within the existing distribution system to provide required capacity for Orbit first phase and future expansions.
- Elevated storage tank allows for pumping cycles to be optimized for energy efficiency.
- Orbit zone can support the high elevation areas in existing pressure zones in Alcona and Lefroy.
- The growth of the Orbit can be managed with expansion of the WTP with smaller increments without limiting the existing system.

Cons

- Initial construction and operating cost of a new water treatment plant will be higher than other alternatives.

Wastewater Preliminary Preferred Wastewater Servicing Strategy



- Wastewater generated from the OPIP study area will be conveyed to the Lakeshore WWTP through 6th Line.
- A Lift Pumping Station will be needed at low elevation along the rail corridor to support 2051 development.
- A dedicated sewer from OPIP to the existing Sewage Pumping Station might be needed, depending on the available capacity of the existing sewer.
- The capacity of the existing Sewage Pumping Station will be assessed to accommodate growth.
- Lakeshore WWTP treatment capacity needs to be assessed to accommodate the growth.
- Post 2051 growth in the Southeast Orbit area may need another pumping station to serve the low-elevation area south of the creek.

Stormwater Management Design Criteria

- Stormwater Management is the design for managing water quantity and water quality as per regulatory agency policies and guidelines.
- Best Management Practices are methods to manage surface and groundwater to improve efficiency and protect the environment. These are used in conjunction with requirements set out by the Town of Innisfil and the Lake Simcoe Region Conservation Authority.

Importance of Stormwater Management:

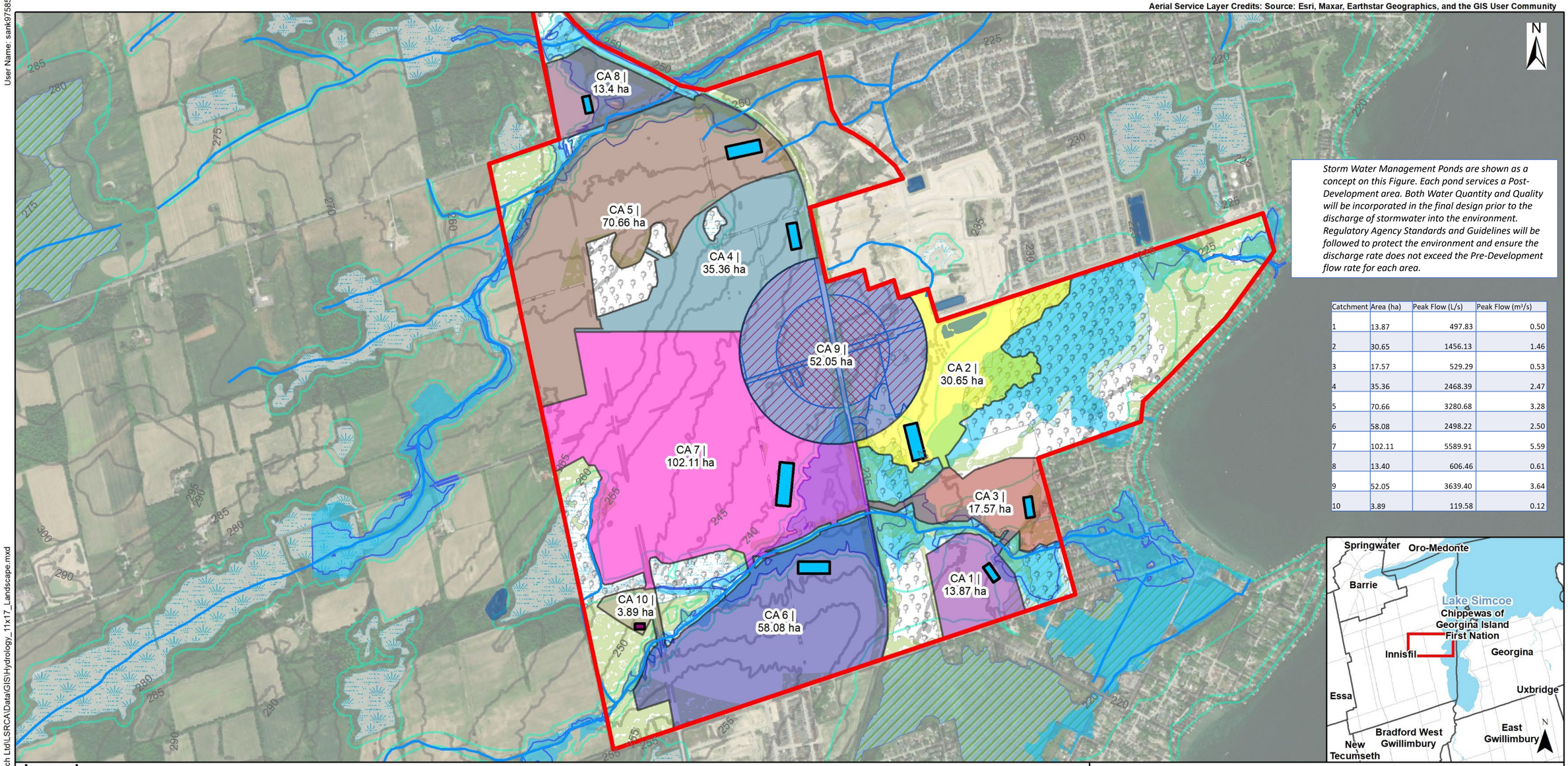
- Storage of additional stormwater generated from a new development to be released at pre-development rates to not impact the capacity of existing stormwater infrastructure and to avoid environmentally sensitive areas.
- Quality control of stormwater from a new development ensures the phosphorus levels and total suspended solids are within the regulations.
- Mitigates flooding within the new development and downstream at points of discharge.
- Incorporates Climate Change to prepare for increase in future storm events.

Quantity Control	Quality Control	Stream Runoff Control & Water Balance Groundwater Recharge
• Maintain existing watershed boundaries and drainage patterns to the extent possible • Post- to pre-development peak flow control for the 2- to 100-year storm events • Post-construction runoff volume shall be captured and retained on site from a 25 mm rainfall event from the total impervious area	Total Suspended Solids (TSS) • Enhanced Protection Level – 80% TSS Removal Phosphorus • 80% of annual Total Phosphorus (TP) from all major development areas must be removed • Comparisons must be made between the TP loads for pre-development and post-development (with and without quality controls)	• Runoff from a 25 mm design storm (4-hour, Chicago distribution) to be detained and released over a period of at least 24 hours • Feasible efforts will be made to maintain pre-development infiltration rate, volumes and recharge quality on an annual basis

Stormwater Management Post Development Conditions

User Name: sank97585

Aerial Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Storm Water Management Ponds are shown as a concept on this Figure. Each pond services a Post-Development area. Both Water Quantity and Quality will be incorporated in the final design prior to the discharge of stormwater into the environment. Regulatory Agency Standards and Guidelines will be followed to protect the environment and ensure the discharge rate does not exceed the Pre-Development flow rate for each area.

Catchment	Area (ha)	Peak Flow (L/s)	Peak Flow (m^3/s)
1	13.87	497.83	0.50
2	30.65	1456.13	1.46
3	17.57	529.29	0.53
4	35.36	2468.39	2.47
5	70.66	3280.68	3.28
6	58.08	2498.22	2.50
7	102.11	5589.91	5.59
8	13.40	606.46	0.61
9	52.05	3639.40	3.64
10	3.89	119.58	0.12

Legend

- Study Area
- Existing Pond
- Watercourse
- Proposed On Site Detention
- Proposed Pond Location
- 5 m Contours

Post-Development Catchment (Catchment Name)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Transit Oriented Community 1 (TOC 1)
- Transit Oriented Community 2 (TOC 2)
- Not Provincially Significant or Unevaluated Wetland
- Provincially Significant Wetland
- 1:100 Year Floodplain
- Regional storm event
- LSRCA Regulation Area
- Natural Heritage Features
- Proposed Woodland

DATA SOURCES:

Roads and Railways - Ontario Open Data
Watercourses - Land Information Ontario
Property Boundaries - City of Toronto Open Data

0 220 440 880 Meters

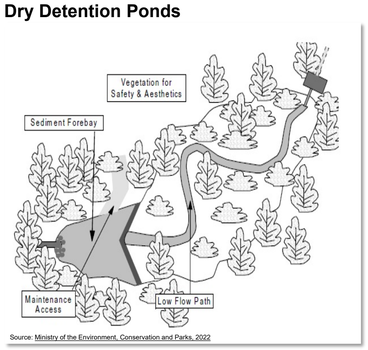
1:17,517

Project:	**Orbit Potential Innovation Plan (OPIP)**		
Figure Title:	**Post-Development Catchments**		
Prepared By:	HATCH	**Date: December 09 2022**	
Version: A	**Review:** -	**Figure:** -	**Page:** -

Document Path: C:\Users\sank97585\OneDrive - Hatch Ltd\LSRCA\Data\GIS\Hydrology_11x17_Landscape.mxd

Stormwater Management
Best Management Practices – Water Quantity

Dry Detention Ponds

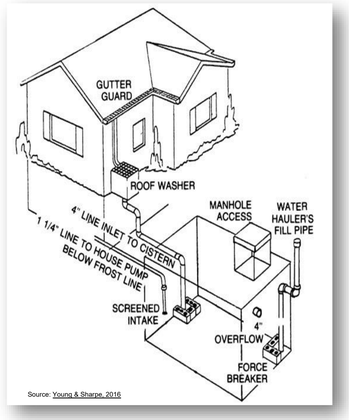


Source: Ministry of the Environment, Conservation and Parks, 2022

Dry Ponds

Flood control structures to accommodate occasional excess overflow downstream. Ideal for managing infrequent extreme flow events; can be incorporated into parks and other green recreational spaces.

Storm Cisterns



Source: Young & Sharpe, 2016

Storm Cisterns

A storage tank located to collect runoff water from an impervious area such as parking lots.

Stormwater Detention Units

Source: SVC, 2022

Stormwater Detention Units

Stormwater detention systems are used to prevent flooding by temporarily holding stormwater runoff and providing the flexibility to release it in a slower, controlled way. By enabling a consistent runoff rate, detention systems help to manage stormwater surge.

Superpipes

Source: Stephen, 2022

Superpipes

Oversized storm sewers to create extra pipe storage which can act as a detention storage and reduce water quantity.

Stormwater Management
Best Management Practices – Water Quality & Quantity

Modular Wetlands Linear

Source: Contech Engineered Solutions LLC, 2022

Modular Wetlands Linear

A biofiltration system can be installed downstream of storage for additional volume control and treatment. It can enhance pollutant removal, has greater filter surface area, and eliminates flooding.

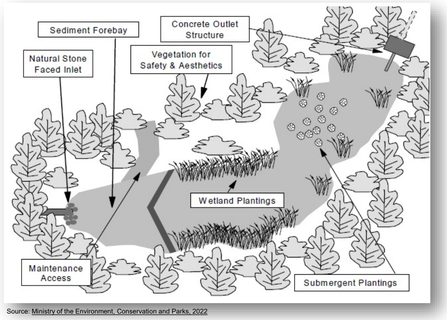
Permeable Pavement

Source: Sustainabletechnologies, 2020

Permeable Pavement

Allows stormwater to drain through the pavement surface into a storage reservoir.

Wet Detention Ponds



Source: Ministry of the Environment, Conservation and Parks, 2022

Wet Detention ponds with Sediment Forebay

An artificial lake typically surrounded by vegetation and continually contains water. It can be used to reduce flooding and protect the environment.

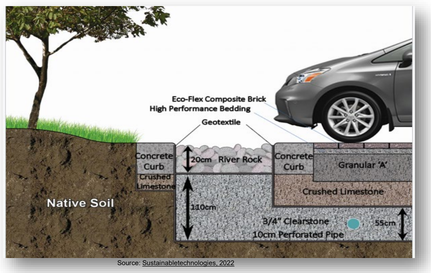
Bioretention

Source: Sustainabletechnologies, 2022

Bioretention & Rain Garden

Vegetated stormwater practices that temporarily store roof and pavement runoff in depressed planting beds or vertical-walled structures. It can be adapted to fit into many different development contexts and provides a convenient area for snow storage and treatment.

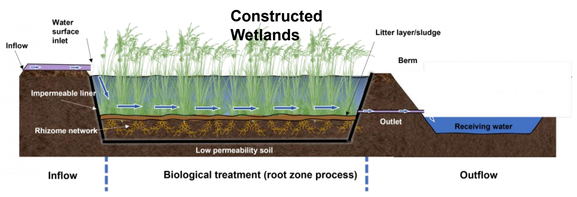
Infiltration Trenches



Source: Sustainabletechnologies, 2022

Infiltration Trenches & Chambers

Includes a range of proprietary manufactured, modular structures installed underground to create large void spaces that temporary store and infiltrate runoff into the underlying native soil. Balancing the requirements to infiltrate excess stormwater whilst conveying excess.



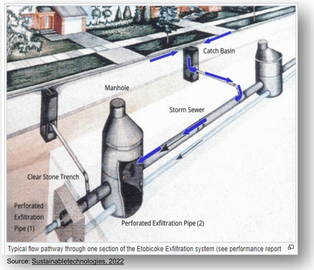
Source: Sustainabletechnologies, 2022

Constructed Wetlands

Free-water surface flow wetlands designed to incorporate shallow zones for wetland plants. Ideal for enhancing biodiversity and providing a more aesthetic aquatic landscape and can reduce health and safety risks.

Stormwater Management
Best Management Practices – Water Quality

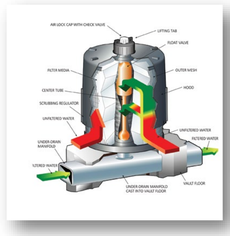
Exfiltration Pipe System



Source: Sustainabletechnologies, 2022

Exfiltration Pipe System

Infiltration trenches integrated with conventional stormwater conveyance systems and designed for both conveyance and infiltration functions. It is ideal for road retrofits where sewer lines are being replaced, and new road/storm sewer constructions where no constraints to infiltration exist.



Source: Contech, 2022 & Echelon Environmental, 2022

StormFilter with PhosphoSorb Media

An underground stormwater treatment device comprised of one or more structures with PhosphoSorb media that removes total phosphorus.

JellyFish Filter

Source Imbrium Systems, 2022

Jellyfish Filter

A stormwater quality treatment technology featuring a large surface area membrane that filters litter, oil, debris, TSS and fine silt-sized particles at a high flow rate.

Sorbtive Media

Source: Sustainabletechnologies, 2022

Sorbtive Media

Sorbtive Media is an oxide-based, high surface area reactive engineered media that absorbs and retains large amounts of dissolved phosphorus. It does not leach pollutants.

Stormceptor

Source: Imbrium Systems, 2022

Stormceptor

An oil grit separator/hydrodynamic separator designed to protect waterways from hazardous material spills and stormwater pollution. It can continuously provide treatment of TSS regardless of flow rate.

Vegetated Filter Strips

Source Sustainabletechnologies, 2022

Vegetated Filter Strips

Gently sloping, densely vegetated areas that are designed to treat runoff as sheet flow from adjacent impervious surfaces.

BayFilter with Enhanced Media Cartridges

Source: ADS, 2022

BayFilter with Enhanced Media Cartridges

A system consisting of modular cartridges placed in vaults for stormwater treatment. It has a self-cleaning backwash component and can prevent unwanted standing water during dry periods.

Sustainability in Orbit

The Town of Innisfil defines sustainability as measures and actions that assure there will be sufficient resources for both present and future generations. The principles for Orbit move us toward a natural and forward-thinking shift in sustainability practices. The principles feature themes that guide development and involve the creation, monitoring, and maintenance of conditions that support a harmonized existence between the Orbit and our natural environment.

The team has created a series of Key Performance Indicators (KPIs) for the sustainability principles. These indicators can be used by the Town to measure whether, and to what extent, the Orbit is achieving these goals.

Principle	Key Performance Indicators (KPIs)	Recommended Measure / Target
Social and Cultural Viability	Access to healthy and locally-sourced food	Consistent with Canadian Local Food Infrastructure Fund reporting requirements
	# of multi-function spaces	Spaces that can serve as community assets in the event of emergency: tornado shelters, medical facilities, and other
Quality of Lake Simcoe	% of riparian areas under management	Management plans help to provide buffer zones that mitigate flood damage and help to avert soil erosion
	Removal of 80% of total suspended solids (TSS) and phosphorus from stormwater	Protect health of Lake Simcoe by preventing release of pollutants
Environment and Green Space	# of trees planted annually	Like Toronto's Strategic Forest Management Plan, track how many trees are planted with a >75% survival rate within five years of planting
	% of residents with access to green space	Access defined as within 0.5km, i.e., a five-to-ten-minute walk

Sustainability in Orbit

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Principle	Key Performance Indicators (KPIs)	Recommended Measure / Target
Energy 	Amount of energy consumed by the neighbourhood	Requires energy-usage monitoring systems
	Existence of a Power Disruption Risk Management Plan	Creation of a plan to provide steps to be taken to minimize the chances, and effects of, a loss of electrical power to the Orbit
Transportation and Mobility 	At least 15% of trips to/from Orbit by bicycle or walking (active transportation)	Consistent with Town of Innisfil's broader goals for moving to active transportation
	Provision of EV-ready parking within all multi-residential units	Preparation for all-EV marketplace expected next decade
Buildings 	% of sustainable materials used in building construction	Requires energy-usage monitoring systems
	% of rainwater retained from building roofs	Minimum of 75% retained is a good target

Employment

Employer Survey

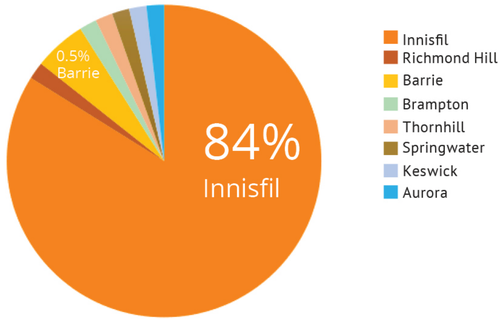
We heard from…

A range of employers (large and small), from a cross section of industries.

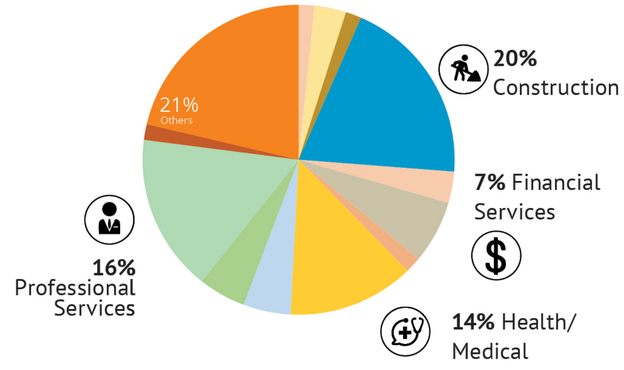
52% of respondents' businesses **primarily serve** the community of **Innisfil**.

The businesses/ organizations that responded to the survey…

ARE LOCATED IN:



SERVE VARIOUS INDUSTRIES:



The **Biggest Barriers** to finding suitable candidates…

Employee attraction and **identification/ recruitment of suitable candidates** are the most common challenges faced by respondents.

40%
lack of skill/ training.

27%
prospective candidates do not want to travel/ relocate.

20%
Innisfil is not positively regarded by prospective candidates.

How has this (+ future feedback) been used?

Feedback received to date through **Community Surveys** and the **Employer Survey** has been used to **inform** and will continue to **influence** various aspects of and studies relating to the **Secondary Plan**, including:

- Employment targets/ requirements (linked to population projections, sustainable development aspirations)
- Employment types and land use allocations
- Servicing (including capacity analysis, future considerations/ allocations)
- Planning policy (inc. employment, home occupations, etc.)
- Active travel and transportation requirements to support employment targets/ land use allocations.

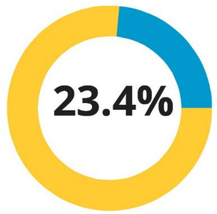
This data may also be used to inform other Town studies and plans such as the upcoming Economic Development Strategic Planning Process.

Employment

What we've heard…

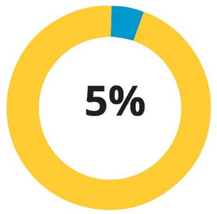
Community Feedback

Areas of Interest



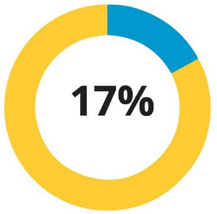
of residents are most interested in **15-minute Neighbourhood** principles as part of the vision for Orbit.

The Orbit's Legacy



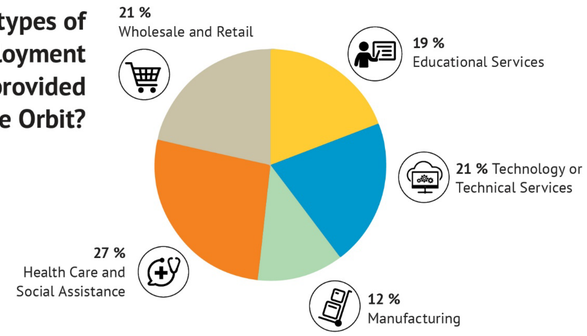
of residents awould like **higher Economic Opportunities** for the future generations.

Attractive Amenities

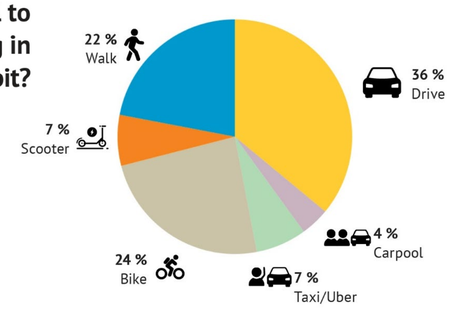


of residents find that **Economic Opportunities** and **Jobs** would make Orbit an attractive place to live or visit and spend time.

What types of employment should be provided in The Orbit?



How would residents travel to work while living in The Orbit?



Employer Feedback

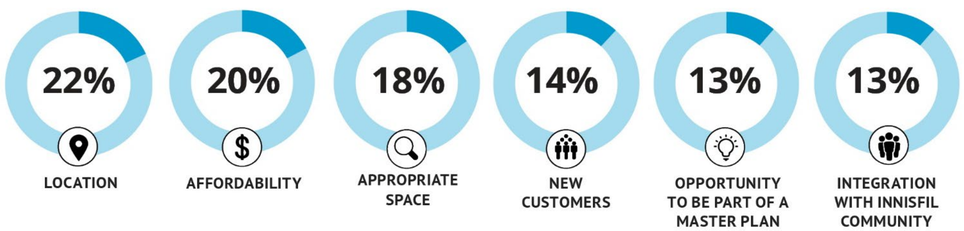
Business/Organization Owners would like to **retain or attract the employees** by offering **shorter commuting distances, low cost of living and housing, proximity to local services** as well as **entertainment opportunities** (theatre/ cinema/bar/cafes).

Proximity to home/shorter commute. 01

Cost of living and cost of housing. 02

Local services, retail and entertainment located nearby. 03

The most important of aspects of Orbit for doing BUSINESS…



73.8% of respondents would **relocate to or open another location in Orbit**.

Additional infrastructure and customers required by businesses/ organizations to **support future growth**…

20 %
require additional customers in the area.

15.5 %
require business support services and networks.

14.7 %
require a purpose built tenancy for better functionality and increased space.

The types of employment being explored for Orbit...

RECREATION AND TOURISM

Stadium/ Sports Arena
Arts/ Culture: Performing arts, cultural centre, art gallery, exhibition/ convention centre.
Lakefront Drawcards/ Activities: Cafe/ food vans, bike hire, seasonal attractions
Festivals/ Events

Est. Employment Density **0.07 person / sq.m.**

ENTERPRISE/ LIGHT INDUSTRIAL

Larger footprint light industrial/ commercial: Green manufacturing, local distribution, warehousing, small scale manufacturing/ production.

Est. Employment Density **0.02 person/sq.m.**

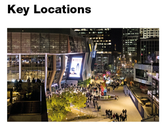
INSTITUTIONAL/ EDUCATION

Neighbourhood/ Urban Core: Primary school, childcare, community centre, library, religious facilities, healthcare (inc. flexi/ dual- use spaces).

Urban Core: (Above) plus high school (urban), higher education/ training. aged care, medical services.

Est. Employment Density **0.02 person/sq.m.**

Key Locations




Site Specific


Key Locations


URBAN NEIGHBOURHOODS

Daily needs within walk/ cycle of homes: Retail, commercial i.e.. grocery, cafe, restaurants, bakery, services (dry-cleaner, shoe repairs, hairdresser, vet, mechanic), office, co-working, bike store, clothing store, gift shop, medical (dentist/ doctor/ physio).

Est. Employment Density **0.05 person/sq.m.**

URBAN CORE "EDGE"

Retail, commercial: Cafe, restaurants, gyms and spa, convenience retail, small businesses (accountant, real estate), office, co-working, services and medical.

Est. Employment Density **0.03 person/sq.m.**

URBAN CORE

Office/ retail: larger floorplate employers.

Entertainment: Cinema, gaming.

Services: City service providers.

Est. Employment Density **0.03 person/sq.m.**

Main Streets/High Streets, Village Centres


Ground Floor Activation on Key Streets


Mixed/multi-use


Next Steps

- Receive and address comments.
- Finalize Servicing Master Plan and Secondary Plan.
- The Servicing Master Plan will be published for comment in early 2023.
- The Secondary Plan will be presented to Committee in early 2023.
- Council Adoption of Secondary Plan.

Q1 2023

We Want Your Feedback

Your feedback is important to inform the Orbit Potential and Innovation Plan. Please share your comments by:

Submitting a Comment Sheet online via the Project website:
www.Innisfil.ca/OrbitEngagement

Sending an email with your comments to the Project inbox:
Orbit@Innisfil.ca

Visit the Project website for updates and sign up to be added to the Project Contact List

Comments received up to January 11, 2023 will be included in the PIC Summary Report which will be published on the Project website in January 2023.