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South March Urban Expansion Area Servicing Capacity Assessment

Prepared for: South March Landowners Group

South March Urban Expansion Area
Ottawa, Ontario
Official Plan Amendment Application
Servicing Capacity Assessment

Prepared By:

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October / 23 / 2024

Novatech File: 121038
Ref: R-2024-119

October 23, 2024

City of Ottawa
Planning, Development, and Building Services Department
110 Laurier Avenue West, 4th Floor
Ottawa, Ontario
K1P 1J1

**Reference: South March Urban Expansion Area (SMUEA)
Private OPA – Servicing Capacity Assessment
Our File No.: 121038**

Novatech has been retained to prepare the enclosed Servicing Capacity Assessment in relation to an application for *Official Plan Amendment* for the properties within the South March Urban Expansion Area (SMUEA) in Ward 5 West-Carleton March Ottawa, Ontario.

If you have any questions or require any additional information, please contact the undersigned.

Yours truly,

NOVATECH



Alex McAuley, P.Eng.
Senior Project Manager | Land Development Engineering

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EXECUTIVE SUMMARY

This Servicing Capacity Assessment has been prepared in relation to an application for Official Plan Amendment for the properties within the South March Urban Expansion Area (SMUEA). The lands are generally bound by March Road and Cameron Harvey Drive to the north, the former active Beachburg Rail Corridor to the east, the Kanata North Urban Expansion Area and Old Carp Road to the south and Second Line Road to the west. There are several existing estate lot residential subdivisions within the boundary of the subject lands which would remain on private services. The site is within proximity of the existing and planned municipal services and stormwater outlets.

City of Ottawa staff reviewed the subject lands in 2021 as part of the comprehensive review of the Official Plan and recommended that the SMUEA lands be designated as Category 1 as a future growth area. The City Council adopted *Official Plan (2021)* did not include the SMUEA as part of the future urban expansion area. The *City of Ottawa Official Plan (2022)* approved by the Ministry of Municipal Affairs and Housing (MMAH) on November 4, 2022 included a series of modifications.

The modifications made by the MMAH included adding the SMUEA on *Official Plan Schedule C17 - Urban Expansion Areas* as a *Category 1 - Future Neighbourhood Overlay*. The 2023 Draft Infrastructure Master Plan (2023 Draft IMP) reviewed the subject lands with regards to being able to extend existing municipal services. Minimal offsite works were identified in the 2023 Draft IMP as being required to service the subject lands. This decision was subsequently reversed by the MMAH on December 6, 2023. The previously completed City of Ottawa servicing review of the subject lands was removed from the 2024 IMP.

Although the 2024 IMP does not include SMUEA, the 2023 Draft IMP did and concluded there would be capacity within the City of Ottawa water distribution system based on the recommended projects in the 2023 Draft IMP. The subject Lands would be connected to the Morgan's Grant and 2Ww pressure zones. The subject lands could be serviced with minimal offsite works of approximately \$15 million which would be a DC eligible project.

The 2023 Draft IMP concluded there is existing capacity within the City of Ottawa wastewater system, and there were no recommended projects in the 2023 Draft IMP. The subject lands could be serviced with minimal offsite works by extension of the March Road trunk sewer and connection to the Briar Ridge Pump Station via the former rail corridor. No DC projects were identified.

Storm runoff generally flows from west to east and is conveyed by a network of tributary channels which are tributary to Shirley's Brook, and ultimately to the Ottawa River. The subject lands will be serviced using a dual-drainage system consisting of storm sewers (minor system) with overland flow paths following proposed road networks and drainage easements (major system). End-of-Pipe stormwater management facilities (wet ponds) are proposed to provide water quality and quantity control for the SMUEA lands as part of the development of the SMUEA lands.

The proposed stormwater management strategy will need to accommodate the existing watercourses crossing the SMUEA lands. Many of the existing ditches, watercourses, and drainage channels crossing the SMUEA lands do not have defined drainage easements. All watercourses receiving post-development runoff from the SMUEA lands will need to have legal and sufficient outlets. This would be defined as part of the City Local Plan/Secondary Plan process.

The SMUEA received its total scoring by the City of Ottawa and was recommended to be designated as urban lands with a *Category 1 - Future Neighbourhood Overlay*. Novatech recently completed an updated scoring of the SMUEA lands, with scoring that is generally consistent with or higher than the 2021 City of Ottawa scoring.

Previous evaluation and study by the City of Ottawa through the 2023 Draft IMP indicates sufficient water and sanitary capacity, subject to the identified watermain project. Servicing of the SMUEA lands would be further evaluated and reviewed during the City Local Plan/Secondary Plan process once the subject lands have been included as part of the urban area in the Official Plan. Based on the information enclosed within this report, we recommend a *Category 1 - Future Neighbourhood Overlay* designation on the SMUEA lands.

1.0 INTRODUCTION

1.1 Background

Novatech has been retained by the South March Landowners Group “SMLG” to prepare a Servicing Capacity Assessment in relation to an application for *Official Plan Amendment* for the properties within the South March Urban Expansion Area (SMUEA) in Ward 5 West-Carleton March Ottawa, Ontario. The lands are generally bound by March Road and Cameron Harvey Drive to the north, the former active Beachburg Rail Corridor to the east, the Kanata North Urban Expansion Area and Old Carp Road to the south and Second Line Road to the west. Refer to **Figure 1 (Key Plan)** for the site location.

1.2 Purpose

The purpose of the *Official Plan Amendment* application is to designate the SMUEA as *Category 1 - Future Neighbourhood Overlay* and included on *Official Plan Schedule C17 – Urban Expansion Area*. The SMUEA would then be eligible to proceed to the Local Plan/Secondary Plan process outlined by the *City of Ottawa Official Plan Annex 4: Local Plan Framework and Section 12 – Local Plans*.

This process would include a Master Servicing Study and a Conceptual Stormwater Management Study that would expand on the items discussed in this report.

1.3 Reference Documents

This report should be read in conjunction with the following documents:

- Transportation Capacity Assessment (Novatech R-2024-111)
- Planning Rationale (Novatech R-2024-121)
- City of Ottawa Official Plan (2022)
- City of Ottawa Draft Infrastructure Master Plan, Draft Final, October 2023 (2023 Draft IMP)
- City of Ottawa 2023 Wastewater Master Plan Final Project Report September 22, 2023 (2023 WWMP)
- City of Ottawa Wastewater Master Plan (WWMP) Existing & Future System Capacity Assessment Technical Memorandum, GM BluePlan File No.: 719038 August 15th, 2023 (2023 GM BluePlan Technical Memo)
- GM BluePlan WWMP Expansion Area Analysis: Kanata and Stittsville Memo, August 15, 2023

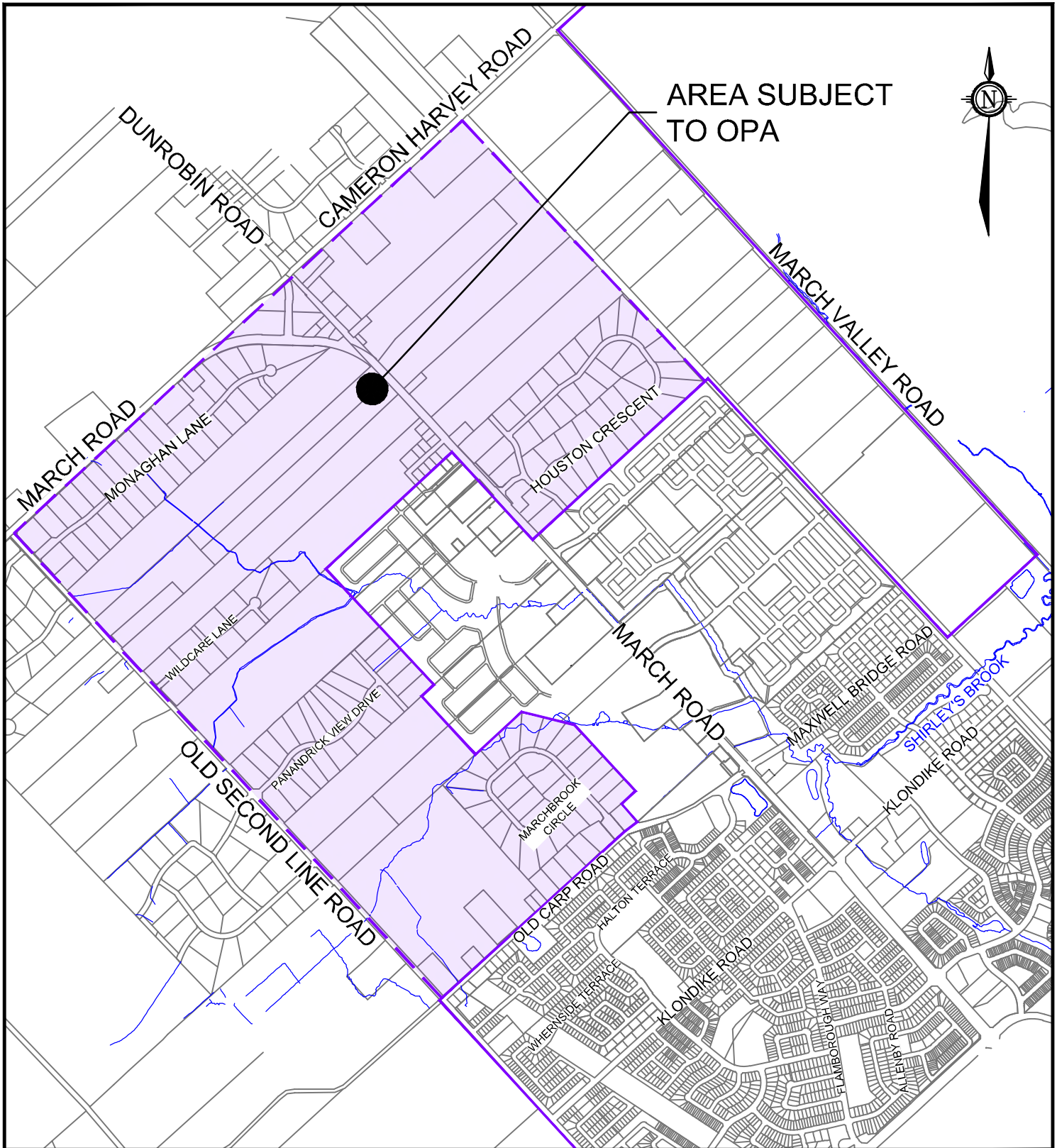
1.4 Ownership

The subject lands are a mix of existing estate lot subdivisions, vegetated areas and pastureland. For the purpose of this report, the existing estate lot subdivisions would remain in their current conditions. The SMLG is comprised of homebuilders in the City of Ottawa including Claridge Homes, Mattamy Homes, Minto Communities, Regional Group, and Uniform Urban Developments. Other property parcels within the SMUEA are under ownership by other private individuals or corporate entities. Please refer to **Figure 2 (Parcel Ownership)** for a detailed ownership plan.

1.5 Previous 2021 City of Ottawa Review

These lands are described in the previous City of Ottawa review as the South March Cluster, or W-1. It is well documented that the SMUEA was recommended to be included in the urban boundary and designated as *Category 1 - Future Neighbourhood Overlay* lands by City staff based on the total scoring it

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SOUTH MARCH URBAN EXPANSION AREA

KEY PLAN

SCALE

N.T.S.

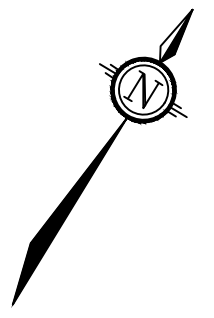
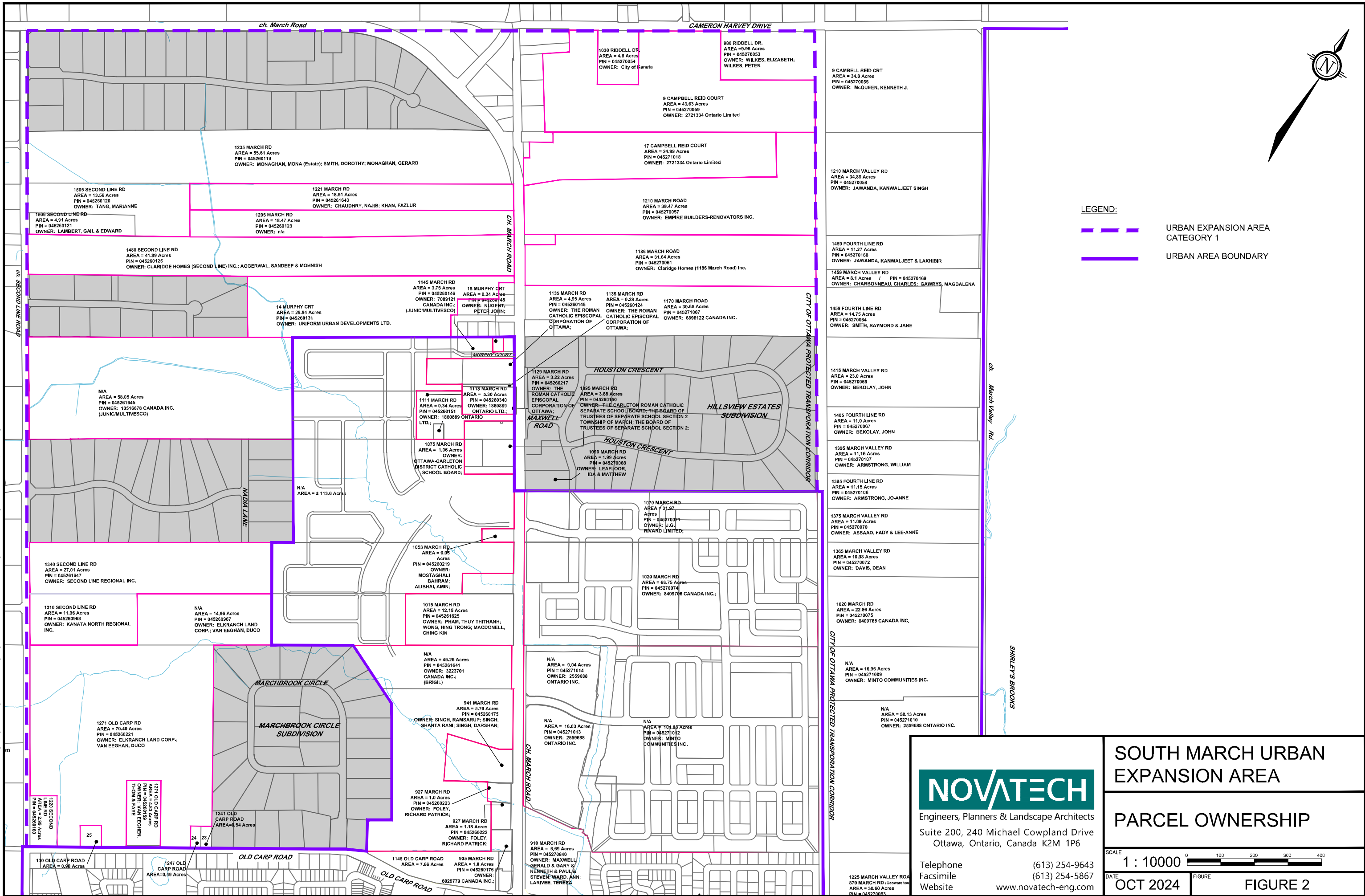
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FIGURE

FIGURE 1

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LEGEND:
 - - - - - URBAN EXPANSION AREA CATEGORY 1
 _____ URBAN AREA BOUNDARY

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SOUTH MARCH URBAN EXPANSION AREA

PARCEL OWNERSHIP

SCALE 1 : 10000

DATE OCT 2024 FIGURE FIGURE 2

received through the evaluation criteria for urban boundary areas. As part of the comprehensive review of the Official Plan in 2012 City of Ottawa staff recommended including the subject lands within an extension of the Urban Boundary. Refer to the excerpt included in **Appendix A**.

The City Council adopted *Official Plan (2021)* did not include the SMUEA as part of the future urban expansion area. The *City of Ottawa Official Plan (2022)* approved by the Ministry of Municipal Affairs and Housing (MMAH) on November 4, 2022 included a series of modifications.

The modifications made by the MMAH included adding the SMUEA on *Official Plan Schedule C17 - Urban Expansion Areas* as a *Category 1 - Future Neighbourhood Overlay*. The 2023 Draft Infrastructure Master Plan (2023 Draft IMP) reviewed the subject lands with regards to being able to extend existing municipal services. Minimal offsite works were identified in the 2023 Draft IMP as being required to service the subject lands. Refer to the excerpt included in **Appendix B**. This decision was subsequently reversed by the MMAH on December 6, 2023. The previously completed City of Ottawa servicing review of the subject lands was removed from the 2024 IMP.

Therefore, this report references the previous City servicing review conducted in support of the 2023 Draft IMP.

The servicing and capacity analysis contained herein relies on that previous analysis and the resulting conclusions but has been updated to confirm the resulting conclusions that supported capacity for watermain and sanitary was readily available, subject to the relatively minor offsite watermain works.

1.6 Engineering Context

The subject site is comprised of vegetated areas and gentle rolling pastureland that drains from west to east, which is tributary to Shirley's Brook, and ultimately to the Ottawa River. There is a mix of existing natural drainage and heritage features that would require further review. Refer to **Figure 3 (Environmental Constraints)** for a review of some of the potential constraints.

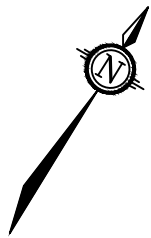
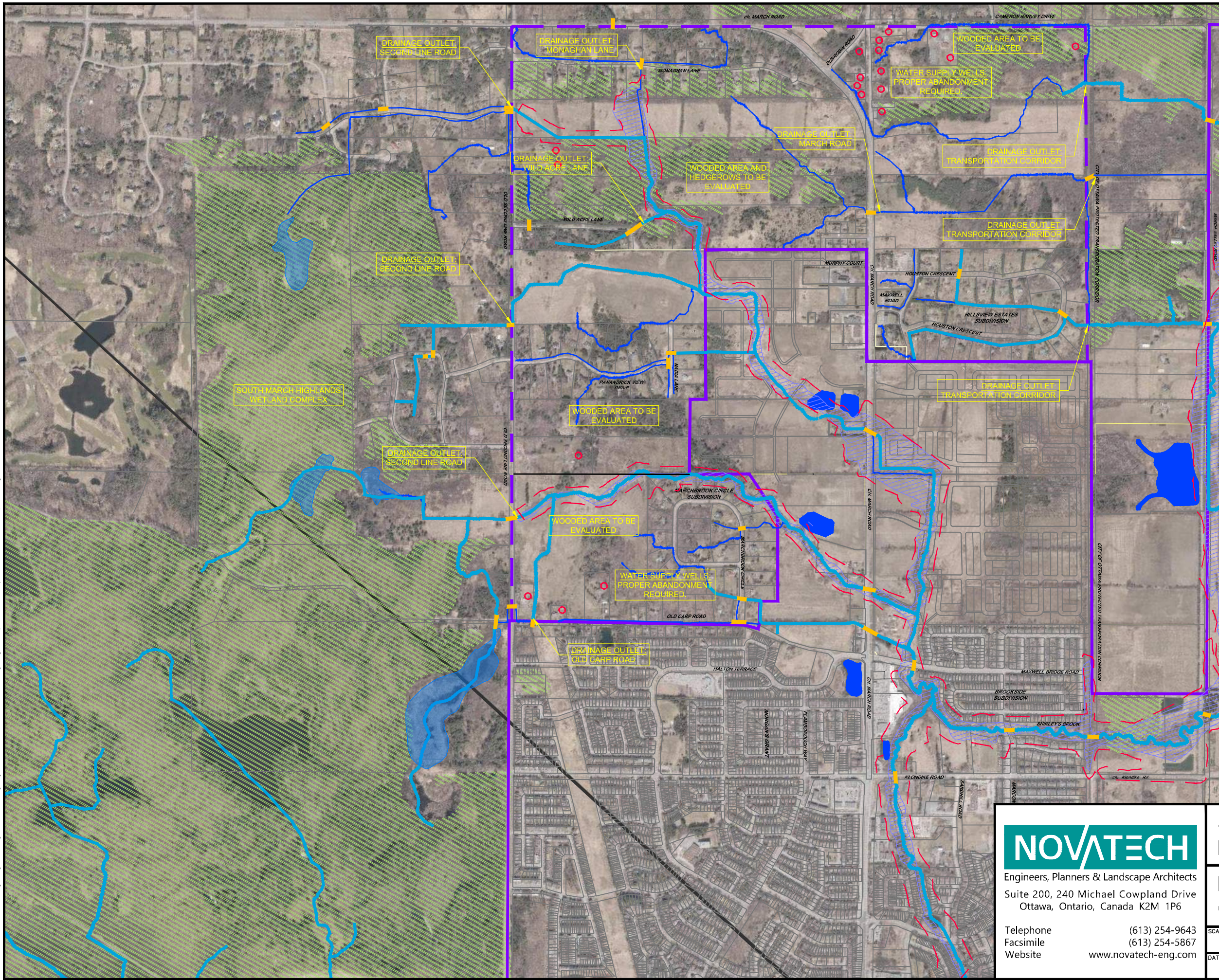
The ground elevations of the subject site vary between approximately 66m and 102m.

There are several existing estate lot residential subdivisions within the boundary of the subject lands which would remain on private services, unless owners redevelop or seek to connect to municipal services. The estate lot subdivisions can utilize the Municipal Act-Local Improvement to petition to the City to have the lands serviced. At the time of the City Local Plan/Secondary Plan process discussions would take place regarding the servicing of these lands.











The site is within proximity of the following existing and/or planned municipal services and stormwater outlets:

- Existing municipal 406mm trunk watermain in the Morgan's Grant Subdivision. (approximately 900m from the subject lands);
- Existing municipal 600mm trunk sanitary sewers along March Road. (approximately 600m from the subject lands);

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LEGEND:

-  URBAN EXPANSION AREA CATEGORY 1
-  URBAN AREA BOUNDARY
-  REGULATION LIMITS
-  EXISTING STREAMS
-  EXISTING CULVERTS
-  LOW POINTS/POTENTIAL STREAMS
-  EXISTING SWM PONDS INCLUDING UNDER CONSTRUCTION PONDS
-  PROVINCIALY SIGNIFICANT WETLANDS
-  WATER SUPPLY WELLS
-  NATURAL HERITAGE FEATURE OVERLAY (City of Ottawa Official Plan Schedule C11-A)

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SOUTH MARCH URBAN EXPANSION AREA

ENVIRONMENTAL CONSTRAINTS

SCALE 1 : 15000 

DATE OCT 2024 FIGURE FIGURE 3

- Existing municipal 406mm trunk watermain along March Road. (approximately 600m from the subject lands);
- Existing municipal 450mm trunk sanitary sewer along Celtric Ridge Crescent. (approximately 1,600m from the subject lands);
- Planned municipal sewer and watermain within the Kanata North Urban Expansion Area subdivisions (immediately adjacent to the subject lands);
- Planned stormwater management facilities as part of the Kanata North Urban Expansion Area subdivisions (immediately adjacent to the subject lands).

2.0 WATER

2.1 Existing Conditions

The subject lands are currently serviced by individual wells, and the existing estate lot subdivisions would remain on private services, unless they seek to connect to municipal services. The existing 406mm trunk watermain on March Road was recently constructed to service the Kanata North subdivisions within the Kanata North Urban Expansion Area (KNUEA). Within the Kanata North subdivisions, the watermains could be extended to the subject lands to provide municipal water infrastructure to support future development. The existing watermains within the Morgan's Grant subdivision could be extended to the subject lands to support future development.

2.2 Pressure Zones

There are two existing pressure zones within the existing City of Ottawa watermain system adjacent to the subject lands. The approximate dividing line between the two pressure zones is the 94m contour, with the Morgan's Grant (MG) Pressure Zone servicing the lands above the 94m contour, and the 2Ww Pressure Zone servicing lands below 94m. Refer to **Figure 4 (Watermain Pressure Zones)**.

Morgan's Grant Pressure Zone

The Morgan's Grant (MG) Pressure Zone has a nominal Hydraulic Grade Line (HGL) of 148m per the 2023 Draft WMP (**Appendix B**), with pressures regulated by the Morgans Grant Pump Station. The MG Zone services lands with an elevation range from approximately 91m to 107m.

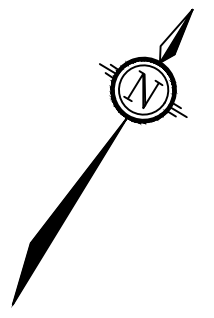
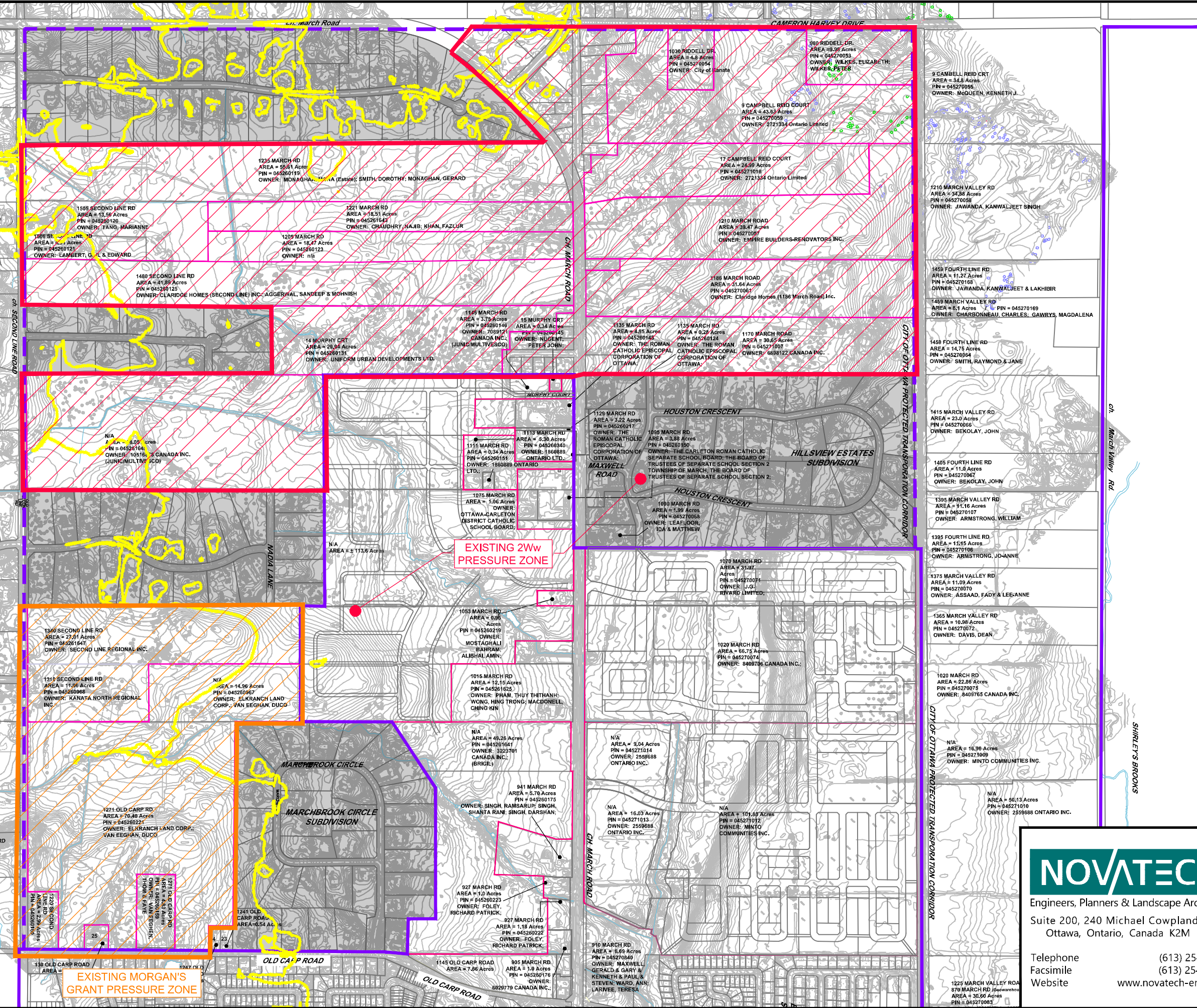
It is anticipated that the subject lands above the 94m contour, which are primarily located in the southwest corner along Old Second Line Road would be serviced by an extension of the MG Pressure Zone.

2Ww Pressure Zone

The majority of the subject lands, which includes lands below the 94m contour would be serviced by the 2Ww Pressure Zone which has a nominal Hydraulic Grade Line (HGL) of 129m per the 2023 Draft WMP (**Appendix B**), and services lands with an elevation range from approximately 68m to 99m.

As part of the Kanata North CDP Area, a 400mm Ø watermain network extension [of 2Ww Zone] should be able to meet domestic and fire fighting demand. Opportunities are available to utilize local watermains within the proposed subdivisions in proximity of the site. Some elevations may cause low pressures within the western half of the site; however, additional looping to local watermains / future upgrades, or connection to the MG pressure zone may address this issue. Detailed modelling, distribution pipe sizing and routing of local mains will be completed at the City Local Plan/Secondary Plan process.

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LEGEND:

- URBAN EXPANSION AREA CATEGORY 1
- URBAN AREA BOUNDARY
- CONTOUR ELEVATION = 94.0m
- PROPOSED EXPANSION OF MORGAN'S GRANT (MG) PRESSURE ZONE
- PROPOSED EXPANSION OF 2Ww PRESSURE ZONE

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SOUTH MARCH URBAN EXPANSION AREA

WATERMAIN PRESSURE ZONES

SCALE 1 : 10000

DATE OCT 2024 FIGURE FIGURE 4

2.3 Onsite Works

It is anticipated that both pressure zones would be connected to the existing watermains at multiple locations to provide looping. The watermains would be designed to meet the City of Ottawa and provincial guidelines and standards.

2.4 Offsite works

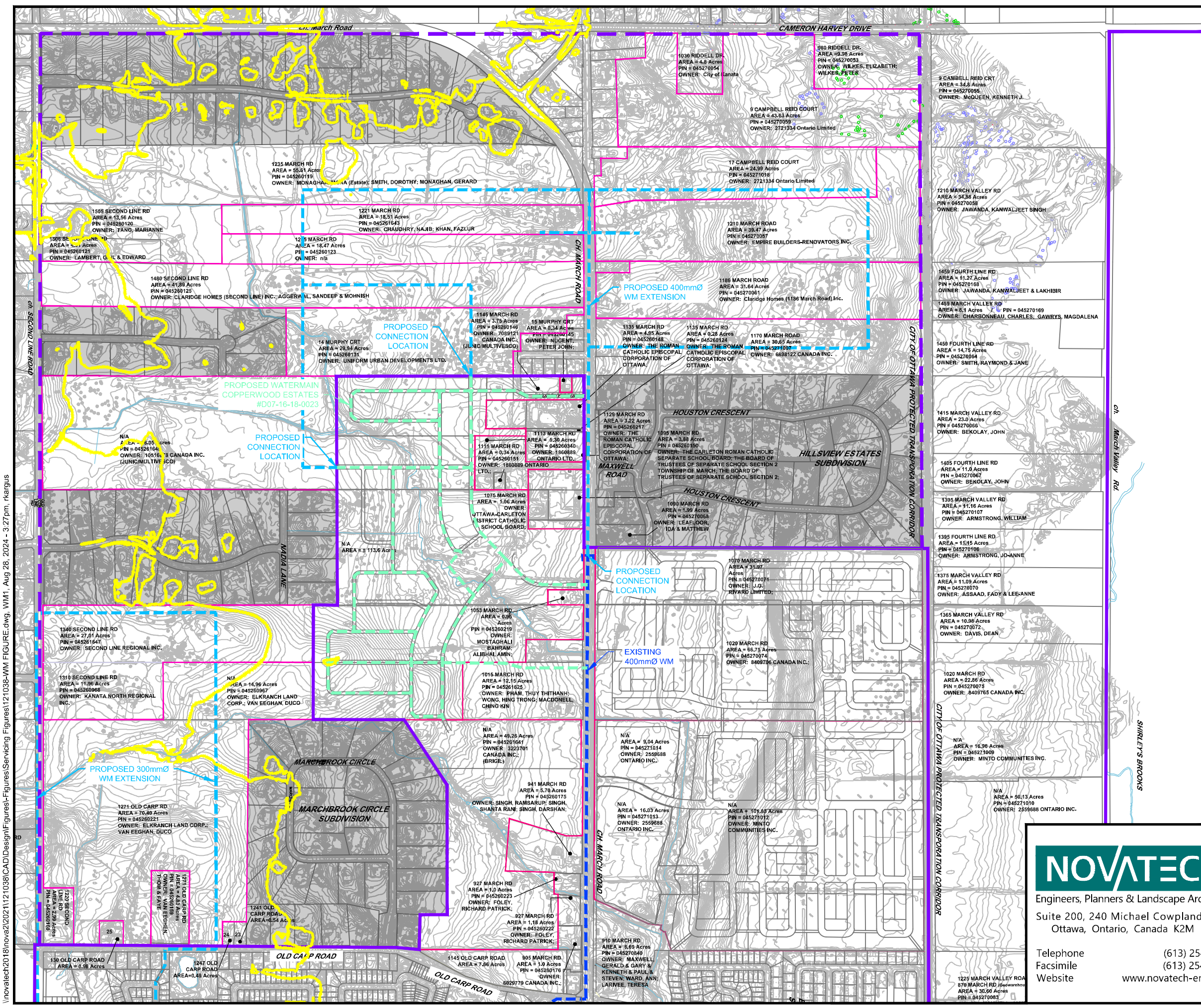
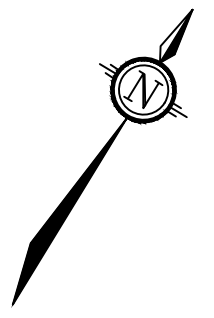
The 2023 Draft IMP identified that that approximately 2,370m of 406mm trunk watermain extending from the Morgan's Grant Pump station to the subject lands would be required. The IMP Figure 9-1 included in **Appendix B** shows the routing proposed by the City of Ottawa. The offsite works are estimated by the 2023 Draft IMP to cost approximately \$15 million (**Appendix B**). An initial review by Novatech indicates that there may be alternative routes to extend the trunk watermain which could reduce overall costs. Refer to **Figure 5 (Watermain Servicing)** for potential onsite and offsite watermain works.

The City's Official Plan process (**Appendix A**) discussed a potential opportunity with development of the subject lands to construct a new watermain to extend the 3W Pressure Zone from Terry Fox Drive. This would allow for an opportunity to eliminate the Morgans Grant Pressure Zone.

This would be evaluated further during the City Local Plan/Secondary Plan process once the subject lands have been designated as *Category 1 - Future Neighbourhood Overlay* in the Official Plan.

2.5 Summary and Recommendations

It is our opinion that the subject lands can be serviced with minimal offsite watermain works as indicated in the Draft 2023 IMP. No major offsite infrastructure upgrades are required. The specific connections to the existing watermains and local upgrades would be evaluated further during the City Local Plan/Secondary Plan process once the subject lands have been included as part of the Official Plan. The subject lands could be serviced with minimal offsite watermain works as indicated in the Draft 2023 IMP.



- LEGEND:**
- URBAN EXPANSION AREA CATEGORY 1
 - URBAN AREA BOUNDARY
 - EXISTING WATERMAIN
 - WATERMAIN (BY OTHERS)
 - PROPOSED WATERMAIN
 - CONTOUR ELEVATION = 94.0m

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SOUTH MARCH URBAN EXPANSION AREA

WATERMAIN SERVICING

SCALE 1 : 10000

DATE OCT 2024 FIGURE FIGURE 5

3.0 WASTEWATER

3.1 Existing Conditions

The subject lands are currently serviced by individual septic systems with the existing estate lot subdivisions anticipated to remain on private services, unless they seek to connect to municipal services. The existing 600mm March Road Collector / North Kanata Trunk sanitary sewer on March Road was recently constructed to service the Kanata North subdivisions. Opportunities are available to utilize local sanitary sewers within the proposed subdivisions in proximity of the site

Within the Kanata North subdivisions, the sanitary sewers could be extended to the subject lands to provide municipal wastewater infrastructure to support future development.

3.2 Local Sewers

The eastern third of the site adjacent to the Beachburg rail corridor could outlet to either the North Kanata Trunk sewer or to the Briar Ridge Pump Station. Depending on the design of the subject lands and the location of the drainage divide, a portion of the site could require a substantial grade raise (up to 3~4m), where existing elevations are below 80m. However, based on our experience in the area, the underlying soils in this area are typically shallow bed rock, which can accommodate substantial grade raises. Moreover, the eastern part of the site may also serve as a location for a stormwater management facility; therefore, it may not require a grade raise.

Sanitary sewers within the subject lands would be designed to meet the City of Ottawa and provincial guidelines and standards.

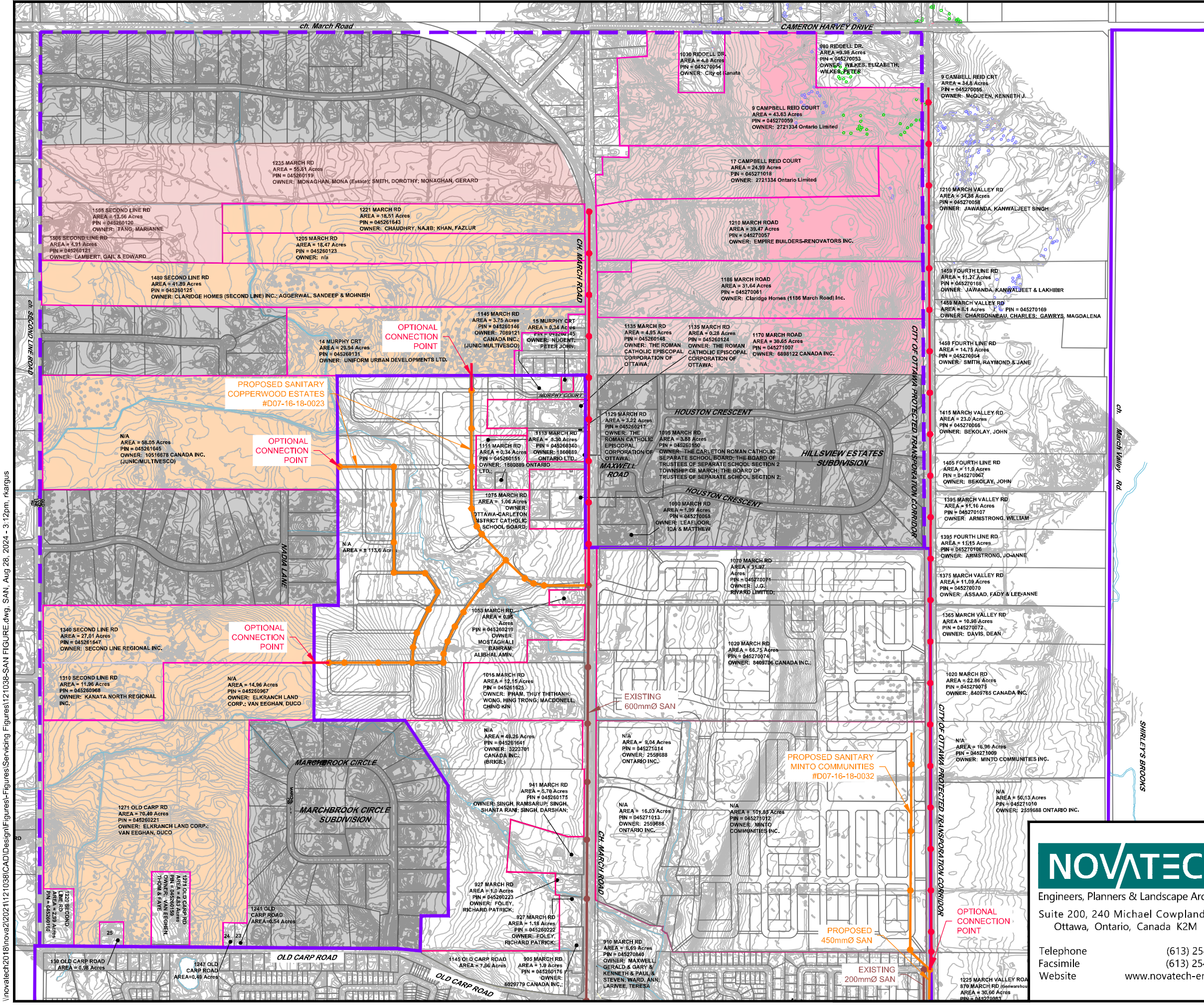
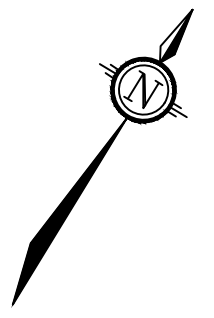
3.3 Trunk Sewers

It is anticipated that the sanitary sewers within the subject lands would outlet to two trunk sewers based on the topography of the site.







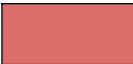

The lands in proximity to and west of March Road would outlet to the North Kanata Trunk along March Road. As part of the 2023 Wastewater Master Plan, GM BluePlan reviewed the subject lands and noted that: *Future flow from expansion area W-1 results in some surcharging within the North Kanata Trunk; however, the HGL remains well below the 2.4m depth of cover trigger point for the 1-in-25-year June 2014 event.* (2023 GM BluePlan Technical Memo, pg 29) **(Appendix B)**.

The eastern third of the subject lands below the 80m elevation, would potentially outlet to an extension of the 450mm trunk sewer along the existing rail corridor. The existing trunk sewer outlets to the Briar Ridge Pumping Station.

This potential split of sanitary drainage is consistent with the findings of the 2023 WWMP, as noted in the August 25, 2023, BluePlan Memo **(Appendix B)**. Refer to **Figure 6 (Sanitary Servicing)** for locations of the trunk sewers.



LEGEND:

-  URBAN EXPANSION AREA CATEGORY 1
-  URBAN AREA BOUNDARY
-  EXISTING SEWER AND MANHOLE
-  PROPOSED SEWER BY OTHER DEVELOPMENT
-  PROPOSED SANITARY SEWER EXTENSION FOR URBAN EXPANSION
-  AREAS SERVICED THROUGH COPPERWOOD ESTATES TO MARCH ROAD SEWER (APPROXIMATELY 118ha)
-  AREAS SERVICED BY MARCH ROAD SANITARY SEWER EXTENSION (APPROXIMATELY 65ha)
-  AREAS SERVICED BY PROTECTED TRANSPORTATION CORRIDOR SANITARY SEWER EXTENSION (APPROXIMATELY 35ha)

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SOUTH MARCH URBAN EXPANSION AREA

SANITARY SERVICING

SCALE 1 : 10000

DATE OCT 2024 FIGURE FIGURE 6

3.4 Offsite Works

The subject lands were evaluated by the City of Ottawa as part of the 2023 Draft IMP and 2023 WWMP. The City of Ottawa did not identify any capital projects specifically related to the inclusion of the subject lands in the Official Plan.

No offsite works have been identified as being required if the subject lands are added to the urban boundary at this time. This would be evaluated further during the City Local Plan/Secondary Plan process once the subject lands have been included as part of the Official Plan. These findings are consistent with the findings of the 2023 WWMP (**Appendix B**) as noted below:

Area W-1 will have split drainage between the Briarridge PS and the existing 600 mm March Road trunk sewer. Surchage along the March Road sewer was noted, and further analysis is necessary at the Master Servicing stage to ensure surcharge levels are below underside of footing elevations in the Shirley's Brooke Community. (August 15, 2023, BluePlan Memo)

Flow and/or level monitoring is recommended on the East March Trunk sewer near Shirley's Brook Drive and Sandhill Road to observe and characterize surcharge levels in the sewer. As part of the Master Servicing Study for expansion area W-1, an examination of solutions to mitigate surcharge in the sewer should be undertaken. (August 15, 2023, BluePlan Memo)

The Briar Ridge Pump Station (BRPS) is currently being upgraded to an ultimate rated capacity of 175L/s to accommodate all growth identified with the BRPS catchment area. The 2023 WWMP identified a portion of Area W-1 outletting to the BRPS, and did not identify any further upgrades to the BRPS to accommodate a portion of Area W-1.

The inherent reality of monitored flows within wastewater systems results in monitored flows being 50% to 60% of design flows. Based on the complete buildout of the KNUEA lands and the ultimate rated capacity of the BRPS, we anticipate there would be a residual capacity for approximately 35ha to 40ha of the subject lands in the BRPS. The specific area and resulting flows to the BRPS and confirmation of sufficient capacity of the pump station available for the site would be evaluated and confirmed during the City Local Plan/Secondary Plan process.

4.0 STORMWATER

4.1 Existing Conditions

4.1.1 Land Use and Topography

The subject site is comprised of a combination of wooded areas and gentle rolling pastureland interspersed with several rural estate lot subdivisions. Storm runoff generally flows from west to east and is conveyed by a network of tributary channels which are tributary to Shirley's Brook, and ultimately to the Ottawa River.

The South March Highlands Wetland Complex is located to the west of the SMUEA lands and serves as the headwaters for the Shirley's Brook Northwest Branch Tributaries which flow through the subject lands.

4.1.2 Soil Types

Based on data from the Ontario Geological Survey, the soils in the western portion of the SMUEA lands are variable, consisting of a combination of glacial till and silty clay with medium to low permeability and some areas of shallow or exposed bedrock.

There is a layer of sandy soil running across the eastern portion of the SMUEA lands between March Road and March Valley Road, which could provide opportunities for infiltration-based stormwater management strategies.

4.1.3 Storm Drainage Areas

The SMUEA lands are located within the Shirley's Brook Subwatershed. Pre-development storm drainage areas are shown on **Figure 7 (Drainage and Existing Conditions)**.

The western portion of the SMUEA lands are part of the Northwest Branch of Shirley's Brook, which consists of several tributary watercourses (Tributaries 2, 3, 4) which come to a confluence with the Main Branch of Shirley's Brook just downstream of Maxwell Bridge Road in the Brookside Subdivision.

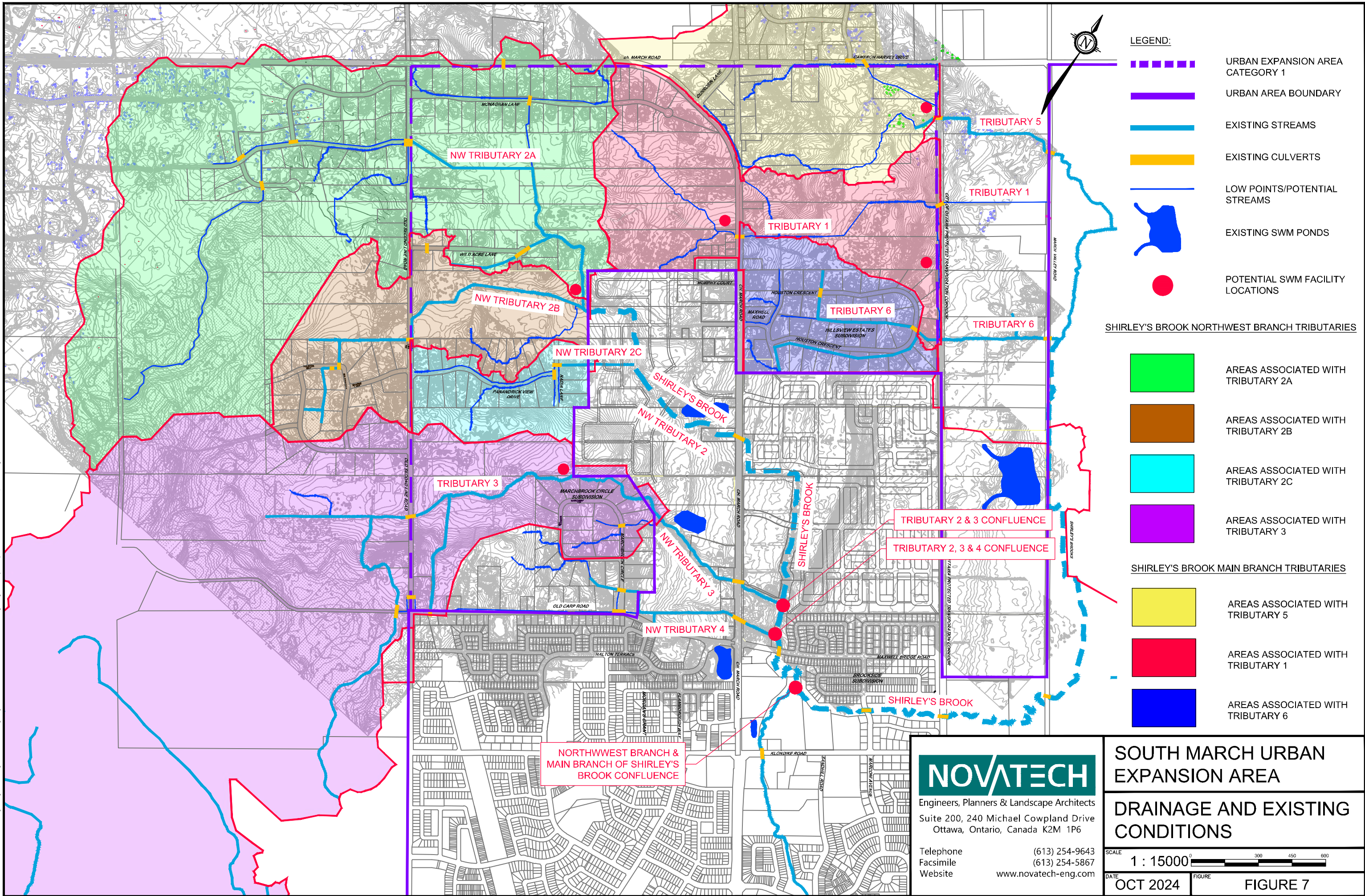
The eastern portion of the SMUEA lands are tributary to the Main Branch of Shirley's Brook, with storm runoff collected by several watercourses (Tributaries 1, 5, 6) which cross under the former rail corridor and March Valley Road.

4.1.4 Estate Lot Subdivisions

There are several existing estate lot subdivisions within the SMUEA lands. Storm drainage for these subdivisions is provided by ditches and culverts, with storm outlets to various tributaries of Shirley's Brook. The storm outlets for these existing developments will need to be maintained or modified as part of the proposed development

- Monaghan Lane is located in the northwest corner of the SMUEA lands, with access from Old Second Line Road. Storm runoff from the western portion of the subdivision is conveyed to Shirley's Brook Northwest Branch Tributary 2 by an outlet channel between 1516 and 1518 Monaghan Lane. Storm runoff from the eastern portion of the subdivision is conveyed to

M:\2021\1121038\CAD\Design\Figures\Figures\121038-STM FIGURE.dwg, Figure 7 (STM), Oct 21, 2024 - 3:04pm, rkeirgus



- LEGEND:**
- URBAN EXPANSION AREA CATEGORY 1
 - URBAN AREA BOUNDARY
 - EXISTING STREAMS
 - EXISTING CULVERTS
 - LOW POINTS/POTENTIAL STREAMS
 - EXISTING SWM PONDS
 - POTENTIAL SWM FACILITY LOCATIONS

SHIRLEY'S BROOK NORTHWEST BRANCH TRIBUTARIES

- AREAS ASSOCIATED WITH TRIBUTARY 2A
- AREAS ASSOCIATED WITH TRIBUTARY 2B
- AREAS ASSOCIATED WITH TRIBUTARY 2C
- AREAS ASSOCIATED WITH TRIBUTARY 3

SHIRLEY'S BROOK MAIN BRANCH TRIBUTARIES

- AREAS ASSOCIATED WITH TRIBUTARY 5
- AREAS ASSOCIATED WITH TRIBUTARY 1
- AREAS ASSOCIATED WITH TRIBUTARY 6

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SOUTH MARCH URBAN EXPANSION AREA
DRAINAGE AND EXISTING CONDITIONS

SCALE 1 : 15000

DATE OCT 2024 FIGURE FIGURE 7

Northwest Branch Tributary 1 through a channel running through the rear yard of 1535 Monaghan Lane and along the west side of March Road.

- Wild Acre Lane is located in the western portion of the SMUEA lands, with access from Old Second Line Road. Storm runoff from this subdivision outlets to Shirley's Brook Northwest Branch Tributary 2 via an outlet ditch running through the rear yard of 9 Wild Acre Lane.
- Panandrick View Drive and Nadia Lane are located in the western portion of the SMUEA lands with access from Old Second Line Road. Storm runoff from this subdivision is conveyed to Shirley's Brook Northwest Branch Tributary 2 by an existing outlet ditch running along the side yard of 1380 Nadia Lane. The downstream portion of this outlet ditch will be replaced by a 900mm storm sewer where it crosses through Copperwood Estates development.
- The Marchbrook Circle Subdivision is located in the southwest corner of the SMUEA lands, with access from Old Carp Road. Storm runoff from the majority of this subdivision outlets to Shirley's Brook Northwest Branch Tributary 3: The roadside ditches convey flows to an outlet ditch between 10 and 12 March Brook Circle. Storm runoff from the rearyards of the properties from 4 to 26 Marchbrook Circle flows overland directly to Tributary 3. Storm runoff from the entrance to the subdivision is conveyed to Shirley's Brook Northwest Branch Tributary 4 by an outlet ditch running along the side yards of 2 Marchbrook Circle and 1171 Old Carp Road.
- The Hillsvie Estates Subdivision is located in the southeast corner of the SMUEA lands, with access from March Road. Storm runoff from the subdivision is conveyed by roadside and rearyard ditches to an outlet channel running through the side yard 1422 Houston Crescent, which crosses under the former rail corridor and outlets to Shirley's Brook Tributary 1.
- Murphy Court is a small crescent located on the west side of March Road just north of St. Isadore Church. Storm runoff from Murphy Court is conveyed by roadside ditches to March Road, then north along the west ditch on March Road to Tributary 1.

4.2 Stormwater Management Criteria

Based on our experience in the area, the following criteria will likely form the stormwater management strategy of the site:

- Quality Control: Enhanced level protection (80% TSS removal)
- Quantity Control: Control post-development peak flows to pre-development (up to and including the 100-year event).
- Erosion Control: Ensure no adverse impacts on erosion of downstream water courses by controlling frequent events to erosion thresholds.
- Retention Control: Promote the use of LIDs and/or implement standard BMPs to increase infiltration to and groundwater recharge.

4.3 Proposed Storm Servicing

The SMUEA lands will be serviced using a dual-drainage system consisting of storm sewers (minor system) with overland flow paths following proposed road networks and drainage easements (major system). Storm runoff will be conveyed to end-of-pipe wet ponds for water quality and quantity control.

4.3.1 Storm Sewers

The proposed storm sewers will be designed according to City design guidelines and criteria. Inlet control devices will be installed in road and rear yard catchbasins to control inflows to the storm sewers based on the following levels of service:

- Local Roads 1:2 year
- Collector Roads 1:5 year
- Arterial Roads 1:10 year

4.3.2 Major System (Overland Flow)

Major System flows (flows exceeding the capacity of the minor system) will be conveyed overland, following the rights-of-way and/or defined drainage easements through the SMUEA lands. In general, major system flows will be conveyed to one of the proposed SWM facilities for quantity control. There may be some areas where major system flows could outlet directly to the receiving watercourses provided there are no adverse impacts associated with this approach.

4.3.3 Stormwater Best Management Practices and Low Impact Development

Stormwater Best Management Practices will be implemented where feasible to promote infiltration and treatment of stormwater runoff from the SMUEA lands. Opportunities for Low Impact Development (LID) stormwater management strategies will be investigated as part of the proposed development and reviewed with the City's Asset Management Branch through the City Local Plan/Secondary Plan process and future design processes.

4.3.4 Stormwater Management Facilities

End-of-Pipe stormwater management facilities (wet ponds) are proposed to provide water quality and quantity control for the SMUEA lands. Potential SWM facility locations are shown on **Figure 7 (Drainage and Existing Conditions)**.

Proposed SWM facilities will be designed in accordance with the City's Draft Guidelines for Stormwater Management Facilities (2012) and the MOE Stormwater Management Planning and Design Manual (2003). The SWM facilities will be integrated into the proposed development and will include pathways and other landscaping features.

4.3.5 Watercourse Corridors

The proposed stormwater management strategy will need to accommodate the existing watercourses crossing the SMUEA lands. The majority of these watercourses are intermittent, with little to no flow during the summer months. Protected corridors will be provided for watercourses to be retained, following the recommendations of the fluvial geomorphic and environmental studies. Opportunities to realign and enhance drainage corridors will be explored. For example, some of the watercourses could be realigned to serve as buffers to the existing estate lot subdivisions.

4.3.6 Legal Outlet

Many of the existing ditches, watercourses, and drainage channels crossing the SMUEA lands do not have defined drainage easements. All watercourses receiving post-development runoff from the SMUEA lands will need to have legal and sufficient outlets:

- Northwest Branch Tributary 2 (branches 2A, 2B, 2C) will be a legal and sufficient outlet, as this watercourse has a defined and protected corridor all the way to the confluence with the Main Branch of Shirley's Brook.
- Northwest Branch Tributary 3 crosses through the rear yards of lots on Marchbrook Circle and does not have a defined drainage easement across these properties. Post-development runoff from the SMUEA lands to Tributary 3 will need to consider how to provide a legal and sufficient outlet for this section of the watercourse.
- Northwest Branch Tributary 4 is located within the right-of-way of Old Carp Road, then leaves the right-of-way and flows east across lands within the Kanata North Urban Expansion Area (KNUEA), crossing under March Road and outletting to Tributary 2 just upstream of the confluence with the Main Branch of Shirley's Brook. The section of watercourse through the KNUEA will be abandoned, with flows from the upstream area collected by the proposed storm sewers servicing the KNUEA lands. East of March Road, Tributary 4 flows through the back of the McDonalds Restaurant property. The section of Tributary 4 downstream of March Road does not have a defined drainage easement, but also serves as the outlet for the Morgan's Grant SWM Facility.
- Main Branch Tributaries 1, 5 and 6 cross under the former rail corridor and flow across privately owned lands before outletting to the Main Branch of Shirley's Brook on the NCC lands east of March Valley Road. Post-development runoff to these tributaries will need to consider how to provide legal and sufficient outlet.

Legal and sufficient outlets would be defined as part of the City Local Plan/Secondary Plan process.

5.0 SCORING

The servicing details described in the previous sections were summarized in the City's previous scoring of the subject lands, Novatech's previous scoring submissions for various parcels within the South March lands, and Novatech's new scoring submission for all parcels.

In support of this *Official Plan Amendment* application, Novatech completed an updated servicing scoring for the SMUEA which reaffirms the scoring completed by City staff and in some instances scores higher than the scoring completed in 2021. Some of the increase in scoring can be attributed to a reduction of the City of Ottawa design water demands from Technical Bulletin ISTB-2021-03, issued August 18, 2021.

The scoring is provided in the Planning Rationale and the scoring is well above the threshold for servicing. Based on the scoring results, we recommend a *Category 1 - Future Neighbourhood Overlay* designation on the South March lands.

6.0 SUMMARY AND CONCLUSIONS

Novatech has prepared this Servicing Capacity Assessment in relation to an application for Official Plan Amendment for the properties within the South March Urban Expansion Area (SMUEA) in Ward 5 West-Carleton March Ottawa, Ontario.

City Review

- City of Ottawa staff reviewed the subject lands in 2021 as part of the comprehensive review of the Official Plan and recommended that the SMUEA lands be designated as Category 1 as a future growth area.
- The City Council adopted *Official Plan (2021)* did not include the SMUEA as part of the future urban expansion area.
- The *City of Ottawa Official Plan (2022)* approved by the Ministry of Municipal Affairs and Housing (MMAH) on November 4, 2022 included a series of modifications. The modifications made by the MMAH included adding the SMUEA on *Official Plan Schedule C17 - Urban Expansion Areas* as a *Category 1 - Future Neighbourhood Overlay*.
- The 2023 Draft Infrastructure Master Plan (2023 Draft IMP) reviewed the subject lands with regards to being able to extend existing municipal services.
- This decision was subsequently reversed by the MMAH on December 6, 2023. The previously completed City of Ottawa servicing review of the subject lands was removed from the 2024 IMP.
- This report references the previous City servicing review conducted in support of the 2023 Draft IMP.

Water

- There would be existing capacity within the City of Ottawa water distribution system based on the recommended projects in the 2023 Draft IMP.
- The subject Lands would be connected to the Morgan's Grant and 2Ww pressure zones.
- The subject lands could be serviced with minimal offsite works, which are estimated by the 2023 Draft IMP to cost approximately \$15 million and would be a DC eligible project.
- This would be evaluated further during the City Local Plan/Secondary Plan process once the subject lands have been included as part of the Official Plan.

Wastewater

- There is existing capacity within the City of Ottawa wastewater system, and there were no recommended projects in the 2023 Draft IMP.
- The subject lands could be serviced with minimal offsite works and no identified DC projects. This would be evaluated further during the City Local Plan/Secondary Plan process once the subject lands have been included as part of the Official Plan.

Stormwater

- Storm runoff generally flows from west to east and is conveyed by a network of tributary channels which are tributary to Shirley's Brook, and ultimately to the Ottawa River.
- The subject lands will be serviced using a dual-drainage system consisting of storm sewers (minor system) with overland flow paths following proposed road networks and drainage easements (major system).

- End-of-Pipe stormwater management facilities (wet ponds) are proposed to provide water quality and quantity control for the SMUEA lands.
- The proposed stormwater management strategy will need to accommodate the existing watercourses crossing the SMUEA lands.
- Many of the existing ditches, watercourses, and drainage channels crossing the SMUEA lands do not have defined drainage easements. They would be improved as part of the development of the SMUEA as required. All watercourses receiving post-development runoff from the SMUEA lands will need to have legal and sufficient outlets. This would be defined as part of the City Local Plan/Secondary Plan process.

Scoring

- The SMUEA received its total scoring by the City of Ottawa and was recommended to be designated as *Category 1 - Future Neighbourhood Overlay* in 2021.
- Novatech recently completed an updated scoring of the SMUEA lands, with scoring that is generally consistent with or higher than the 2021 City of Ottawa scoring.

Based on the information enclosed within this report, the subject lands can be serviced, and we recommend a *Category 1 - Future Neighbourhood Overlay* designation on the SMUEA lands. City staff previously reviewed the subject lands for servicing capacity in the 2023 Draft IMP and recommended their inclusion in the urban boundary. Therefore, further City capacity review is not required.

NOVATECH



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Appendix A

1. Excerpt from the City of Ottawa's Official Plan Amendment (OPA) process (January 2021)

DOCUMENT 2

Category 1 and 2 Lands

- South March Cluster
- Stittsville Cluster
- Barrhaven South Cluster
- Riverside South Cluster
- Leitrim Cluster
- Orléans South Cluster
- Orléans North Cluster

Introduction

This document presents a planning overview and the results of the evaluation of candidate lands for urban expansion. It summarizes the evaluation results for Category 1 lands (Pass 1 and 2) with strong Adherence to the GMS and Five Big Moves and Category 2 lands with partial adherence to the GMS and Five Big Moves. Additional refinements and detail are outlined in Document 1.

The land use planning overview includes commentary on existing land area, Official Plan designation(s), land use, planning context and proximity to employment, retail and recreational facilities and the natural environment. The servicing and transportation evaluation criteria and implications are provided for seven clusters of land across the city. The servicing evaluation and scoring for each of the clusters considers on-site and off-site requirements and is presented in five main factors: water supply; wastewater capacity; stormwater outlet; integration factor and penalty factors / geotechnical conditions. The Transportation analysis and evaluation focuses on the primary evaluation criteria including lands within or in proximity to the 1.9 km radial Transit Catchment Area as well as transit capital and operating, road capacity, modal share and vehicle kilometres traveled (VKT) considerations.

South March Cluster



Net Developable Area:	175.35 ha	Planning Status:	no applications
Official Plan Designation:	General Rural Area	Zoning:	RU – Rural Countryside
Land Use:	Fields and forested areas with some agricultural and single detached residential uses. Pockets of rural estate subdivisions. Some tributaries of Shirley's Brook can be found within the cluster.		
Description:	<p>Located in South March east of Old Second Line Road and south of March Road. The Beachburg rail corridor (non-active) runs along the eastern edge of the cluster. East of the corridor are lands constrained from development by the Connaught Range and Primary Training Facility (DND).</p> <p>The lands include five existing subdivisions which would be added to the urban boundary and public service area.</p> <p>The current urban boundary is irregular shaped, a result of the previous urban expansion approved through OPA 76 hearings. The approved Kanata North Community Design Plan as well as active subdivision applications contemplate</p>		

Servicing

further road connections to the cluster. This would facilitate connectivity and integration with the existing urban area.

The cluster is in close proximity to existing facilities and services such as retail (including grocery store), recreational facilities, schools and employment uses including the Kanata North Technology Park, the largest non-governmental cluster of jobs in Ottawa.

Parcels east of the Beachburg rail corridor adjacent to March Valley Road are impacted from the Connaught Range and Primary Training Facility and have therefore been excluded from further consideration. This is consistent with the outcome of OPA 76 hearings on the matter as well as recent correspondence from the Department of National Defense confirming the range is intended to continue to operate on a daily basis (both day and nighttime) and with a range of noise sources including firearms, explosives and heavy vehicles.

Water

The South March Servicing Cluster Areas (SCAs) are situated adjacent to two pressure zones: 2W/2C and the Morgan's Grant pressure zone. With the exception of areas west of Old Second Line Road, and SM-9b, (see Identification map below) the area can be serviced with good water pressure from Zone 2W/2C via watermain connections in the Kanata North Urban Expansion Area (KNUEA) lands.

Due to high elevation, of the parcels west of Old Second Line Road, and SCA SM-9b they would ideally be serviced by pressure zone 3W, which would require the construction of a new watermain on Old Second Line south to Terry Fox Drive. The construction of this watermain would create an opportunity to eliminate the Morgan's Grant pressure zone, and by connection to the Morgan's Grant water distribution network, provide looping for redundancy. A 3W zonal capacity upgrade, MG pump station decommissioning, and installation of PRV's in the existing MG area would also be required. If the parcels west of Old Second Line Road and SM-9b are not serviced by pressure zone 3W then the water pump station serving the Morgan's Grant pressure zone would require an upgrade to service these SCAs, a new watermain constructed on Old Second Line and several watermains would need to be upgraded in the Morgan's Grant area to provide redundancy.

Wastewater

The future March Road Collector and East March Trunk have capacity to service expansion areas contiguous to the Kanata North Urban Expansion Area (SM-1a, SM-2, SM-5, SM-6a, SM-8) by gravity. However, service to areas SM-3, SM-9a, SM-9b and the parcels west of Old Second Line Road would require major upgrades to the March Road Collector or a new sewer conveying flows to the East March Trunk. Furthermore, twinning sections of the East March Trunk would also be required to store excess flow during large wet weather events.

Servicing areas SM-1b, SM-6b, would require a new off-site trunk discharging to future sanitary sewers within the Kanata North Urban Expansion area.

Depending on actual future flows, sufficient residual capacity to service SM-3, SM-9a, SM-9b and the parcels west of Old Second Line Road could be available in the downstream trunk sewers. To reduce off-site servicing costs and minimize impacts on existing development areas, SCAs SM-3, SM-9a, SM-9b and the parcels west of Old Second Line Road could be gated until flow monitoring demonstrates sufficient residual capacity.

Stormwater

All South March SCAs are located within the Shirley's Brook watershed. Surface

runoff from the SCAs is collected in small tributaries or ditch drainage systems of Shirley's Brook, which are expected to require some improvements to establish a reliable outlet for urban drainage. Shirley's Brook itself has existing erosion problems that require analysis and implementation of a long-term mitigation plan prior to any new development. Geotechnical conditions and topographic relief in the area of available stormwater outlets are favourable in all SCAs to avoid long-term maintenance challenges associated with submerged storm sewer systems.

Penalty Factors

Much of the area is underlaid by shallow bedrock, and some SCAs are located adjacent to Country lot subdivisions on private services (well and septic) that could be at risk due to blasting. Isolated areas have depressional storage / imperfect drainage that, if lost through urbanization, would add to the increase in runoff volume that would be normally expected as a result of development based on conventional practices. This would contribute further to erosion conditions in Shirley's Brook.

Transportation

Parcels in this cluster are within the 1.9km radial catchment area from the planned March Road Transitway transit stations. There is a planned park & ride lot located at the terminus transit station on March Road, at the southern edge of the cluster boundary.

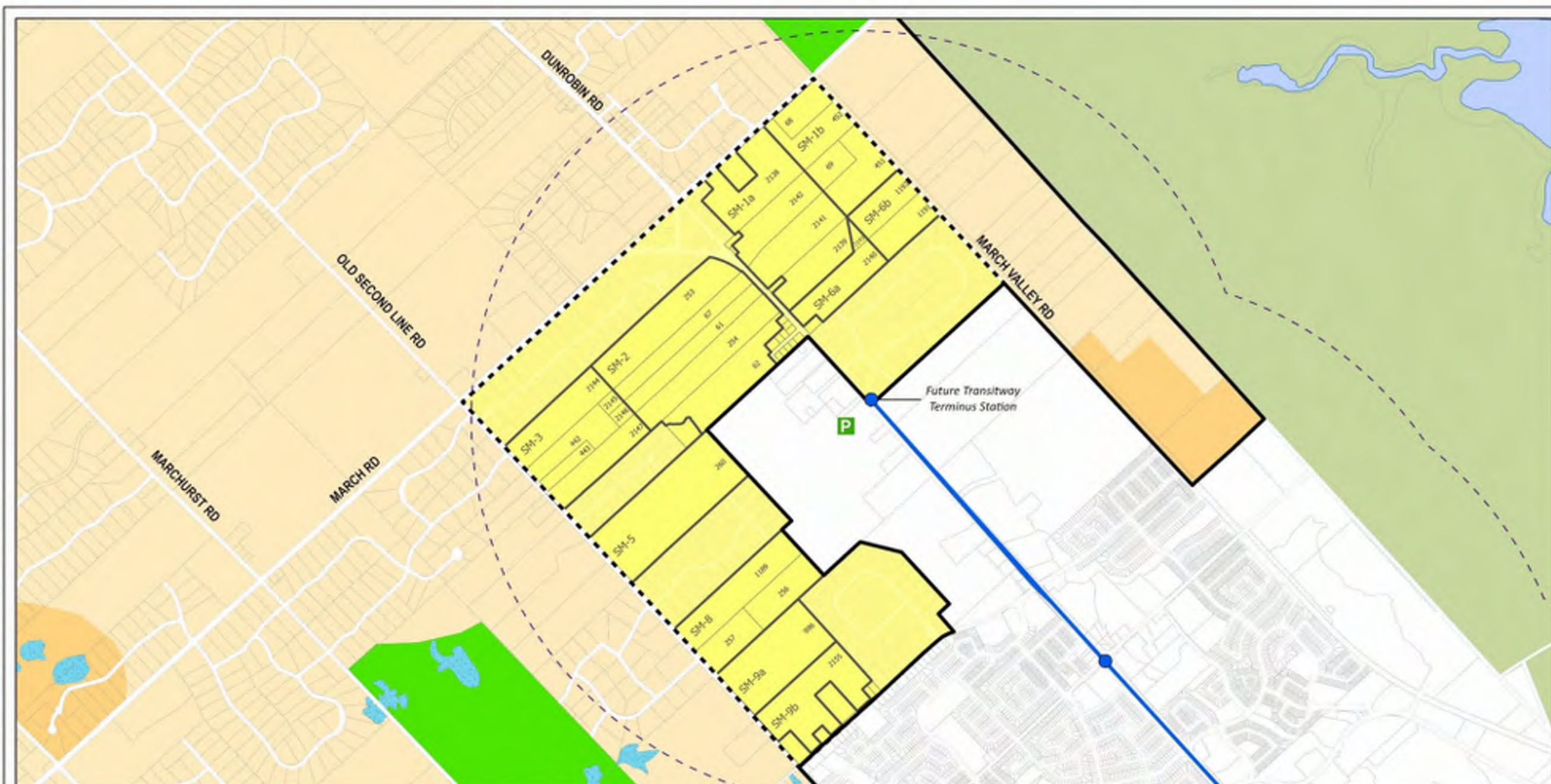
March Road provides the only direct arterial road access to Highway 417.

South March Cluster – Scoring – Category 1

SCA ID	1. Water	2. Wastewater (sanitary)	3.a) Stormwater characteristics and availability of surface water outlets	3. b) Stormwater - expected grade raise requirement relative to restrictions and other topographic constraints on drainage.	4.Servicing Integration Factor	5.Servicing Risk Factors	Total Servicing	6.Availability of Rapid Transit or Transit Priority - Isolated Measures	7.Proximity to nearest Rapid Transit Station, Transit Priority Corridor – Isolated Measures or Park and Ride feeding Rapid Transit System	Total Transit	8. Proximity to Jobs	9.Proximity to Convenience Retail	10.Distance to Major City Facilities	11.Distance to Emergency Services – Fire	12.Potential Arterial Road Upgrades	13.Connectivity	14. Conflict with Agricultural Land Uses	15.Active Agricultural Operation	16.Natural Heritage Linkages	Total Score	Category
SM-1-a 2138	8	8	0	6	6	-4	24	10	4	14	6	1	1	3	0	6	0	-1	0	54	1
SM-1-a 2142	8	8	0	6	6	-4	24	10	4	14	6	1	1	3	0	8	0	-2	0	55	1
SM-1-a 2141	8	8	0	6	6	-4	24	10	8	18	6	1	1	3	0	6	0	-2	0	57	1
SM-1-a 2139	8	8	0	6	6	-4	24	10	8	18	8	1	1	3	0	6	0	-1	0	60	1
SM-1-b 68	8	2	0	6	4	-4	16	10	4	14	6	1	0	3	0	6	0	-1	0	45	1
SM-1-b 452	8	2	0	6	4	-4	16	10	4	14	6	1	1	3	0	6	0	-1	0	46	1
SM-1-b 69	8	2	0	6	4	-4	16	10	4	14	6	1	1	3	0	8	0	-2	0	47	1
SM-1-b 451	8	2	0	6	4	-4	16	10	8	18	6	1	1	3	0	6	0	-2	0	49	1
SM-2 253	8	8	0	6	6	-4	24	10	4	14	8	1	1	3	0	6	0	-2	0	55	1
SM-2 67	8	8	0	6	6	-4	24	10	8	18	8	1	1	3	0	8	0	-1	0	62	1
SM-2 61	8	8	0	6	6	-4	24	10	8	18	8	1	2	3	0	8	0	-1	0	63	1
SM-2 254	8	8	0	6	6	-4	24	10	8	18	8	1	2	3	0	6	0	-1	0	61	1
SM-2 62	8	8	0	6	6	-4	24	10	8	18	8	1	2	3	0	6	0	-1	0	61	1
SM-3 2144	6	2	0	6	6	-4	14	10	4	14	8	1	1	3	0	6	0	-2	0	45	1
SM-3 442	6	2	0	6	6	-4	14	10	4	14	8	1	2	3	0	6	0	-1	0	49	1
SM-3 2145	6	2	0	6	6	-4	14	10	8	18	8	1	1	3	0	8	0	-1	0	52	1
SM-3 2146	6	2	0	6	6	-4	14	10	8	18	8	1	2	3	0	8	0	-1	0	53	1
SM-3 443	6	2	0	6	6	-4	14	10	4	14	8	1	2	3	0	8	0	-1	0	49	1
SM-3 2147	6	2	0	6	6	-4	14	10	8	18	8	1	2	3	0	6	0	-1	0	51	1
SM-5 260	6	6	0	6	6	-2	22	10	8	18	8	1	2	3	0	2	0	-1	0	55	1
SM-6-a 2143	8	2	0	6	4	-2	18	10	8	18	8	1	1	3	0	6	0	-1	0	60	1
SM-6-a 2140	8	2	0	6	4	-2	18	10	8	18	8	1	2	3	0	2	0	-1	0	57	1
SM-6-b 1193	8	2	0	6	4	-2	18	10	8	18	8	1	1	3	0	6	0	-1	0	54	1

		1. Water	2. Wastewater (sanitary)	3.a) Stormwater characteristics and availability of surface water outlets	3. b) Stormwater - expected grade raise requirement relative to restrictions and other topographic constraints on drainage.	4.Servicing Integration Factor	5.Servicing Risk Factors	Total Servicing	6.Availability of Rapid Transit or Transit Priority - Isolated Measures	7.Proximity to nearest Rapid Transit Station, Transit Priority Corridor – Isolated Measures or Park and Ride feeding Rapid Transit System	Total Transit	8. Proximity to Jobs	9.Proximity to Convenience Retail	10.Distance to Major City Facilities	11.Distance to Emergency Services – Fire	12.Potential Arterial Road Upgrades	13.Connectivity	14. Conflict with Agricultural Land Uses	15.Active Agricultural Operation	16.Natural Heritage Linkages	Total Score	Category
SM-6-b	1191	8	2	0	6	4	-2	18	10	8	18	8	1	2	3	0	2	0	-1	0	51	1
SM-8	1189	6	8	0	6	6	-2	24	10	8	18	8	1	3	3	0	6	0	0	0	63	1
SM-8	257	6	8	0	6	6	-2	24	10	4	14	8	1	3	3	0	8	0	-1	0	60	1
SM-8	256	6	8	0	6	6	-2	24	10	8	18	8	1	3	3	0	6	0	0	0	63	1
SM-9a	996	6	2	0	6	4	-2	16	10	4	14	8	3	4	3	0	6	0	0	0	54	1
SM-9b	2155	2	2	0	6	2	-2	10	10	4	14	8	3	4	3	0	6	0	0	0	48	*

*Note the area (ha) of SM-9b has not been included in the total area due to servicing constraints however the entire parcel which consist of SM-9a and b has been included since this logical urban area boundary.



OFFICIAL PLAN
 URBAN BOUNDARY EXPANSION STUDY
South March

Urban Area	Park & Ride	Servicing Cluster Areas (SCAs)
Greenbelt (See Schedule B)	Transitway Station	Urban Boundary (Official Plan)
General Rural Area	Transitway	Category 2 - Assessed - (Not Recommended)
Rural Natural Features Area	Transit 1900m Radius	
Natural Environment Area		
Significant Wetlands		

Category 1 - Recommended Additions to the Urban Boundary
Pass 1
Pass 2
New Urban Boundary (Proposed)

N

0 250 500 750 1,000 m

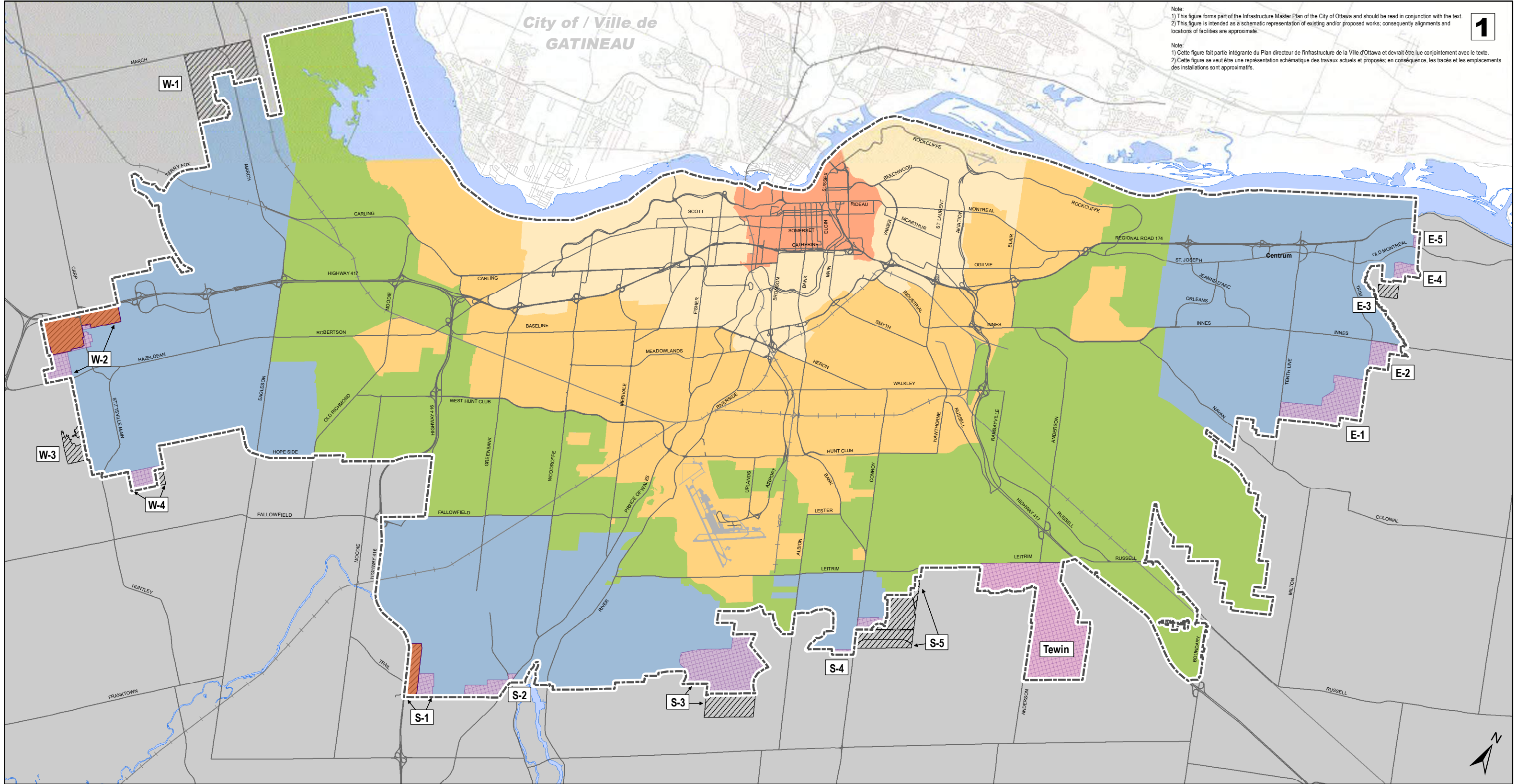
Planning, Infrastructure and Economic Development Department,
 Services de la planification, de l'infrastructure et du développement économique,
 Analyse géospatiale, technologie et solutions

Appendix B



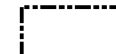

1. Excerpt figure from the City of Ottawa 2023 Draft Infrastructure Master Plan (IMP) – Infrastructure Master Plan - Schedule 1 – Urban Expansion Areas as defined in the Official Plan
2. Excerpt from the City of Ottawa 2023 Water Master Plan (WWMP) Final Draft - September 26, 2023 – Table 2-3: Existing Potable Water Pumping Stations
3. Excerpt figure from the City of Ottawa 2023 Draft Infrastructure Master Plan (IMP) – Figure 9-1 – Future Water Distribution System
4. Excerpt figure from the City of Ottawa 2023 Draft Infrastructure Master Plan (IMP) – Watermains to Urban Expansion Area W-1
5. Excerpt From City of Ottawa Wastewater Master Plan (WWMP) - Existing & Future System Capacity Assessment Technical Memorandum, GM BluePlan File No.: 719038 August 15th, 2023
6. GM BluePlan WWMP Expansion Area Analysis: Kanata and Stittsville Memo, August 15, 2023

Note:
1) This figure forms part of the Infrastructure Master Plan of the City of Ottawa and should be read in conjunction with the text.
2) This figure is intended as a schematic representation of existing and/or proposed works, consequently alignments and locations of facilities are approximate.







Note:
1) Cette figure fait partie intégrante du Plan directeur de l'infrastructure de la Ville d'Ottawa et devrait être lue conjointement avec le texte.
2) Cette figure se veut être une représentation schématique des travaux actuels et proposés; en conséquence, les tracés et les emplacements des installations sont approximatifs.



URBAN EXPANSION AREAS / ZONES D'EXPANSION URBAINE

-  Future Neighbourhood / Futur quartier
-  Industrial and Logistics / Industrie et Logistique
-  Urban Boundary / Périmètre d'urbanisation
-  Expansion Areas added and then rescinded by MMHA / Zones d'expansion ajoutées puis annulées par MMHA

TRANSECT POLICY AREAS / SECTEURS STRATÉGIQUES DU TRANSECT

-  Downtown Core / Centre-ville
-  Inner Urban / Urbain intérieur
-  Outer Urban / Urbain extérieur
-  Greenbelt / Ceinture de verdure
-  Suburban / Suburbain
-  Rural / Rural

INFRASTRUCTURE MASTER PLAN - Schedule 1
Urban Expansion Areas as defined in the Official Plan
PLAN DIRECTEUR DE L'INFRASTRUCTURE - Annexe 1
Zones d'expansion urbaine comme défini dans le Plan officiel

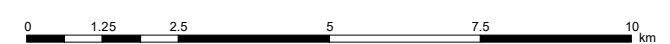


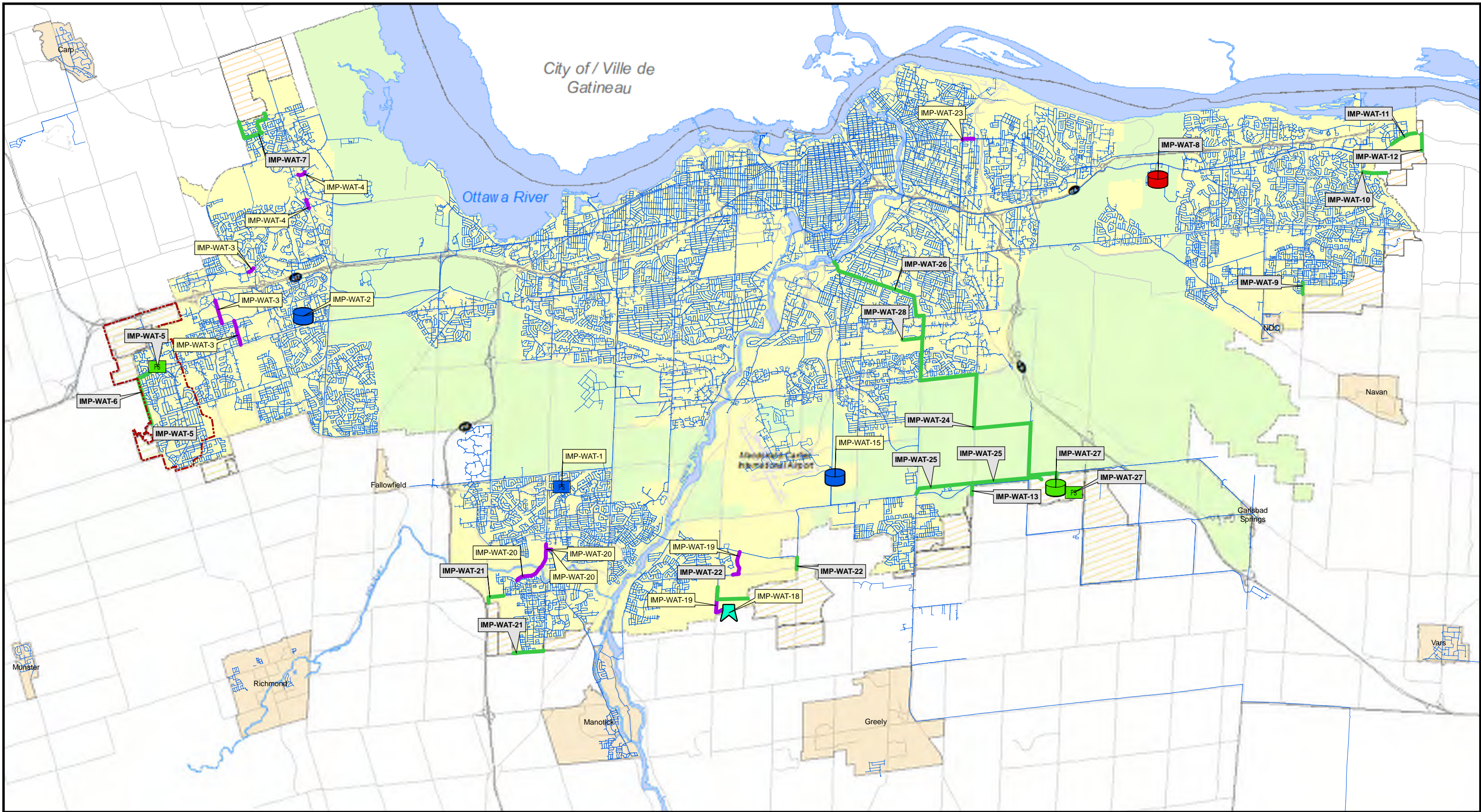
Table 2-3: Existing Potable Water Pumping Stations

Zone	Facility	Open/ Closed	HGL (m)	Rated Capacity (MLD) ⁽¹⁾	
				PS Total	Zone Firm ⁽²⁾
MG	Morgan's Grant	Closed	148	17.7	12.3
3W	Glen Cairn	Open	159	148.0	205.0
	Campeau		159	100.0	
3SW	Fallowfield	Open	151	14.0	14.0
	Barrhaven-3SW		151	7.0	
2W	Britannia-2W	Open	129	330.0	345.0
	Carlington Heights-2W ⁽³⁾		129	120.0	
ME	Carlington Heights-ME ⁽³⁾	Closed	155	18.0	12.0
1W	Lemieux	Open	112	426.0	895.8
	Britannia-1W		112	285.8	
	Fleet Street		112	320.0	
2C	Hurdman Bridge-2C	Open	129	55.0	89.6
	Billings Bridge		129	129.6	
SUC	Ottawa South-SUC ⁽³⁾	Closed	147	90.0	120.0
	Barrhaven-SUC		147	90.0	
YOW	Ottawa South-YOW ⁽³⁾	Closed	157	36.4	14.4
LEIT	Leitrim-LEIT	Closed	164	4.7	2.4
RUSSELL ⁽⁴⁾	Leitrim-RUSSELL ⁽⁴⁾	N/A ⁽⁴⁾	N/A ⁽⁴⁾	28.6	14.3
MONT	Brittany	Closed	147	30.0	42.7
	Montreal		147	44.2	
1E	Hurdman Bridge-1E	Open	114	320.0	230.0
2E	Orleans	Open	131	80.6	124.6
	Forest Ridge		131	84.0	

Notes

- (1) The nominal capacity of the station with all pumps in operation.
- (2) Total capacity of the station less the capacity of the largest pump. Typically, pump stations are designed to provide a firm capacity that is at least equal to the expected water system demand at the planning horizon. Refer to TM#1 for further details on the definition of firm capacity.
- (3) Recently upgraded PS or PS currently undergoing upgrades; individual pumps' operational capacities assumed equal to rated capacity.
- (4) While Russell is not a pressure zone of the City of Ottawa analyzed as part of the WMP, the pumping capacity dedicated to Russell at the Leitrim PS is reported for completeness.





Infrastructure Master Plan - Figure 9-1
Future Water Distribution System

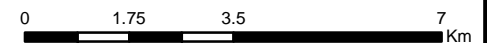
Plan directeur de l'infrastructure - Figure 9-1
Réseau de distribution d'eau potable futur

- City Boundary
- Urban Boundary
- Urban Expansion Area
- Greenbelt
- Villages

- PS Recommendations**
- Existing PS Expansion (2013 WMP Project)
 - Existing PS Expansion (New Project)
 - New PS (New Project)
 - New Pressure Zone

- Storage Recommendations**
- Existing Reservoir Expansion (2013 WMP Project)
 - New Elevated Tank (2013 WMP Project)
 - Existing Reservoir Expansion (New Project)
 - New Reservoir (New Project)

- Watermain Recommendations**
- Watermain Upgrades (2013 WMP Project)
 - Watermain Upgrades (New Project)
- Project Label**
- 2013 WMP Project
 - New Project



Watermains to Urban Expansion Area W-1



PROJECT RATIONALE

What: The project includes the construction of a 406mm diameter watermain along Klondike Road/ Old Second Line Road from Morgan's Grant Pump Station to Urban Expansion Area W-1 and a 406mm diameter watermain along Klondike Road/ Penrith Street/ Dunollie Crescent/ March Brook Circle from Morgan's Grant Pump Station to Urban Expansion Area W-1.

Why: The purpose of this project is to accommodate projected growth to 2046 in the urban expansion area W-1.

PROJECT SCHEDULE

Budget Authority	2029-2034
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PROJECT FUNDING

Total Capital Estimate	\$15.4 M
% Growth Funded	100%
% Rate Funded	0%
% Other Source Funded	0%

APPROVALS AND FOLLOW-UP ACTIONS

EA Requirements	This project is Exempt under the Municipal Engineers Class EA
Follow-up Actions	<p>The following actions are required to pursue implementation of this project:</p> <ol style="list-style-type: none"> 1. Coordinate project, including selection of preferred alignments, with expansion area development planning (part of implementation to be developer led) 2. Functional, preliminary and detailed design 3. Implementation (tender and construction) 4. Carry out study of Morgan's Grant Pump Station to confirm need for upgrades to meet expansion area build-out demands

Under future conditions, hydraulic model results were generally consistent with existing conditions in the West (WCR) area, with only localized surcharging and capacity constraints shown. There are planned infrastructure improvements at Acres PS, March Ridge Trunk, and TriTownship Collector, which all resolve surcharging shown in the model under existing conditions.

The planned capacity expansion at Richmond PS was updated in the model (from 160 L/s to 350 L/s); however, the future modelled flow at Richmond PS was 405 L/s. This total includes 25 L/s peak flow from the Munster hamlet, which should be shut down when flows are high at Richmond PS.

Future flow from expansion area W-1 results in some surcharging within the North Kanata Trunk; however, the HGL remains well below the 2.4m depth of cover trigger point for the 1-in-25-year June 2014 event.

It was noted that capacity expansions may be required at Shea Road PS and March Lift Station to service future population. Shea Road PS has an ultimate rated capacity of 84 L/s, and a future modelled flow rate of 92 L/s (exceeding its ultimate capacity).

Under future growth conditions, March Lift Station conveys a peak flow rate of approximately 432 L/s under the 1-in-25-year June 2014 event, which does exceed the facility's interim 256 L/s firm capacity. South West (Lynwood) Area

The South West (Lynwood) area generally comprises the South Urban Community (SUC) west of the Rideau River, which includes Manotick, Barrhaven, Riverside South and areas in Nepean that drain to the Lynwood Collector. The following major infrastructure provide wastewater service to the South West area:

Trunk Sewer Infrastructure

- Viewmount Drive Trunk
- South Woodroffe Trunk
- Greenbank Trunk
- Barrhaven Trunk
- West Rideau Collector
- South Nepean Trunk
- Riverside Drive Trunk
- Rideau River Crossing

Pumping Stations & Facilities

- Manotick PS
- Tartan PS
- Mahogany PS



Date: 8/15/2023 File: 719038
To: John Bougadis, Zoe Gong (City of Ottawa)
From: Jonathan Brickman, James Jorgensen (GM BluePlan)
Project: Wastewater Master Plan (WWMP)
Subject: Expansion Area Analysis: Stittsville

EXPANSION AREA ANALYSIS: KANATA AND STITTSVILLE

1 INTRODUCTION

1.1 Aims & Objectives

The aim of this analysis is to identify conceptual servicing strategies for the defined expansion areas. This aim will be achieved through the following objectives:

- Review existing system capacity
- Create future system scenario considering growth to 2046
- Identify and evaluate servicing alternatives to select preferred strategy
- Consider growth to 2101 to demonstrate that infrastructure recommendations for planning horizon do not limit future service to expansion lands

2 EXPANSION AREA DESCRIPTION

Five expansion areas are considered as part of the Kanata and Stittsville clusters: W-2, W-3, and W-4a, which were identified by the City, and W-1 and W-4b, which was identified by the Ministry of Municipal Affairs and Housing (MMAH).

Area W-1 is bounded by Old Second Line Road to the west, March Road and Cameron Harvey Drive to the North, March Valley Road to the east, and Old Carp Road to the south. Area W-2 is split into two separate areas, both of which are located north of Hazeldean Road, along and to the west of Carp Road. Area W-3 is located north of Fernbank Road, to the west of West Ridge Drive. Areas W-4a and W-4b are located south of Fernbank Road, and west of Shea Road.

The Kanata and Stittsville expansion areas are shown in Figure 1 and Figure 2.

2.1 Existing Development

There are no existing unserviced properties within Stittsville West or Stittsville South which could be added to the City's urban boundary and public service area.

2.2 Future Development

2046 population projections for the Stittsville expansion areas were provided by the City's Planning Department.

Table 1 below provides estimates of 2046 future population equivalent and design flows for the Stittsville expansion areas.

Table 1: Summary of Future System Demands

Area	Gross Developable Area (ha)	Effective Area (ha)	Future Population Equivalent	Future Employees	Future Peak Dry Weather Flow (L/s)	Future Peak Wet Weather Flow (L/s)
W-1 (City)	387	348	10,100	375	99	214
W-2 (City)	133	120	1,465	1,121	16	56
W-3 (City)	63	56	3,105	0	30	49
W-4a (City)	65	59	1,504	0	15	34
W-4b (MMAH)	16	14	806	0	8	13

Through the 2023 Wastewater Master Plan, it was noted that there is significant projected post-period (2101) growth in the Kanata and Stittsville South areas.

3 FUTURE WASTEWATER SERVICING

Capacity is generally available in downstream trunk sewers to service all growth within the Stittsville expansion areas.

Area W-1 will have split drainage between the Briaridge PS and the existing 600 mm March Road trunk sewer. Surge along the March Road sewer was noted, and further analysis is necessary at the Master Servicing stage to ensure surge levels are below underside of footing elevations in the Shirley's Brooke Community. Area W-2 will have split drainage between the existing 450 mm Hazeldean Road trunk sewer and the existing 375 mm on Derreen Avenue. No modelled capacity issues in 450mm Hazeldean trunk sewer were noted for all considered return period events under 2046 growth conditions; therefore, any proposed trunk sewer upsizing would be purely to service growth within W-2.

Area W-3 will have split drainage between the 300 mm Fernbank sewer, and the 450 mm Abbott Street sewer. Upsizing the local sewer on Fernbank may be required to accommodate a portion area W-3.

Areas W-4a and W-4b will be connect to Shea Road PS, which has a planned capacity expansion to accommodate 2046 growth demands. This will have a downstream impact on the Fernbank trunk sewer, which is currently planned for upsizing. However, no modelled capacity issues in 600mm Fernbank trunk sewer were noted for all considered return period events under 2046 growth conditions. The currently planned upgrades to the Fernbank trunk sewer will be adequate to service the Stittsville West expansion area.

A summary of costs for upgrades required immediately downstream of the subject expansion areas (as identified in the 2023 Wastewater Master Plan) is presented in Table 2.

Table 2: Infrastructure Upgrade Costs

Project ID	Infrastructure	Upgrade Requirements	Cost Estimate
WW.PS.005	Shea Road PS Capacity Upgrade & Forcemain	Increase pumping capacity to 110 L/s, construct second forcemain	\$5, 570,000M

4 DEVELOPMENT CHARGE & BENEFIT-TO-EXISTING

The Stittsville expansion areas do not include any existing unserviced dwellings. The identified infrastructure upgrades for Stittsville South would need to be entirely funded by future development charges to accommodate the expansion area. The table below provides a summary of cost split allocation based on this approach:

Table 3: Summary of Cost Split Allocation

Project	Required Infrastructure Cost	Existing Population Equivalent	Future Population Equivalent	BTE / DC Split	BTE	DC
Shea Road PS Capacity Upgrade & Forcemain (WW.PS.005)	\$5,570,000	0	2,310	0% / 100%	-	\$5,570,000

5 SUMMARY OF RECOMMENDATIONS

- Flow and/or level monitoring is recommended on the East March Trunk sewer near Shirley's Brook Drive and Sandhill Road to observe and characterize surcharge levels in the sewer. As part of the Master Servicing Study for expansion area W-1, an examination of solutions to mitigate surcharge in the sewer should be undertaken.
- The existing 450 mm Hazeldean trunk sewer and 375 mm Derreen Avenue trunk sewer are expected to have sufficient capacity to accommodate residential and ICI growth in the Stittsville West area (W-2).
- Capacity in the Fernbank local sewer may not be adequate to service a portion of Area W-3 without any further upsizing requirements.
- Shea Road PS will require a capacity expansion and forcemain upsizing to accommodate expansion in the Stittsville South area (W-4a and W-4b). Based on significant 2101 population growth in the Stittsville South area, there may be an opportunity to expand the capacity of Shea Road PS beyond the projected 2046 growth demands.

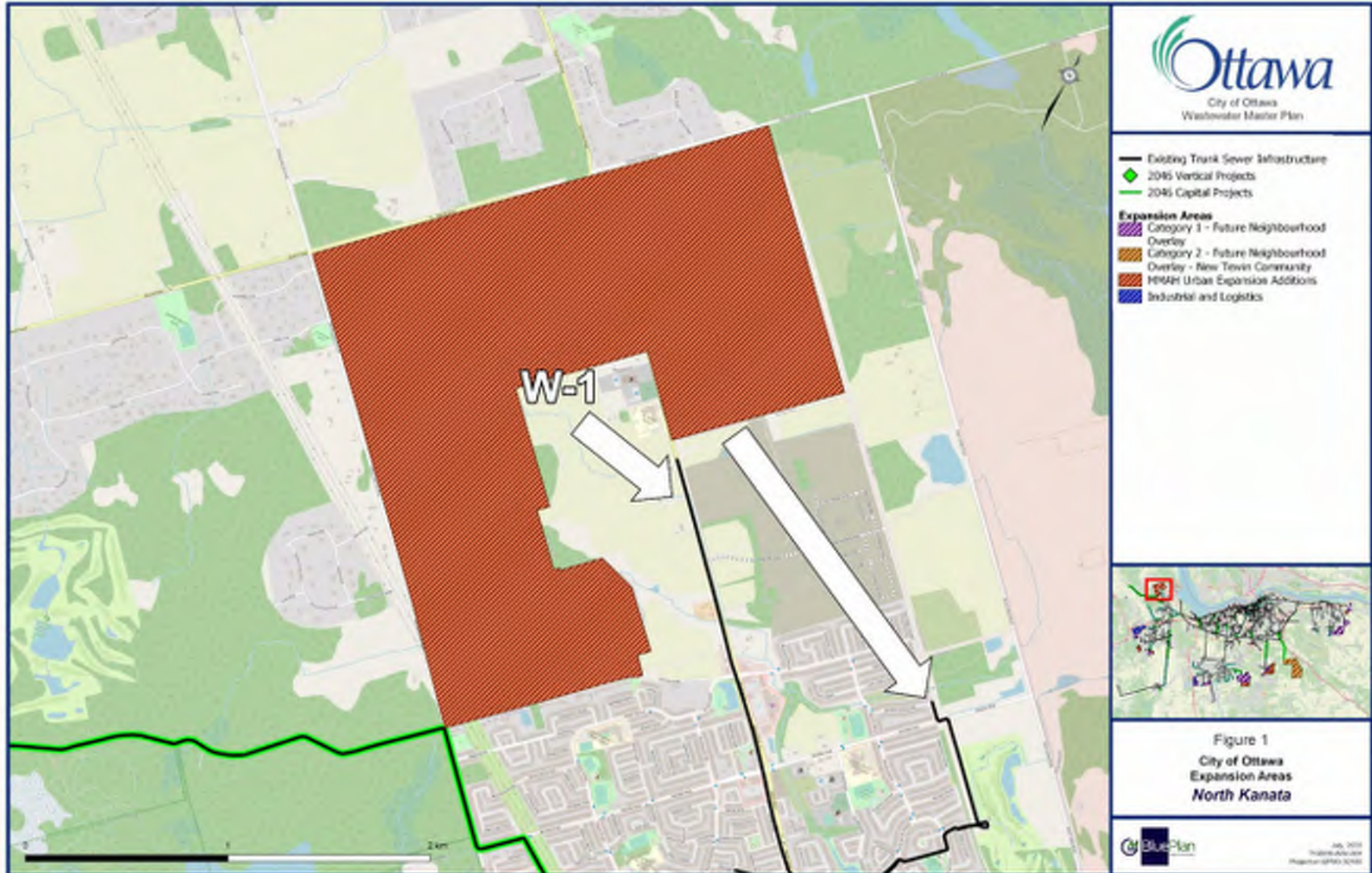


Figure 1 – North Kanata expansion areas

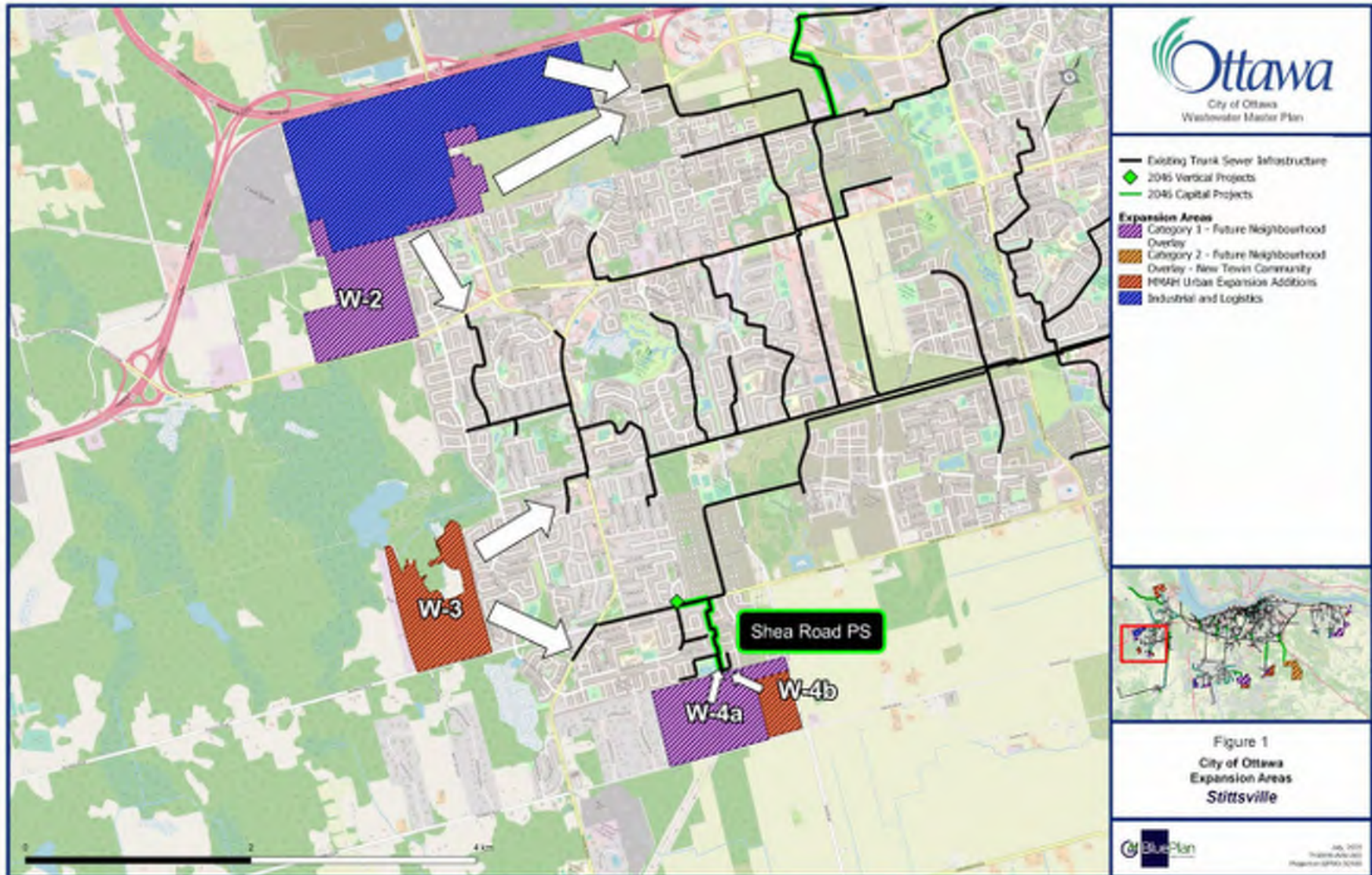


Figure 2 – Stittsville expansion areas