



Date:	October 13, 2020	File:	718006-005
To:	Tim Hayward – Town of Whitchurch-Stouffville		
From:	Chris Campbell – GM BluePlan Sandy Naime – GM BluePlan		
Project:	Lincolnville GO Station Land Use Study		
Subject:	Water and Wastewater Servicing Assessment		

TECHNICAL MEMO 1

1. Introduction

In support of the Lincolnville GO Station Land Use Study, GM BluePlan Engineering has been retained to assess the impact of the proposed land use concept plan and associated planning estimates for the Lincolnville study area on Stouffville's existing and future/planned water and wastewater infrastructure. This technical memo provides a preliminary review of servicing opportunities and constraints based on the planning data provided for the study area, existing and future conditions as set out in this memo and the use of the Town's existing water and wastewater hydraulic model tools.

1.1. Study Area

The study area for the Lincolnville GO Station Land Use Study, provided in Figure 1, is generally considered to include the lands within an 800-metre radius around the future GO Station. The existing GO Station will be relocated within the northern edge of the Community of Stouffville also known as Stouffville Phase 3 Lands. These lands within the Community of Stouffville will be part of a broader water and wastewater service area and should not be reviewed in isolation. Water and wastewater system capacity is impacted by existing use and planned future use within the immediate study area and the downstream service area for wastewater and the larger pressure zone service area for water. The Town is currently experiencing a high rate of new development which needs to be coordinated and reviewed in a holistic way to ensure an integrated approach to impact assessment and to ensure an appropriate servicing strategy.

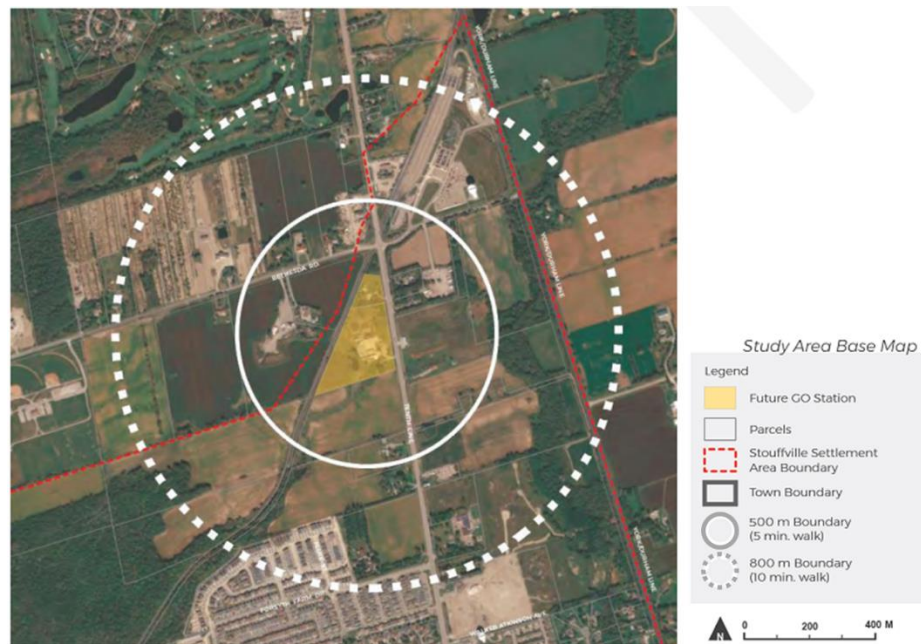


Figure 1 – Lincolnville GO Station Land Use Study Area

1.2. Land use and Planning Projections

This preliminary assessment of the water and wastewater servicing impact for the Lincolnville study area was based on the following planning information:

1. Land use concept plan population and employment assumptions (Table 1 and Figure 2). WSP, January 31, 2020.
2. Master Plan Current Trend Scenario – Population and Employment estimates by small geographic units (SGUs) as used in the development of the Town of Whitchurch-Stouffville 2018 Water and Wastewater Master Plan (Tables 2-4).
3. Development Applications that have been approved or in the process to be approved by the Town (Figure 3).

1.2.1. Lincolnville Land Use Concept Plan Population and Employment Assumptions

Table 1 – Land use concept plan population and employment assumptions

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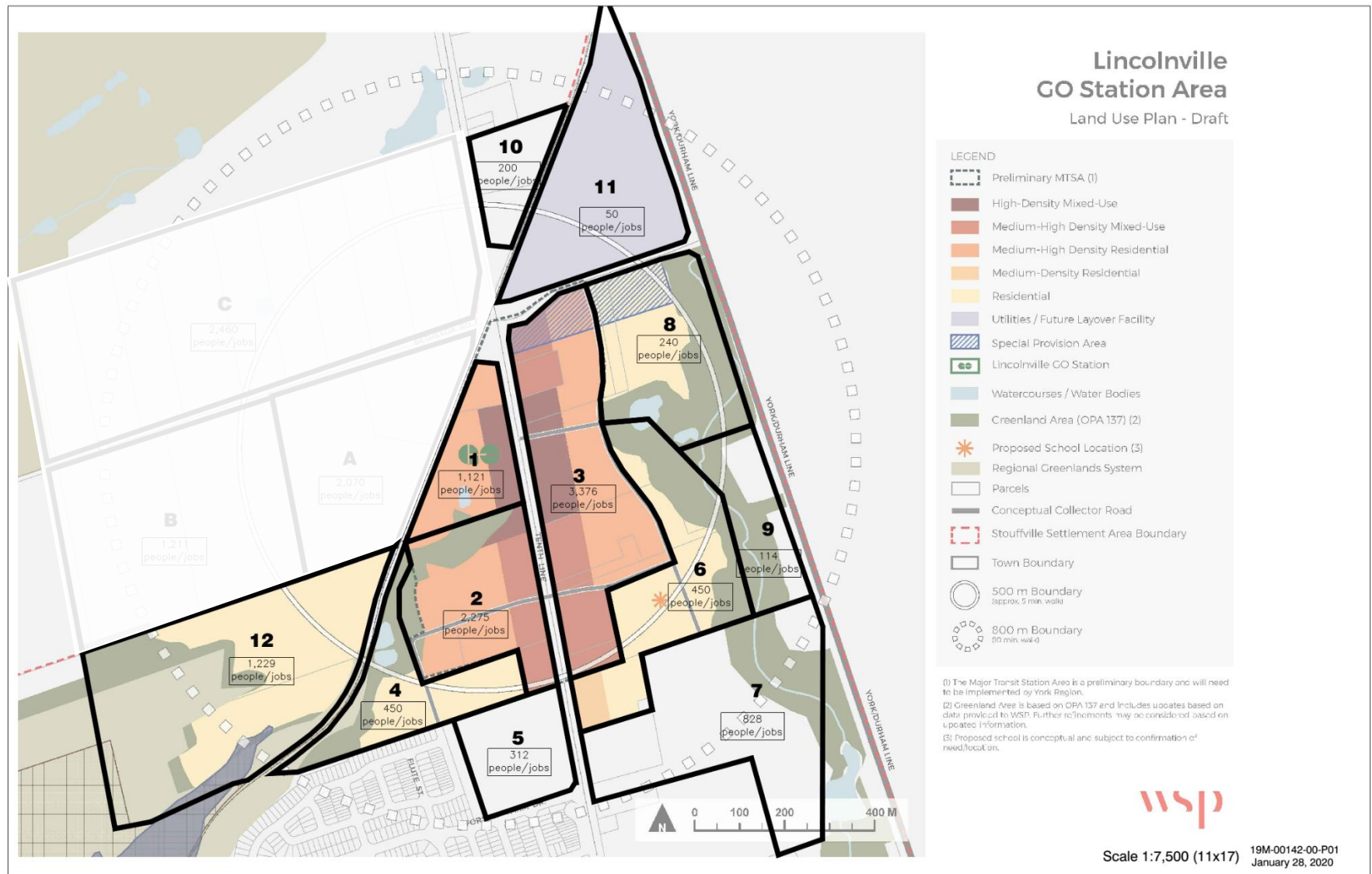


Figure 2 – Land Use Concept Plan

1.2.2. Master Plan Growth Scenarios

For the purpose of the 2018 Water and Wastewater Master Plan Study the Town of Whitchurch-Stouffville's Planning department prepared population and employment forecasts. The Town prepared total population and employment projections for two scenarios: Current Trend and Limited Growth (**Table 2**).

Table 2 – Population and Employment Growth Scenarios

Population		Employment	
Current Trend	Limited Growth	Current Trend	Limited Growth
Population forecast based on current development trends and available land area	Population forecast assuming development is limited by delaying parts of Phase 3 and reducing intensification below trend	Employment forecast based on current development trends and 2013 GMS employment land needs analysis	Employment forecast assuming development is limited by delaying parts of Phase 3, reducing intensification and accepting deficiency in serviced employment land

Table 3 – Master Plan Population Estimates

Community	Pop2016	Official Master Plan Scenario		Sensitivity Analysis	
		Limited Growth Scenario		Current Trend Scenario	
		Pop2031	Pop2041	Pop2031	Pop2041
Stouffville	31,312	49,490	51,932	58,174	66,285

Table 4 – Master Plan Employment Estimates

Community	Emp2016	Official Master Plan Scenario		Sensitivity Analysis	
		Limited Growth Scenario		Current Trend Scenario	
		Emp2031	Emp2041	Emp2031	Emp2041
Stouffville	7,753	12,965	13,490	14,020	15,423

1.2.3. Development Applications

Since the preparation of the 2018 Water and Wastewater Master Plan, the Town has received several development applications. These applications have been reviewed through the use of the Town's water and wastewater hydraulic models to assess impact to the existing and planned infrastructure. Through these exercises, the projected planning information used in the Master Plan has been reconciled against these development applications to ensure updated existing conditions models and adjusted future conditions assumptions.

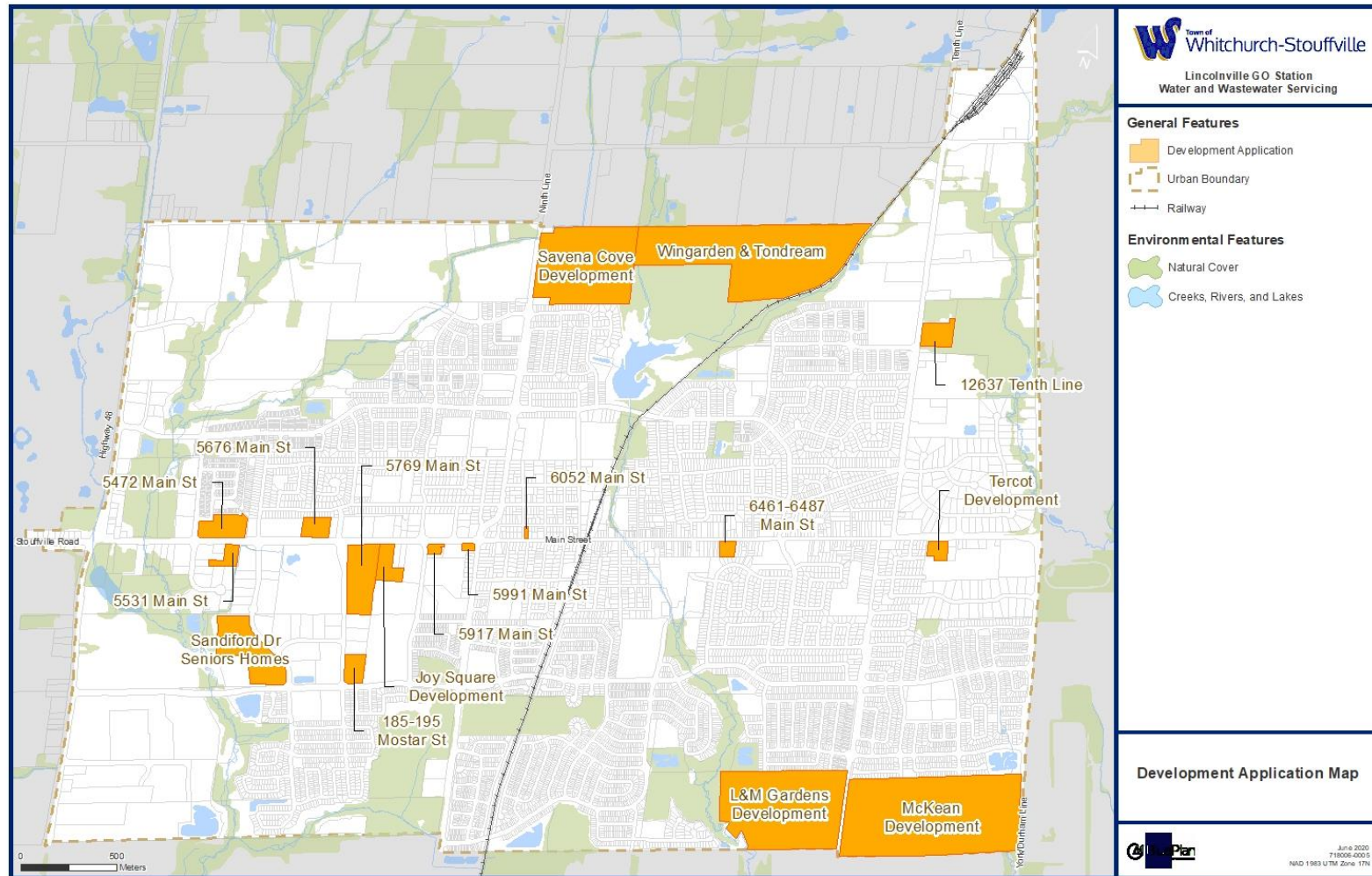


Figure 3 – Development Applications

2. Planning Estimates and Assumptions

For the purposes of the Lincolnville preliminary servicing analysis the following assumptions with respect to planning estimates were made:

- Planning Horizon = 2041
- Lincolnville planning estimates replaced the 2041 Current Trend estimates for small geographic units (SGUs) that lie completely within the Lincolnville 800m boundary (Area# 1, 2, 3, 6, 7)
- The highest estimate between the Lincolnville planning estimates and the 2041 Current Trend estimates was used for areas that lie partially within the Lincolnville 800m boundary (Area# 4, 5, 8, 9).
- 2041 Current Trend estimates were used for the remaining of the community of Stouffville

Table 5 and Figure 4 present a summary of the planning estimates and general location of projected growth by SGUs within the study area.

Table 5 – Lincolnville Planning Estimates Summary

Area #	SGU	Master Plan Scenario - 2041 Current Trend			Lincolnville Estimates	Servicing Analysis
		Population	Employment	Total		
1	146505	3,360	444	3,804	4,026	4,026
2	130403	280	45	325	1,121	1,121
3	130210	1,232	148	1,380	2,725	2,725
4	130209	500	61	561	312	561
5	130108	896	108	1,004	1,229	1,229
6	130402	0	196	196	200	200
7	146504	124	15	139	114	114
8	146503	1,133	168	1,301	828	1,301
9	130401	0	50	50	50	50
Total		7,525	1,235	8,760	10,605	11,327

* Areas outside the current community of Stouffville Urban Boundary

The planning estimates used in the preliminary analysis represent a total increase of approximate 2,500 people + jobs in the Lincolnville Area with respect to the Master Plan Current Trend Scenario.

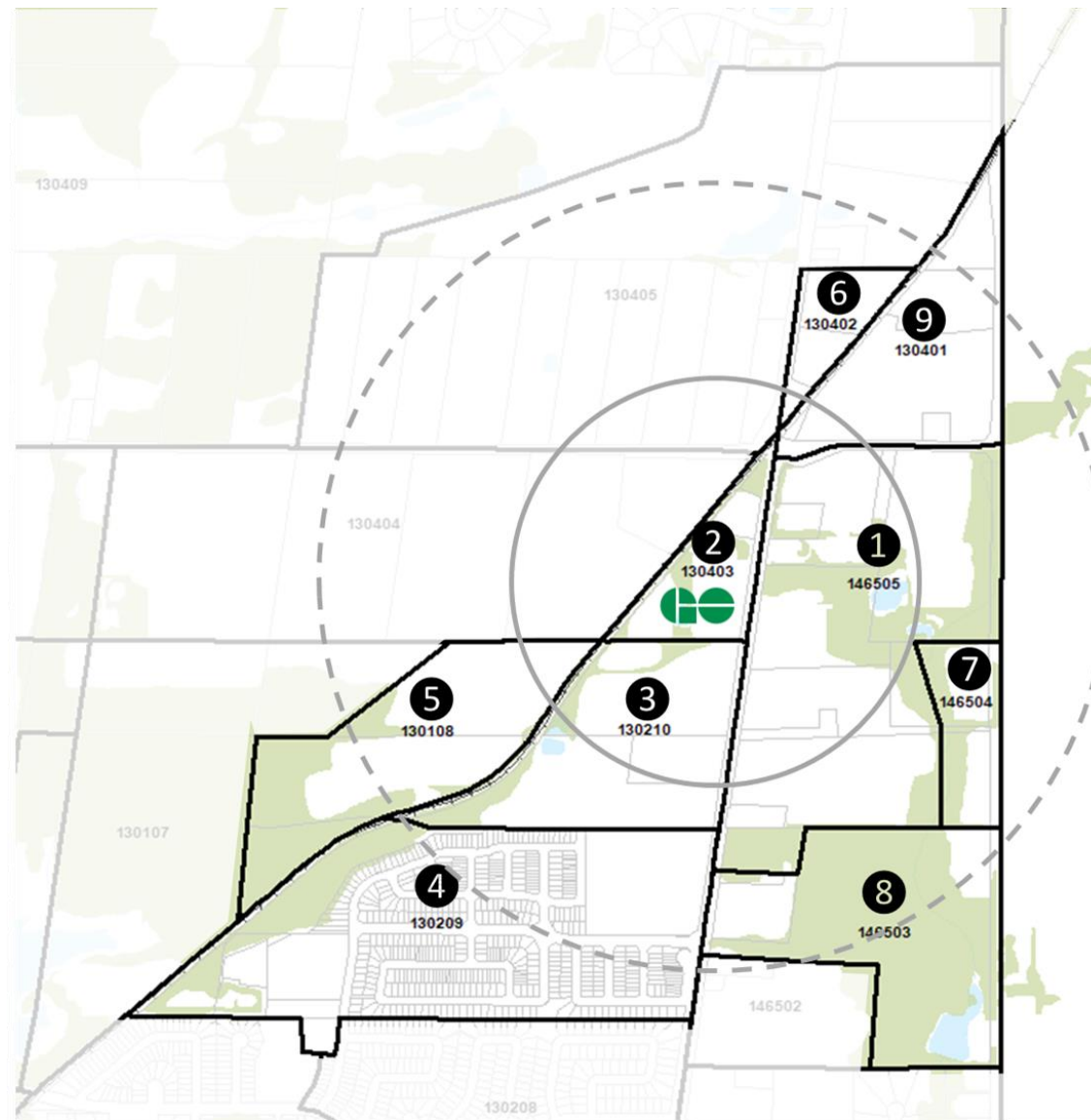


Figure 4 – Small Geographic Units (SGUs) in the Study Area

3. Water System Review

The following sections outline the current water servicing strategy for the study area as per the Town of Whitchurch-Stouffville 2018 Water and Wastewater Master Plan, the analysis tools, scenarios and assumptions used in the analysis, and high-level servicing opportunities and constraints based on preliminary model results.

3.1. Master Plan Water Servicing

The Water Master Plan servicing strategy for the study area consists mainly of building off the existing system configuration of sub-trunk looping. Applying this approach to the proposed Greenfield growth areas will allow for critical looping within each quadrant of the system, along the servicing boundaries. This strengthens the overall system and provides greater operational flexibility.

Key capital projects in the study area required to achieve the overall water strategy include the following:

- New watermains along Bethesda Road, at the northern limits of the servicing boundary
- New watermains along future roads and York-Durham Line to service the northeast growth area in Stouffville

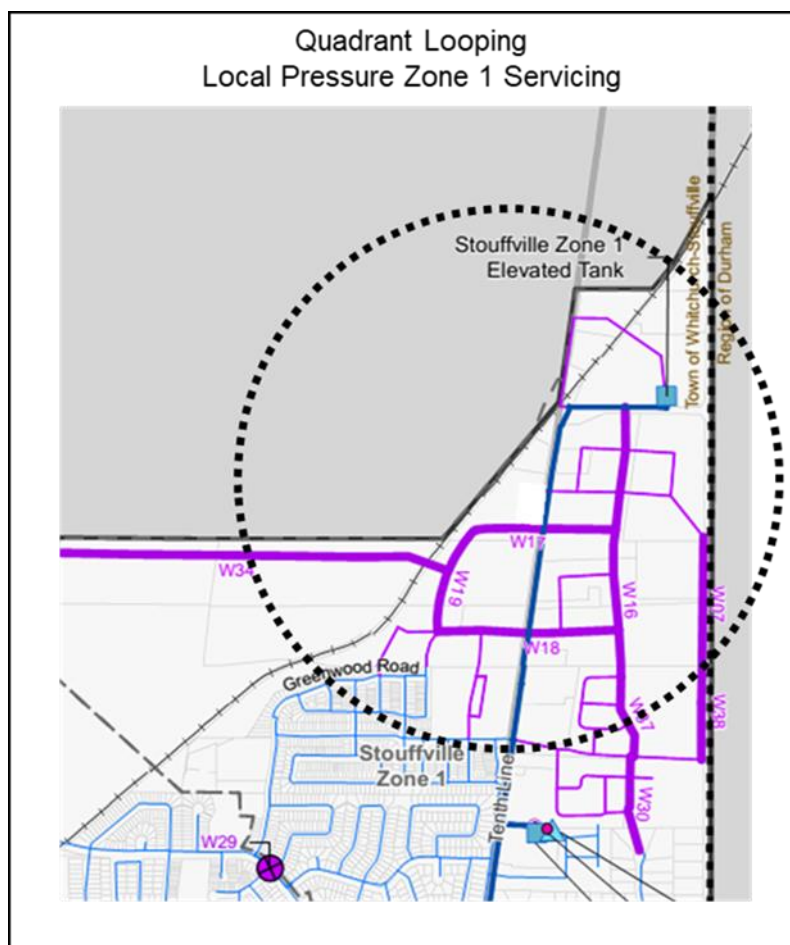


Figure 5 – Master Plan Water Servicing for the Study Area

Planned Master Plan water projects within the study area are summarized in Table 6.

Table 6 – Master Plan Water Projects

Master Plan ID	Project Name / Description
W07	New 200 mm diameter watermain along York Durham Line, between Bethesda Side Road and Main Street
W16	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W37 to Bethesda Side Road
W17	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W19 to W16
W18	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W19 to W16
W19	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W17 and W18
W30	New 200 mm diameter watermain along a future road from W16 to Cam Fella Boulevard
W34	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W19 to W20. One railway crossing and one creek crossing.
W37	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W30 to W16
W38	New 200 mm diameter watermain along York Durham Line, between Bethesda Side Road and Main Street

3.2. Water Analysis Tool and Scenarios

The system impact was assessed by utilizing the Town's existing WaterCAD model, which was developed in 2017 as part of the Town of Whitchurch-Stouffville Master Plan Study. The following water modelling scenario was used in the analysis:

Future System (2041 Current Trend / Lincolnville)

The future system scenario includes the 2041 Current Trend scenario (higher growth projections than those currently approved for the community of Stouffville), the Lincolnville planning estimates, and development applications that have been approved or in the process to be approved by the Town, including:

1. McKean Development (located east of Tenth Line and Busato Drive)
2. Joy Square Development (located at 5827 Main Street)
3. Tercot Development (located at 6853 and 6871 Main Street)
4. L&M Gardens Development (located at 11742 Tenth Line)
5. Savena Cove Development with School (located at 12785 Ninth Line)
6. 5917 Main Street Development
7. 5991 Main Street Development
8. 6052 Main Street Development
9. 5531 Main street Development with revised 520 units
10. 5827 Main Street Development
11. 5676 Main Street Development

For the water analysis, the following three (3) demand conditions were evaluated:

- Average Day Demand (ADD) Scenario - Steady State Simulation for future scenarios
- Peak Hour Demand (PHD) Scenario – Steady State Simulation
- Maximum Day Demand with Fire Flow (MDD+FF) Scenario

3.2.1. Water Model Loading

For the system analysis and modelling, the proposed planning estimates for the Lincolnville study area were added into the model as new water demands replacing previous estimates from the Current Trend scenario where applicable as per Table 5. The rest of the model remains loaded with the Current Trend scenario growth estimates and water demands as developed as part of the 2018 Water and Wastewater Master Plan.

3.3. Water Servicing Assessment

The following are high-level opportunities and constraints based on preliminary analysis of the proposed population and employment estimates for the Lincolnville study area.

- 1) The local system has the potential to provide sufficient capacity to accommodate the average day pressure and peak hour pressure for the proposed Lincolnville Area.
 - a) Marginal reduction of pressure within pressure zone 1 with new estimates in the study area.
 - b) No significant changes in pressure in zones 2 and 3.
- 2) Available fire flows in the study area are within acceptable ranges (Based on the Town of Whitchurch-Stouffville Standard Guidelines).
- 3) Under normal operations where the water supply is secured, the increase in the population and employment projections in the study area does not have a significant negative impact to the local and overall water distribution system.

Assumptions

The objective of this analysis was to assess the performance of the Community of Stouffville distribution system and its ability to convey water from the Region of York's infrastructure to the customers. The preliminary water servicing assessment assumes that the Regional Water Infrastructure can provide sufficient water supply and storage.

In addition, the preliminary analysis did not consider the potential future growth outside of the current community of Stouffville urban boundary or increased densities in other growth priority areas such as Highway 48 Corridor, Gateway and Western Approach Mixed Use Area, and Downtown GO MTSA.

4. Wastewater System Review

The following sections outline the current wastewater servicing strategy for the study area as per the Town of Whitchurch-Stouffville 2018 Water and Wastewater Master Plan, the analysis tools, scenarios and assumptions used in the analysis, and high-level servicing opportunities and constraints based on preliminary model results.

4.1. Master Plan Wastewater Servicing

The Wastewater Master Plan servicing strategy for the study area consists of:

- Flows from new growth areas in the northeast will be conveyed south to the YDSS trunk sewer through subtrunk 10 (north-west), subtrunk 15, subtrunk 1 (east), and subtrunk 3 (central)

Key capital projects required to achieve the strategy include the following:

- Subtrunk 1 extension up to Tenth Line to service northeast growth areas
- New subtrunk 15 and connection to subtrunk 1
- Subtrunk 10 extension east of Ninth Line to service the north growth areas
- Subtrunk 3 extension with rail crossing

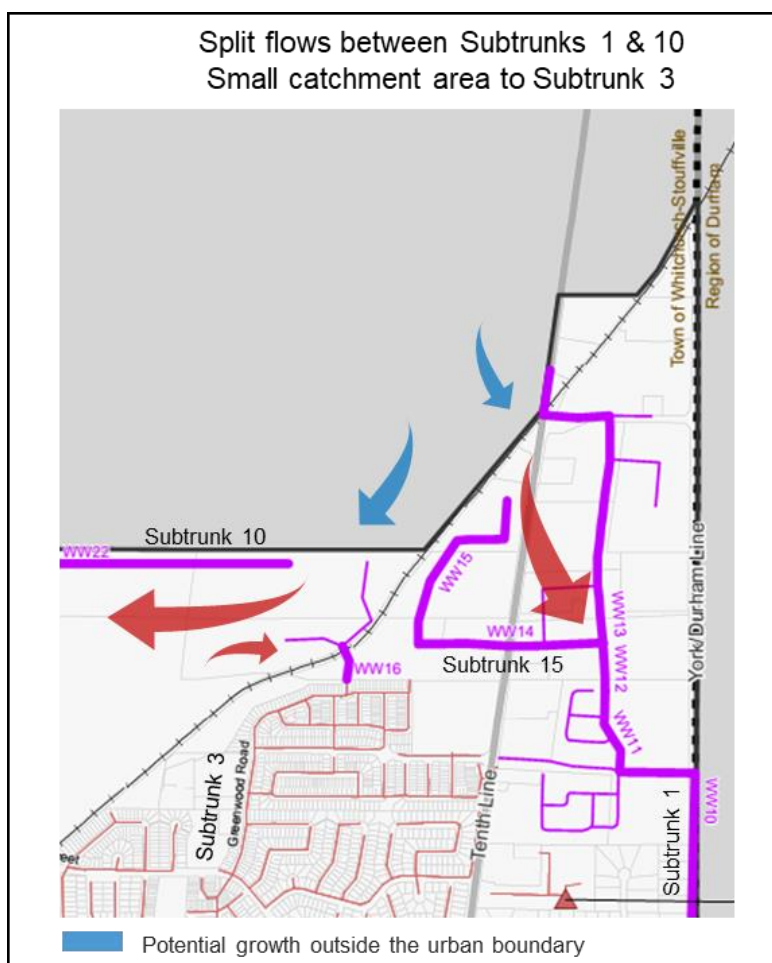


Figure 6 – Master Plan Wastewater Servicing for the Study Area

Planned Master Plan wastewater projects within the study area summarized in Table 7.

Table 7 – Master Plan Wastewater Projects

Master Plan ID	Project Name / Description
WW10	Subtrunk 1 450mm sewer on York/Durham Line from the north limit of CamFella development to Forsyth Farm Drive
WW11	Subtrunk 1 450mm sewer on Forsyth Farm Drive from York/Durham Line to Keeler Avenue
WW12	Subtrunk 1 450mm sewer on Keeler Avenue from Forsyth Farm Drive to the connection to subtrunk 15 on future road to the north
WW13	Subtrunk 1 375mm sewer on future road east of Tenth Line from the connection to subtrunk 15 to Bethesda Road
WW14	Subtrunk 1 300mm on future road from the connection to subtrunk 1 to the west crossing Tenth Line
WW15	Subtrunk 15 300mm on future road west of Tenth Line and south of the Go Transit Railway
WW16	Subtrunk 3 300mm sewer from the existing subtrunk 3 sewer north of Greenwood Road to the north side of the Go Transit Railway
WW22	Subtrunk 10 375mm sewer on future road south of Bethesda Road east of Ninth Line

Note: There are more planned wastewater projects that are not located within the study area, but that are part of the overall strategy to service the Lincolnville area (e.g. Extension of Subtrunk 10).

4.2. Wastewater Analysis Tool and Scenarios

The system impact was assessed by utilizing the Town's existing InfoWorks ICM model, which was developed in 2017 as part of the Town of Whitchurch-Stouffville Master Plan Study. The following wastewater modelling scenario was used in the analysis:

Future System (2041 Current Trend)

The future system scenario includes the 2041 Current Trend scenario (higher growth projections than those currently approved for the community of Stouffville), the Lincolnville planning estimates, and development applications that have been approved or in the process to be approved by the Town, including:

1. McKean Development (located east of Tenth Line and Busato Drive)
2. Joy Square Development (located at 5827 Main Street)
3. Tercot Development (located at 6853 and 6871 Main Street)
4. L&M Gardens Development (located at 11742 Tenth Line)
5. 5472 Main Street Development
6. 195-185 Mortar Street Developments
7. 5769 Main Street Development
8. Sandiford Drive Seniors Home Developments
9. Savena Cove Development with School (located at 12785 Ninth Line)
10. 5917 Main Street Development
11. 5991 Main Street Development
12. 6052 Main Street Development
13. 5531 Main street Development with revised 520 units
14. 5676 Main Street Development
15. Tondream and Wingarden Developments

For the wastewater analysis, the following two (2) flow conditions were evaluated:

- Dry Weather Flow
- Wet Weather Flow (5yr Chicago Storm)

4.2.1. Wastewater Model Loading

For the system analysis and modelling, the proposed planning estimates for the Lincolnville study area were added into the model as new growth subcatchments replacing previous estimates from the Current Trend scenario where applicable as per Table 5. The rest of the model remains loaded with the Current Trend scenario growth estimates as developed as part of the 2018 Water and Wastewater Master Plan.

4.3. Wastewater Servicing Assessment

The following are high-level opportunities and constraints based on preliminary analysis of the proposed population and employment estimates for the Lincolnville study area.

- 1) Based on the existing Master Plan Wastewater Servicing Strategy there is a potential need to revisit the size and/or slope of sections of subtrunk 15 to ensure that it can support proposed higher density in the immediate sewer service area. It is recommended that a further review is undertaken to incorporate the broader wastewater service area, a refined development plan, confirmation of assumptions and updated planning projections to determine full understanding of impact, servicing options and solution.
- 2) Current analysis has assumed no serviced growth outside of the existing urban area. The preparation of the Master Plan Strategy did account for some serviced growth outside of the urban area to aid in strategic oversizing of key sub-trunks. This oversizing was considered post-period and the costs were not included in the 2031 DC By-Law update. It should be noted that some of the capacity gained through the post-period sizing would now be required to service the increased projections in Lincolnville. Further analysis would be required to determine impact to the Master Plan strategy should additional growth capacity outside of the urban boundary be required in addition to Lincolnville.

Additional considerations

The Town of Whitchurch-Stouffville 2018 Water and Wastewater Master Plan was developed taking in consideration the following opportunities:

- Opportunity to upsize strategic infrastructure to account for potential post-period growth in the Community of Stouffville for both existing and potential future urban boundary scenarios.
- Opportunity to balance future post-period growth flows in the north areas, by splitting flows between the future extensions of subtrunks 1 & 10.
- Potential to reach capacity in the YDSS West Trunk Sewer if potential growth above the approved Master Plan planning estimates occur.

Potential growth outside of the current community of Stouffville urban boundary, should be taken into consideration when assessing the performance and capacity of the future infrastructure in the community. It is recognized that growth in the Lincolnville area cannot be analyzed in isolation as growth in other priority areas within the community of Stouffville and potential future growth outside of the current urban boundary may have an impact on the existing and planned water and wastewater infrastructure.

Assumptions

The preliminary wastewater servicing assessment assumes that there is sufficient capacity in the YDSS system to accommodate the proposed increased in flows in the community of Stouffville. Confirmation on the YDSS capacity from the Regions of York and Durham will be required.

In addition, the preliminary analysis did not take in consideration potential future growth outside of the current community of Stouffville urban boundary or increased densities in other growth priority areas such as Highway 48 Corridor, Gateway and Western Approach Mixed Use Area, and Downtown GO MTSA.

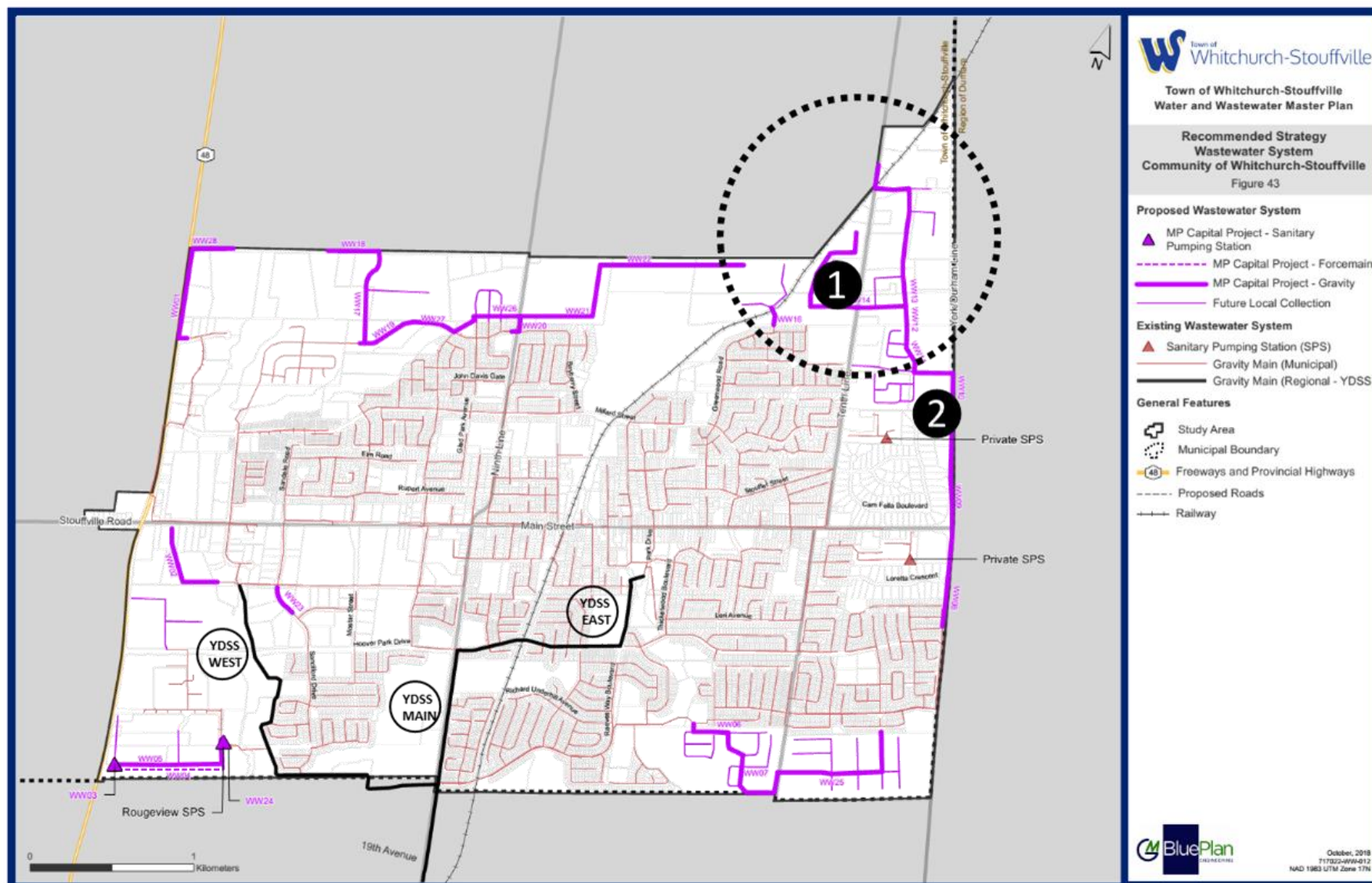


Figure 7 – Wastewater Servicing Opportunities and Constraints

5. Stouffville Water and Wastewater Servicing Strategies Review

Since the preparation of the Water and Wastewater Master Plan Strategy the Town has developed future planning projections for residential and employment buildout growth potential. The Town retained GM BluePlan Engineering to analyze the impact of potential buildout in growth priority areas in the Community of Stouffville including, but not limited to:

- Highway 48 Corridor,
- Gateway and Western Approach Mixed Use Area,
- Downtown GO MTSA,
- Lincolnville GO MTSA,
- Flato Upper Markham Village / Areas West of Hwy 48 (from 19th Avenue to south of Stouffville Rd)

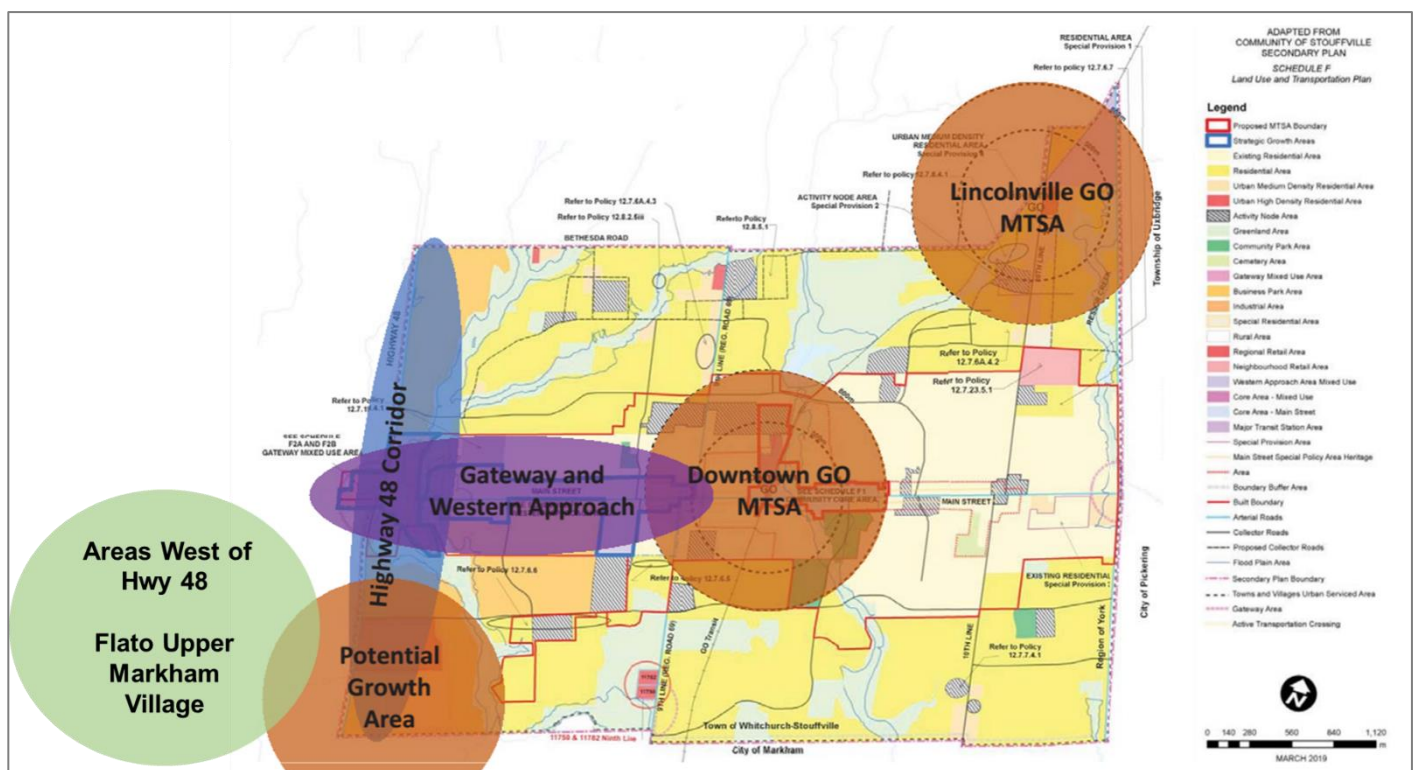


Figure 8 – Community of Stouffville Growth Priority Areas

A holistic approach for the whole community of Stouffville was undertaken to analyze and confirm the water and wastewater servicing strategies for the community. The purpose of this exercise was to analyze the impact of the buildout growth potential on the existing and planned water and wastewater infrastructure and determine what improvements and changes are required to the existing strategies to accommodate this potential growth. The analysis incorporated the findings of other completed or ongoing studies including the Lincolnville GO Station Study.

5.1. Water Servicing Strategy Review

The following findings for the Lincolnville GO Study Area are based on the analysis completed to date for the planning estimates associated with potential buildout growth for the Community of Stouffville and surrounding areas.

- 1) The local water distribution system has the potential to provide sufficient capacity to accommodate the average day pressure and peak hour pressure for the proposed Lincolnville GO Study Area. However, upgrades to pressure zone 1 booster pumping station may be needed which will require further assessment and coordination with York Region.
- 2) Available fire flows in the study area are within acceptable ranges (Based on the Town of Whitchurch-Stouffville Standard Guidelines).

Table 8 presents a list of water projects in the study area and surrounding areas with comments and recommendations based on the water servicing strategy review completed to date.

Table 8 – Water Projects in the Study Area and Surrounding Areas

Master Plan ID	Project Name / Description	Comments/ Recommendations
W07	New 200 mm diameter watermain along York Durham Line, between Bethesda Side Road and Main Street	No changes to master plan recommendations
W16	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W37 to Bethesda Side Road	
W17	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W19 to W16	
W18	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W19 to W16	
W19	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W17 and W18	
W21	New Zone 1/2 PRV along W20. Exact location to be determined.	Due to increased Zone 2 demands, Zone 1/2 PRV settings will need to be adjusted to avoid potential low pressures areas in zone 2
W30	New 200 mm diameter watermain along a future road from W16 to Cam Fella Boulevard	No changes to master plan recommendations
W34	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W19 to W20. One railway crossing and one creek crossing.	
W37	New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W30 to W16	
W38	New 200 mm diameter watermain along York Durham Line, between Bethesda Side Road and Main Street	
	Zone 1 booster pumping station upgrades	Require further assessment and coordination with York Region

The chamber for Project W21 has been constructed as part of the Savena Cove development servicing work. The PRV is to be installed when required for future development east of Savena Cove. The settings for the proposed PRV can be revised as recommended and incorporated into the design.

5.2. Wastewater Servicing Strategy Review

The following findings for the Lincolnville GO Study Area are based on the analysis completed to date for the planning estimates associated with potential buildout growth for the Community of Stouffville and surrounding areas.

- 1) A revision to the servicing strategy of balancing flows between subtrunks 1, 3, 10 and 15 provides the opportunity for reducing the amount of flows and potential capacity constraints in Subtrunk 10, while maximizing the use of capacity of Subtrunks 1, 3 and 15 to service in-period and post-period growth.
- 2) Potential capacity constraints in the YDSS West trunk sewer for growth projections above and beyond Master Plan scenario. Complete servicing solutions for the potential capacity constraints in the YDSS West trunk sewer are being explored in the ongoing Stouffville Servicing Strategy Review study.
 - a) The Lincolnville GO study area is not the only area that will be serviced by the YDSS West trunk sewer. However, any flows from the study area that will be serviced by subtrunk 10 contribute to the total flows in YDSS West trunk sewer and will be taken in consideration when looking into the servicing solutions for the potential capacity constraints in the YDSS West trunk sewer.

Table 9 presents a list of wastewater projects in the study area and surrounding areas with comments and recommendations based on the wastewater servicing strategy review completed to date.

Table 9 – Wastewater Projects in the Study Area and Surrounding Areas

Master Plan ID	Project Name / Description	Comments/ Recommendations
WW10	Subtrunk 1 450mm sewer on York/Durham Line from the north limit of CamFella development to Forsyth Farm Drive	No changes to master plan recommendations based on York/Durham Line (R.R 30) Sub-trunk #1 Sanitary Sewer Plan and Profile. Feb 2017
WW11	Subtrunk 1 450mm sewer on Forsyth Farm Drive from York/Durham Line to Keeler Avenue	450mm with a minimum slope of 0.45% or greater; or any other diameter/slope combination that provide equal or greater capacity
WW12	Subtrunk 1 450mm sewer on Keeler Avenue from Forsyth Farm Drive to the connection to subtrunk 15 on future road to the north	450mm with a minimum slope of 0.45% or greater; or any other diameter/slope combination that provide equal or greater capacity
WW13	Subtrunk 1 375mm sewer on future road east of Tenth Line from the connection to subtrunk 15 to Bethesda Road	375mm with a minimum slope of 0.40% or greater; or any other diameter/slope combination that provide equal or greater capacity
WW14	Subtrunk 1 300mm on future road from the connection to subtrunk 1 to the west crossing Tenth Line	300mm with a minimum slope of 0.40% or greater; or any other diameter/slope combination that provide equal or greater capacity
WW15	Subtrunk 15 300mm on future road west of Tenth Line and south of the Go Transit Railway	300mm with a minimum slope of 0.40% or greater; or any other diameter/slope combination that provide equal or greater capacity
WW16	Subtrunk 3 300mm sewer from the existing subtrunk 3 sewer north of Greenwood Road to the north side of the Go Transit Railway	No changes to master plan recommendations

Master Plan ID	Project Name / Description	Comments/ Recommendations
Various	Subtrunk 10 Extension	No changes to master plan recommendations
	YDSS West Trunk Sewer	Servicing solution currently being investigated outside of the scope of this report. It will require coordination with York Region.

Note: Post period-growth was considered in the development of the size and slope recommendations.

Assumptions

It is recognized that some of the mater plan wastewater projects may be under various stages of preliminary and detailed design as part of development applications for the area. Our understanding is that wastewater projects noted in Table 9 have not yet been constructed, and that there remains opportunity to revise the recommended design as noted. If any of the above-noted projects have been constructed, analysis and recommendations will be required to be revised to accommodate the as-constructed works.

6. Summary

A preliminary water and wastewater analysis were undertaken for the proposed land use concept plan and associated planning estimates for the Lincolnville study area. The following opportunities and constraints were identified:

Water

- The local system has the potential to provide sufficient capacity to accommodate water demands, pressure and available fire flows for the proposed planning estimates in the Lincolnville Area.
- The addition of the proposed population and employment projections in the study area does not have a significant negative impact to the local and overall water distribution system.
- The preliminary water servicing assessment assumes that the Regional Water Infrastructure can provide sufficient water supply and storage.

Wastewater

- Potential need to revisit the size and/or slope of sections of the planned subtrunk 15 to ensure that it can support proposed higher density in the immediate sewer service area.
- Utilization of capacity in subtrunk 1 by proposed growth in the Lincolnville study area which was initially allocated to post-period growth in the Master Plan and Development Charges by-law.
- The preliminary analysis assumes there is sufficient capacity in the YDSS system to accommodate the proposed increased in flows in the community of Stouffville. Confirmation from the Regions of York and Durham will be required.

Stouffville Water and Wastewater Servicing Strategy Review

It was recognized that growth in the Lincolnville area cannot be analyzed in isolation as growth in other priority areas within the community of Stouffville and potential growth outside of the current urban boundary may have an impact on the existing and planned water and wastewater infrastructure. The Town retained GM BluePlan Engineering to analyze the impact of potential buildout in growth priority areas in the Community of Stouffville including: Highway 48 Corridor, Gateway and Western Approach Mixed Use Area, Downtown GO MTSA, Lincolnville GO MTSA, Flato Upper Markham Village / Areas West of Hwy 48 (from 19th Avenue to south of Stouffville Rd).

The following findings for the Lincolnville GO Study Area are based on the analysis completed to date for the Stouffville Water and Wastewater Servicing Strategy Review:

Water

- The local water distribution system has the potential to provide sufficient capacity to accommodate the demands for the proposed Lincolnville GO Study Area. However, upgrades to pressure zone 1 booster pumping station may be needed which will require further assessment and coordination with York Region.
- Available fire flows in the study area are within acceptable ranges.

Wastewater

- A revision to the servicing strategy of balancing flows between subtrunks 1, 3, 10 and 15 provides the opportunity for reducing the amount of flows and potential capacity constraints in Subtrunk 10, while maximizing the use of capacity of Subtrunks 1, 3 and 15 to service in-period and post-period growth.
- Potential capacity constraints in the YDSS West trunk sewer for growth projections above and beyond Master Plan scenario. Complete servicing solutions for the potential capacity constraints in the YDSS West trunk sewer are being explored in the ongoing Stouffville Water and Wastewater Servicing Strategy Review study.

7. Next Steps and Further Considerations

The purpose of the Lincolnville GO Station study area preliminary servicing analysis was to analyze the impact of the proposed planning projections for the Lincolnville GO Station study area on the community of Stouffville's water and wastewater systems. Based on this analysis and the findings from the ongoing Stouffville Water and Wastewater Servicing Strategy Review, it is recommended that:

- Any individual projects within the study area are assessed in the design stage and/or prior to implementation to ensure that new projects are in line with the overall servicing strategy from the Master Plan or further servicing studies, and that appropriate capacity is provided for in-period and post-period growth.
- Coordination and integration with York Region is critical to ensure appropriate water supply and storage from Regional Infrastructure, as well as conveyance and treatment capacity in the YDSS system for the community of Stouffville.
- The Official Plan servicing policy be updated to provide guidance for municipal infrastructure (water, wastewater and stormwater) sizing and phasing.

8. Servicing Policy Update Recommendations

The availability of public infrastructure and access to it is essential for the viability and sustainability of existing and growing communities. Integration between infrastructure planning, land use planning and infrastructure investment is required to ensure efficient, safe and economically achievable solutions for the safe and effective delivery of potable water and the appropriate conveyance of wastewater and stormwater.

All new development or redevelopment within the urban area shall be serviced by the municipal sewage collection and treatment system and water distribution system subject to available capacity.

Applications for development or redevelopment within the urban area shall be reviewed in the context of its possible impact on the community-wide water and wastewater servicing system and not in isolation. The Town may require a servicing study that addresses the impact of development or redevelopment on areas that extend beyond the development application site.

Applications for development or redevelopment may be delayed or the timing of development phased based on the availability of water and wastewater capacity and until the design of local water and wastewater infrastructure has been confirmed through the submission and review of a servicing study, which shall address among other matters the:

- Town's Water and Wastewater Master Plan Servicing Strategy
- Development Charges By-Law
- Secondary Plan(s)
- Town's Engineering Servicing Capacity Review



9. Closing

We trust the above to be in order for your approval. Should you have any questions or wish to discuss further, please do not hesitate in contacting the undersigned.

Yours Truly,

GM BluePlan Engineering Ltd.

Per:

A handwritten signature in black ink that reads 'Sandy Naime'.

Sandy Naime, M.Eng, P.Eng.
Infrastructure Planning

A handwritten signature in black ink that reads 'Chris Campbell'.

Chris Campbell, MTP, MCIP, RPP, MRTPI
Infrastructure Planning