



Region of Waterloo

**East Side Lands:
Woolwich Sanitary Servicing
Class Environmental Assessment**

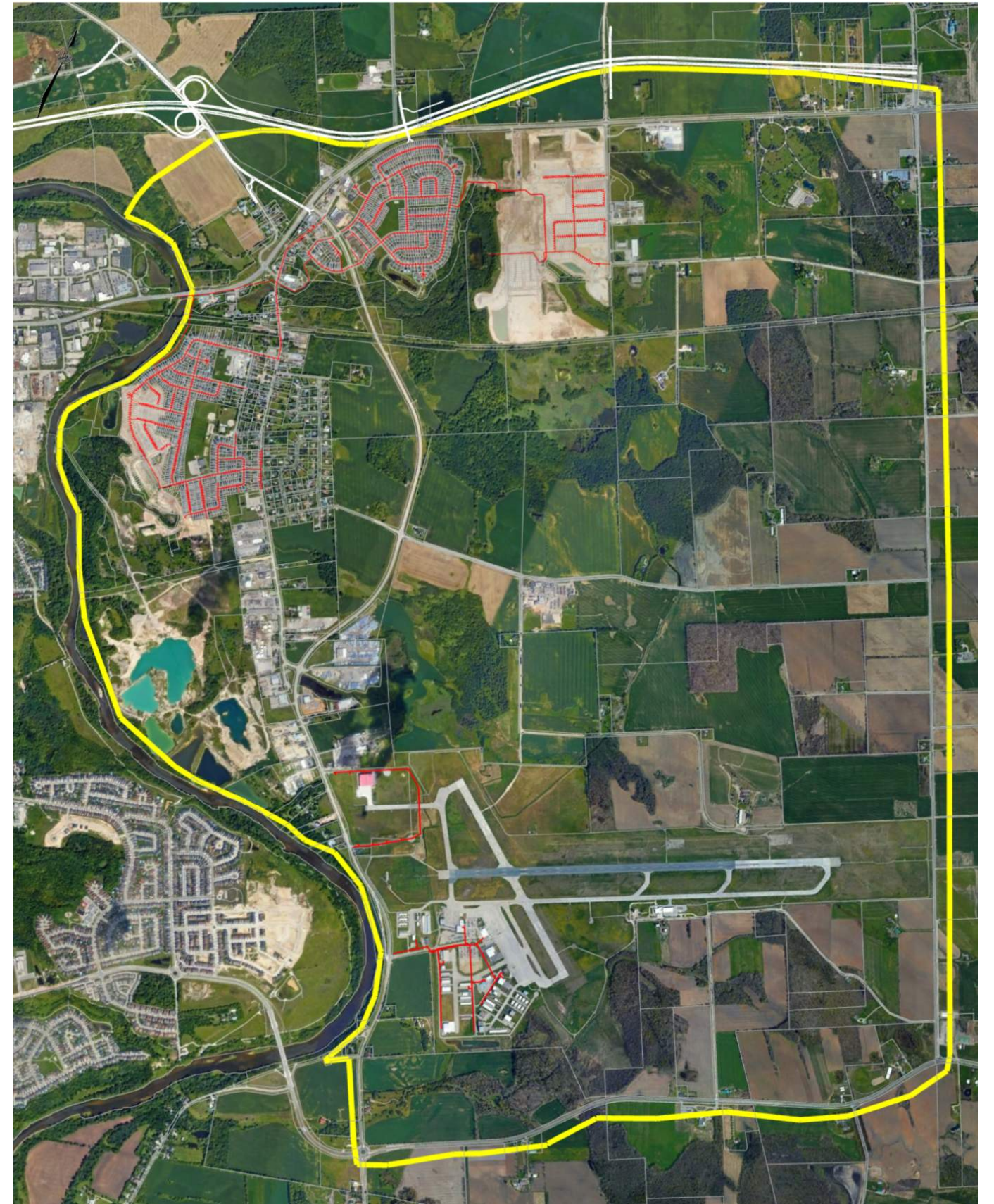
Welcome

Public Consultation #2

June 26, 2024



GLOBAL PERSPECTIVE.
LOCAL FOCUS.



Overview

- Recap of Public Consultation #1
 - Project History & Study Area
 - Existing Infrastructure & Downstream Outlet
 - Sanitary Drainage Areas & Flow Rates
 - Future Sewer Network (Ultimate Buildout)
 - Preliminary Pumping Station Sizing & Layout
- Alternative Solutions
- Evaluation of Alternatives

Recap of Public Consultation #1

- Overview of the Class EA Process
- Project History & Study Area
- Project Scope & Schedule
- Existing Infrastructure & Downstream Outlet
- Sanitary Drainage Areas & Flow Rates
- Future Sewer Network (Ultimate Buildout)
- Preliminary Pumping Station Sizing & Layout
- Trunk Sewer Alternatives
- Proposed Evaluation Criteria

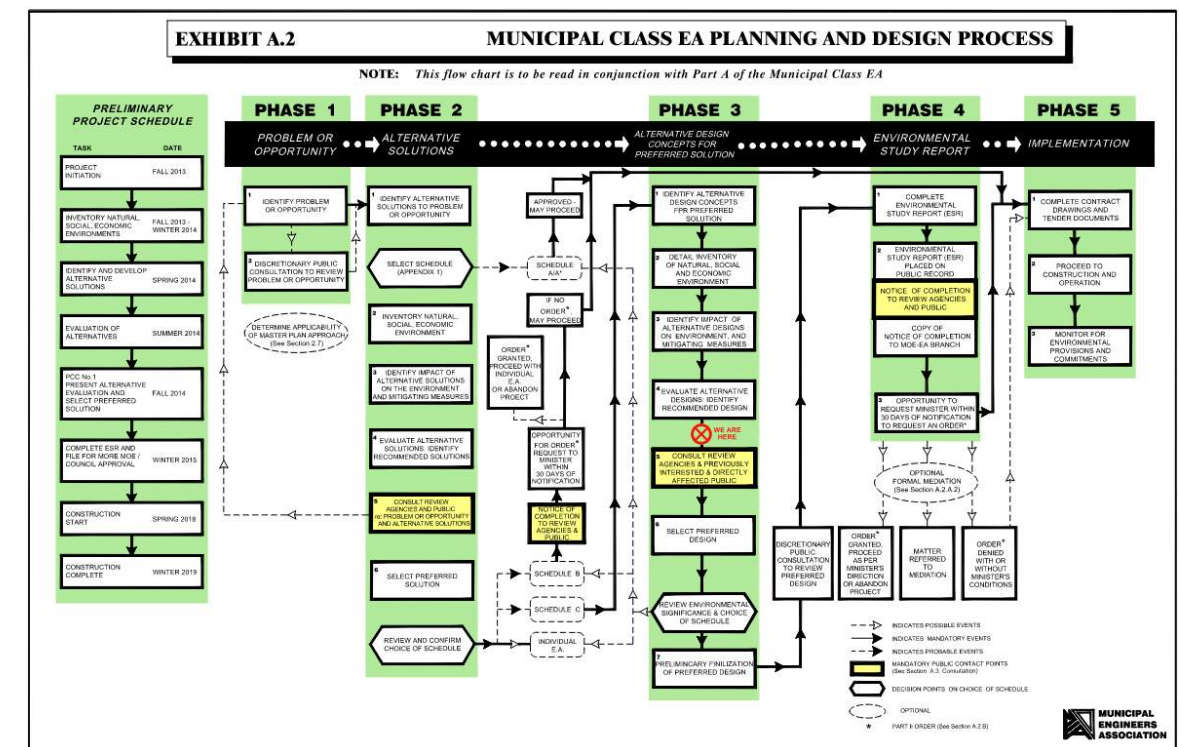


Recap of PCC#1: What is the Class EA Process

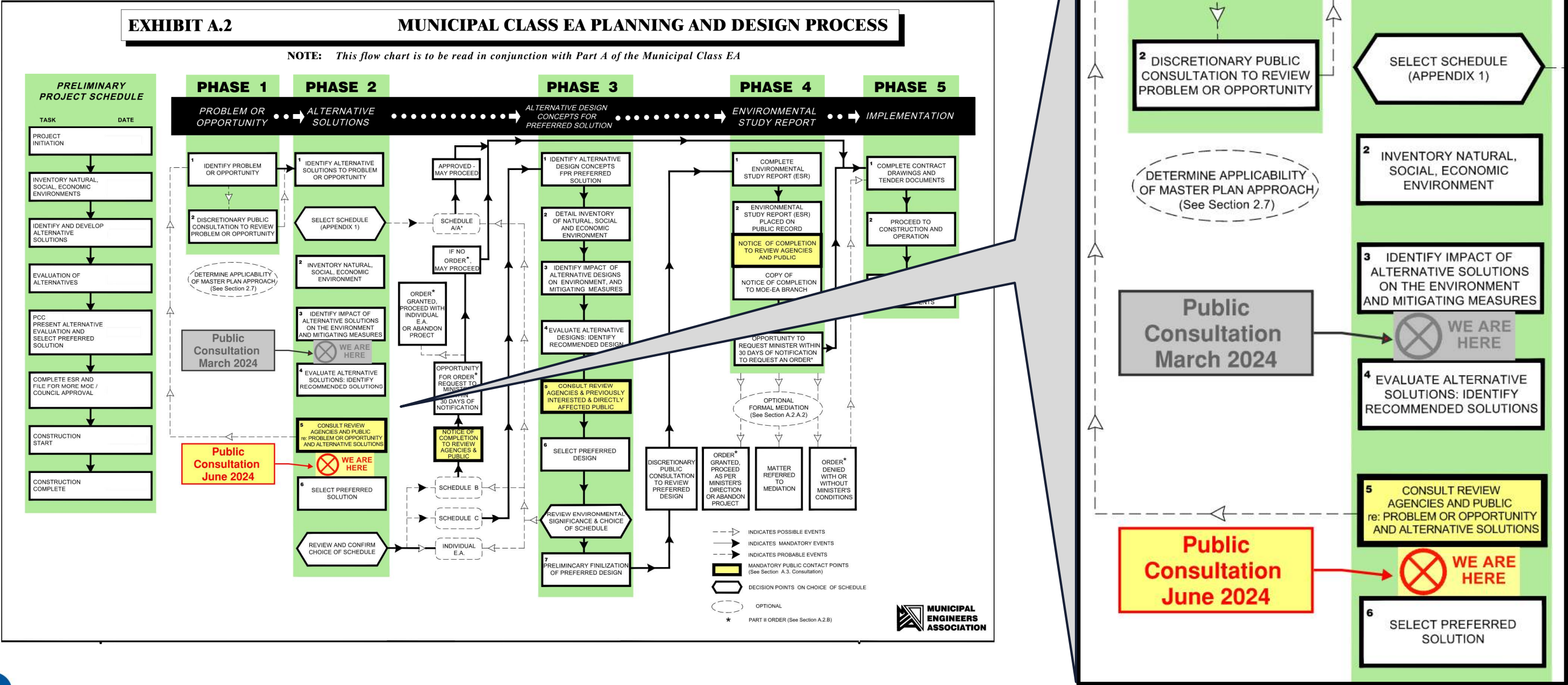
The Class EA process is a formally legislated process used for the planning of municipal infrastructure projects (roads, water and wastewater, and transit) to ensure that project planning and predesign proceeds in accordance with the Environmental Assessment Act.

Typical EA studies include public and review agency consultation, the development and evaluation of alternatives, an assessment of the impacts of the preferred solution, and identification of measures to mitigate any adverse impacts.

The flowchart illustrates the Class EA Process.

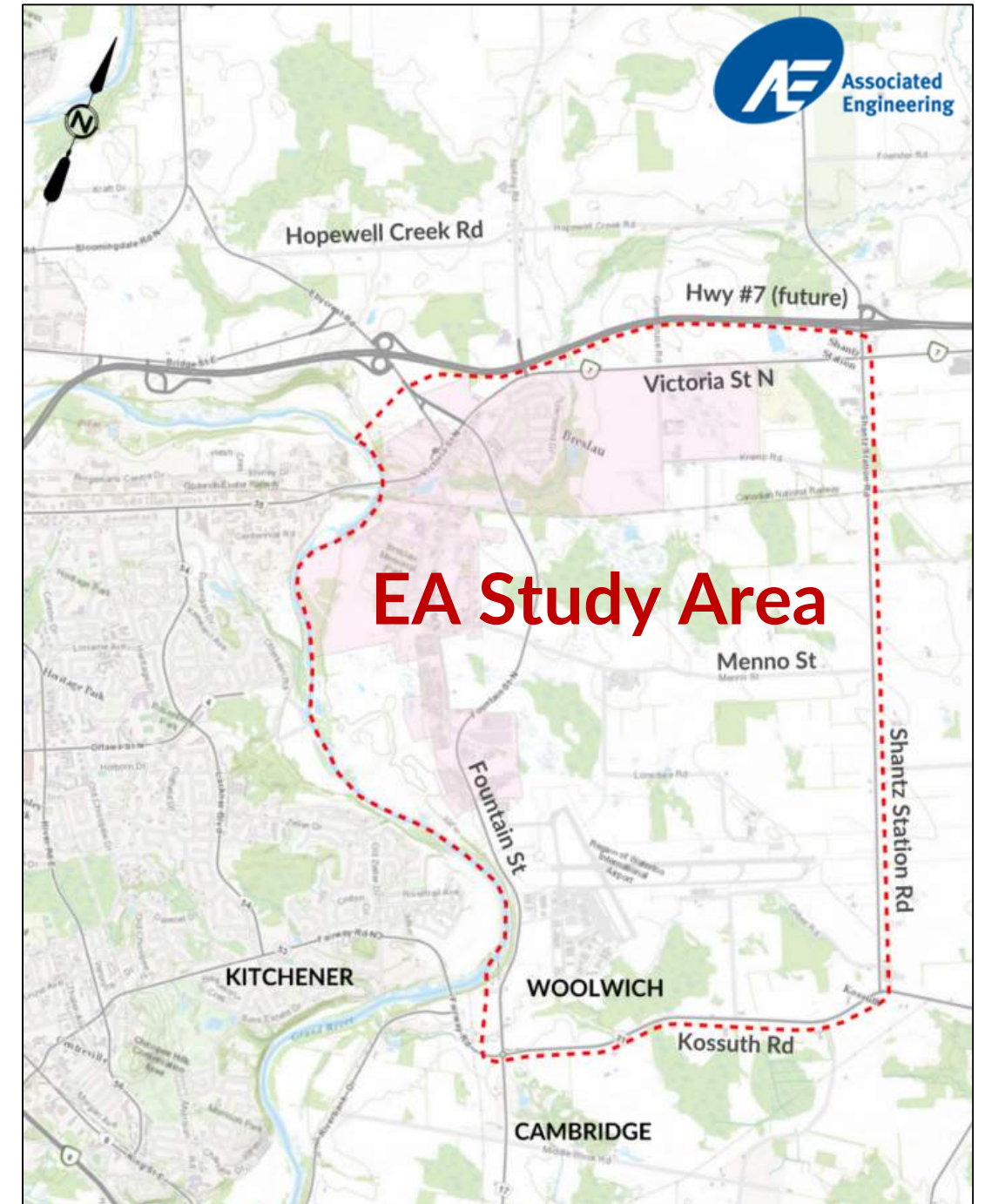
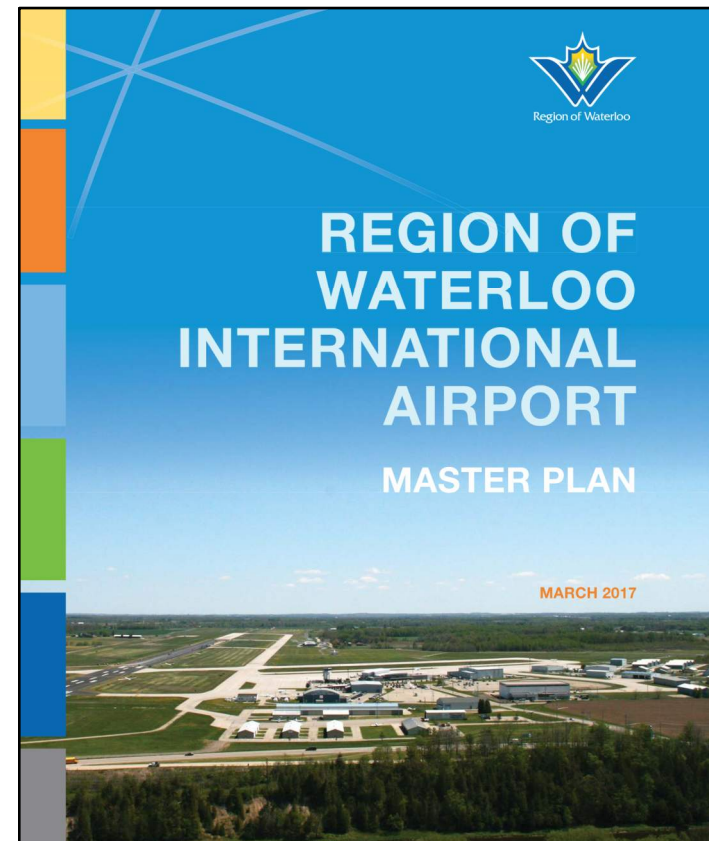
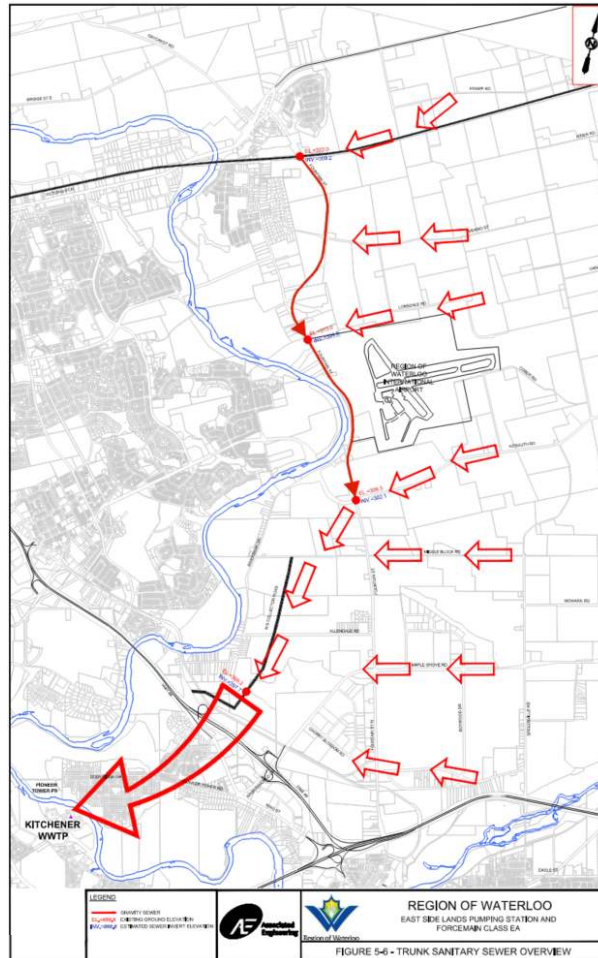


Recap of PCC#1: Class EA Process



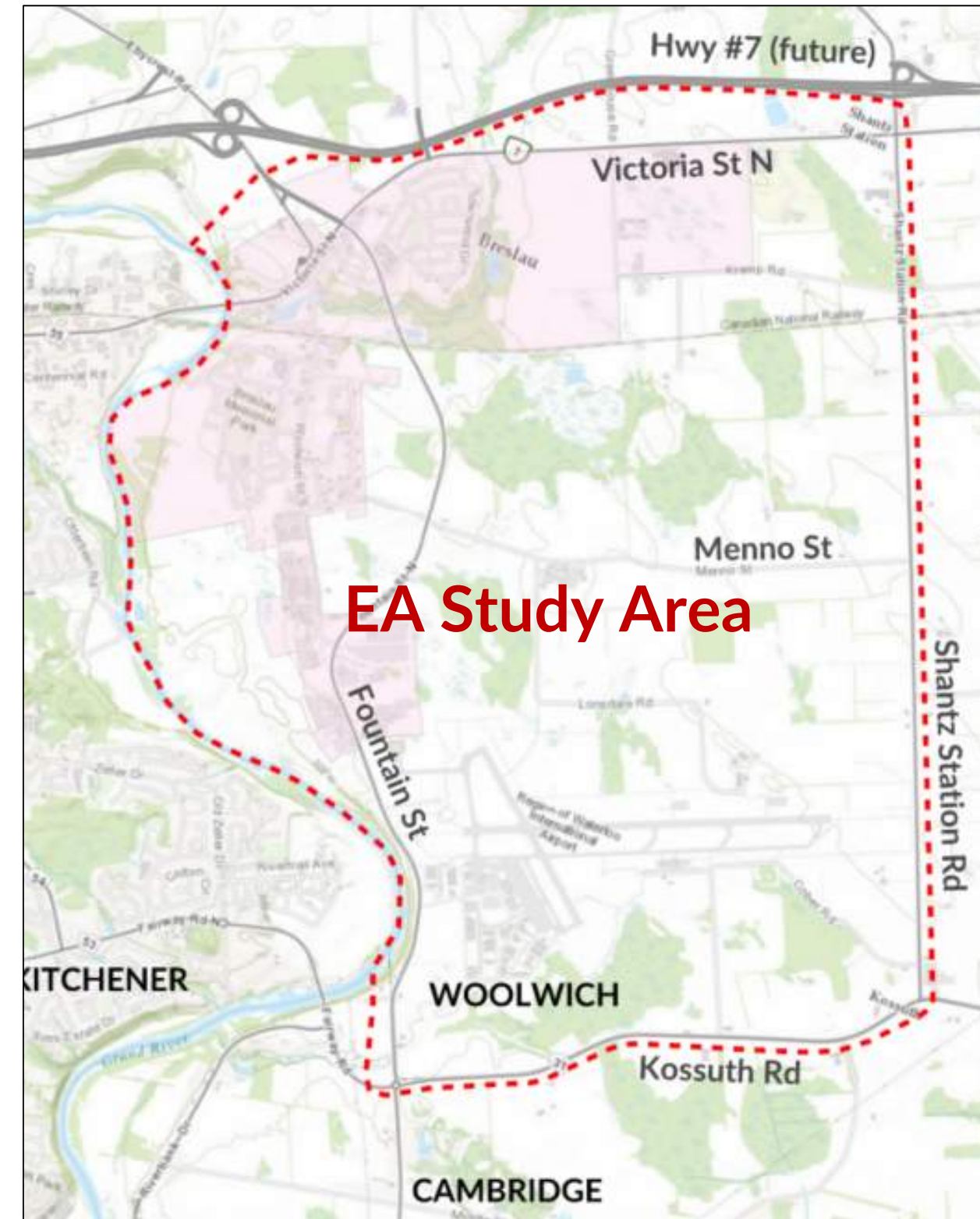
Recap of PCC#1: Project History & Context

East Side Lands Sanitary Servicing EA
North Cambridge Business Park Class EA
Region of Waterloo Airport Master Plan



Recap of PCC#1: EA Study Area

- Focus on Township of Woolwich Lands
- Existing Breslau Community
 - Serviced by the Victoria Street Pumping Station
- Expanded Breslau Boundary
 - Future Hwy #7, Shantz Station Rd and Kossuth Rd
- Key Stakeholders:
 - Future Developments in Breslau
 - Conestoga Meat Packers
 - Region of Waterloo Airport (YKF)
 - City of Cambridge



Recap of PCC#1: EA Problem Statement

Sanitary Servicing for the settlement of Breslau is currently provided through a cross-border agreement with the City of Kitchener which allocates partial capacity of the Victoria Street Pumping Station to the Township of Woolwich. As development continues to evolve in Breslau, the use of that capacity is approaching its limits. Planned development / expansion of existing industries near and around the Breslau area as well as surrounding the Region of Waterloo International Airport (YKF) presents an imminent need for new sanitary servicing.

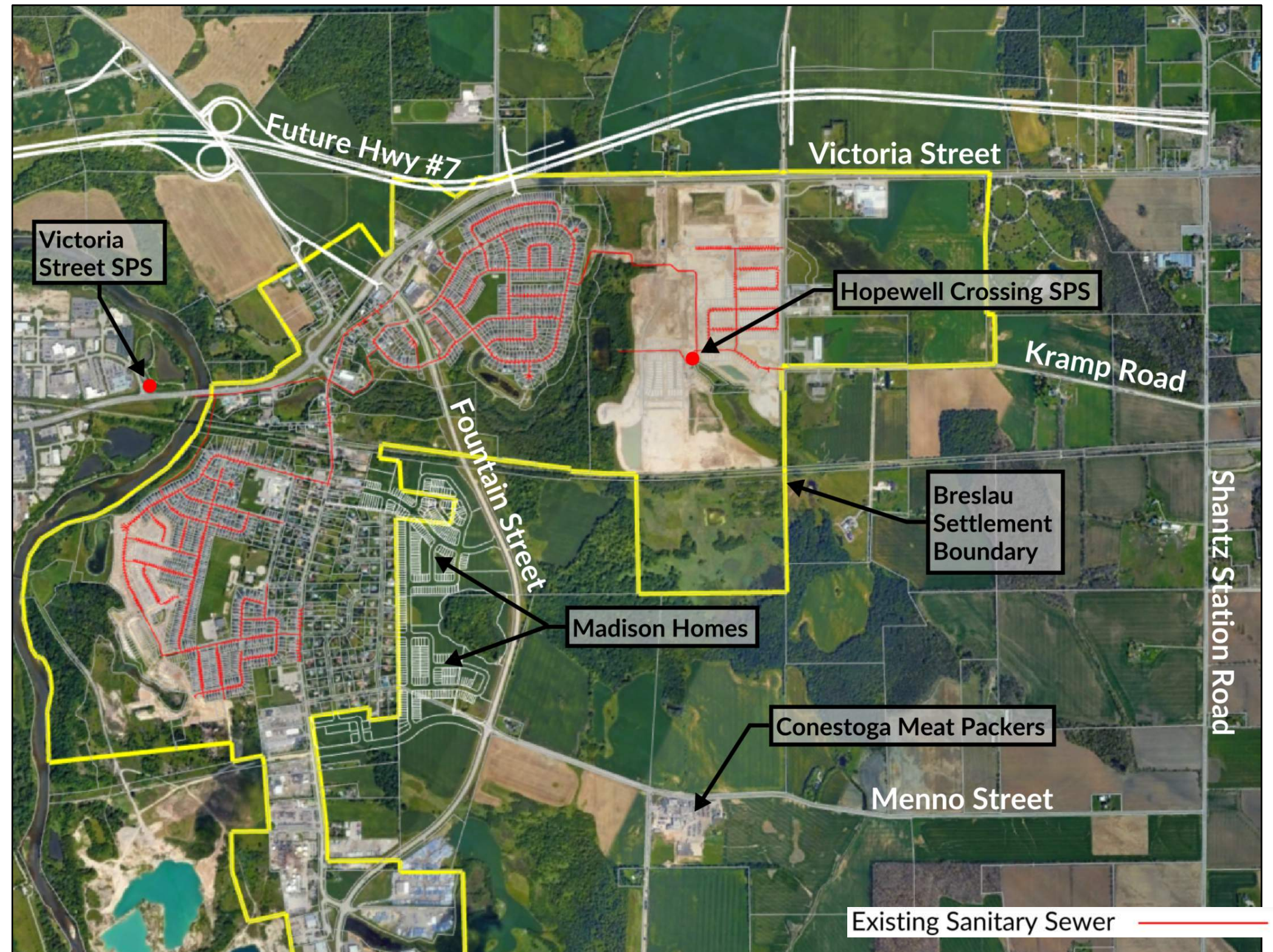
Further development in the Township of Woolwich is anticipated in 2017. This expansion includes the building of new industrial development infrastructure on the east side of Menno Street. Specific limits of infrastructure are required to service the southwest side of Menno Street. It is anticipated that a new pumping/lift station(s) and possibly pumping station(s) and forcemain(s) will be required to service the Woolwich lands south of Menno Street.

The focus of this EA study is to identify the future sanitary servicing infrastructure that will be required, with a focus on the alignment of the main trunk sewer and location of a new pumping / lift station at the southwest limits, needed to service the Woolwich lands south of Menno Street.

The focus of this EA study is to identify the future sanitary servicing infrastructure that will be required, with a focus on the alignment of the main trunk sewer and location of a new pumping / lift station at the southwest limits, needed to service the Woolwich lands south of Menno Street. Furthermore, this study will aim to identify the future sewer alignment(s) and potential additional pumping stations that may be required to service the lands north of Menno Street.

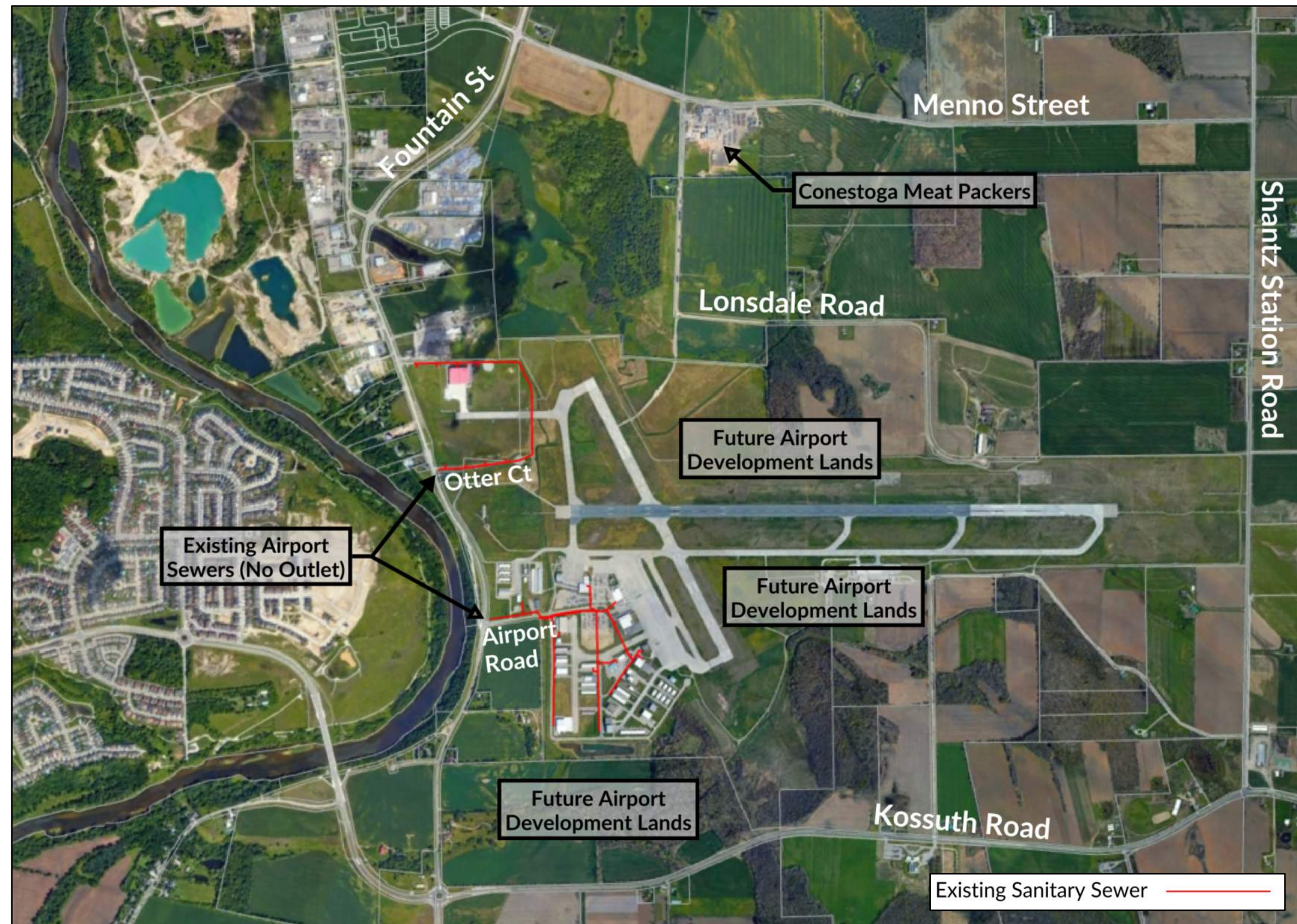
Recap of PCC#1: Existing Sanitary Infrastructure

Existing Breslau is serviced by
the City of Kitchener's Victoria
Street Sanitary Pumping Station
(Max. Allowable Flow = 189 L/s)



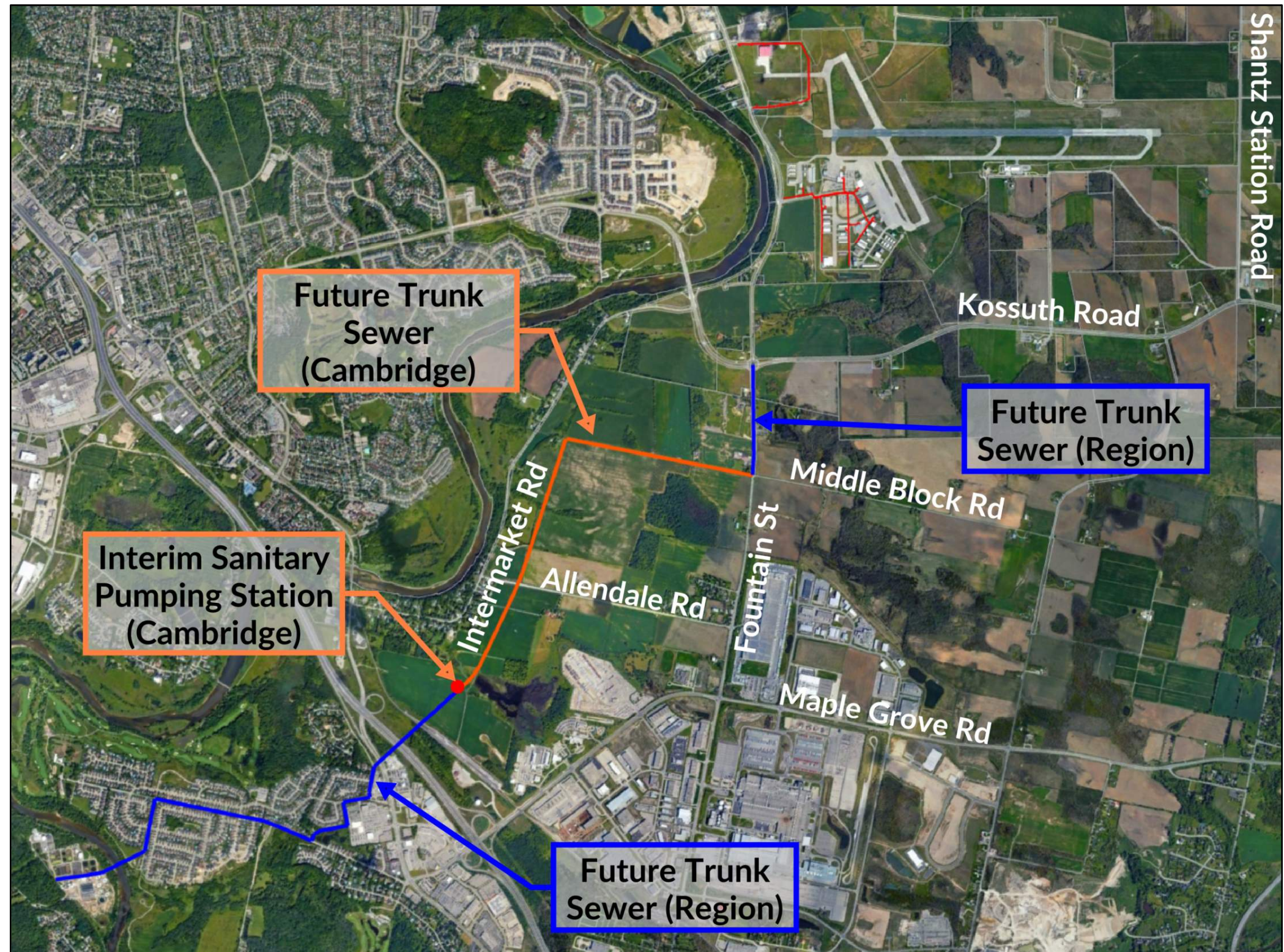
Recap of PCC#1: Existing Sanitary Infrastructure

Conestoga Meats and the Regional Airport lands require immediate servicing upgrades to accommodate current and future planned expansions.

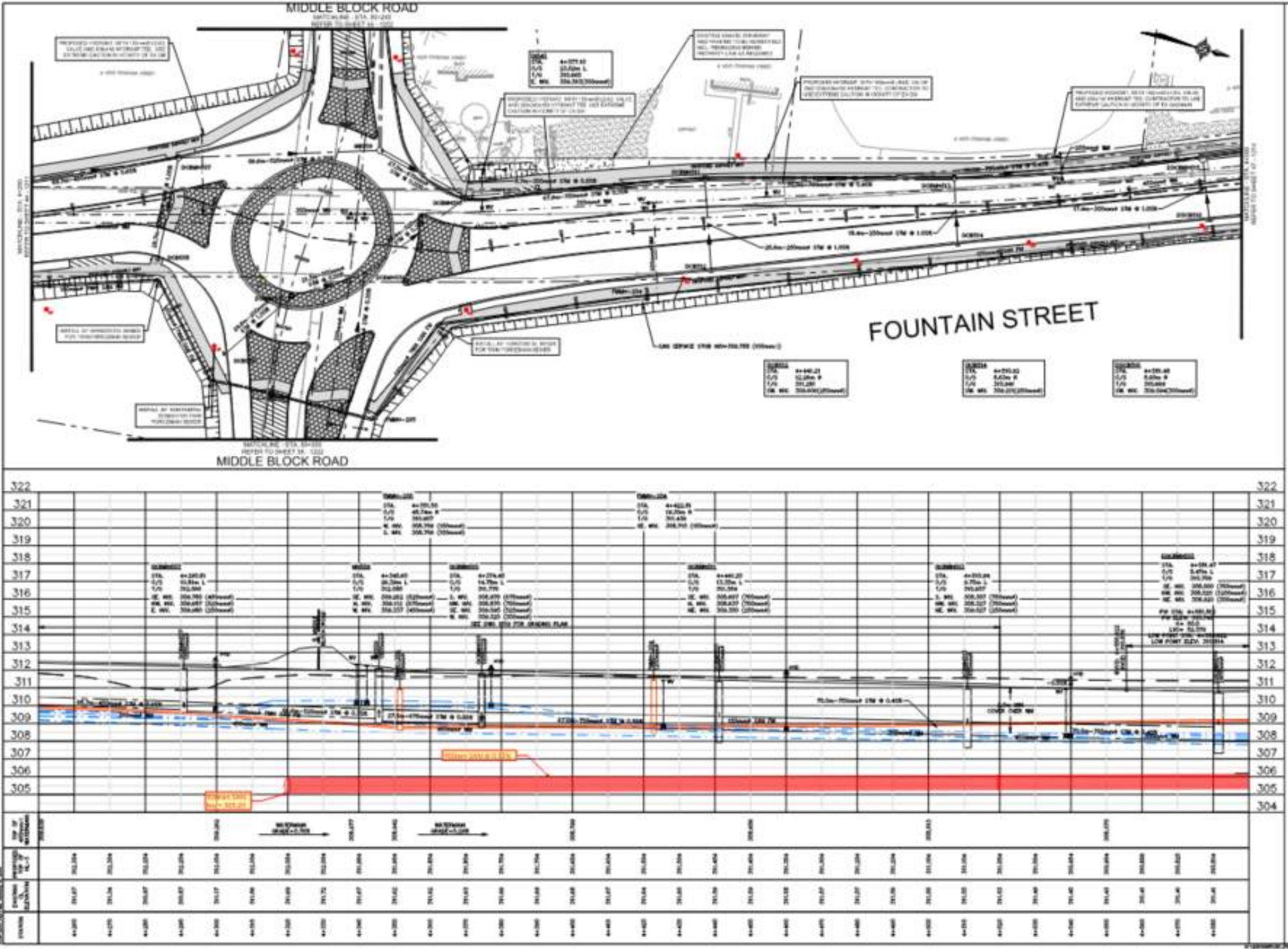
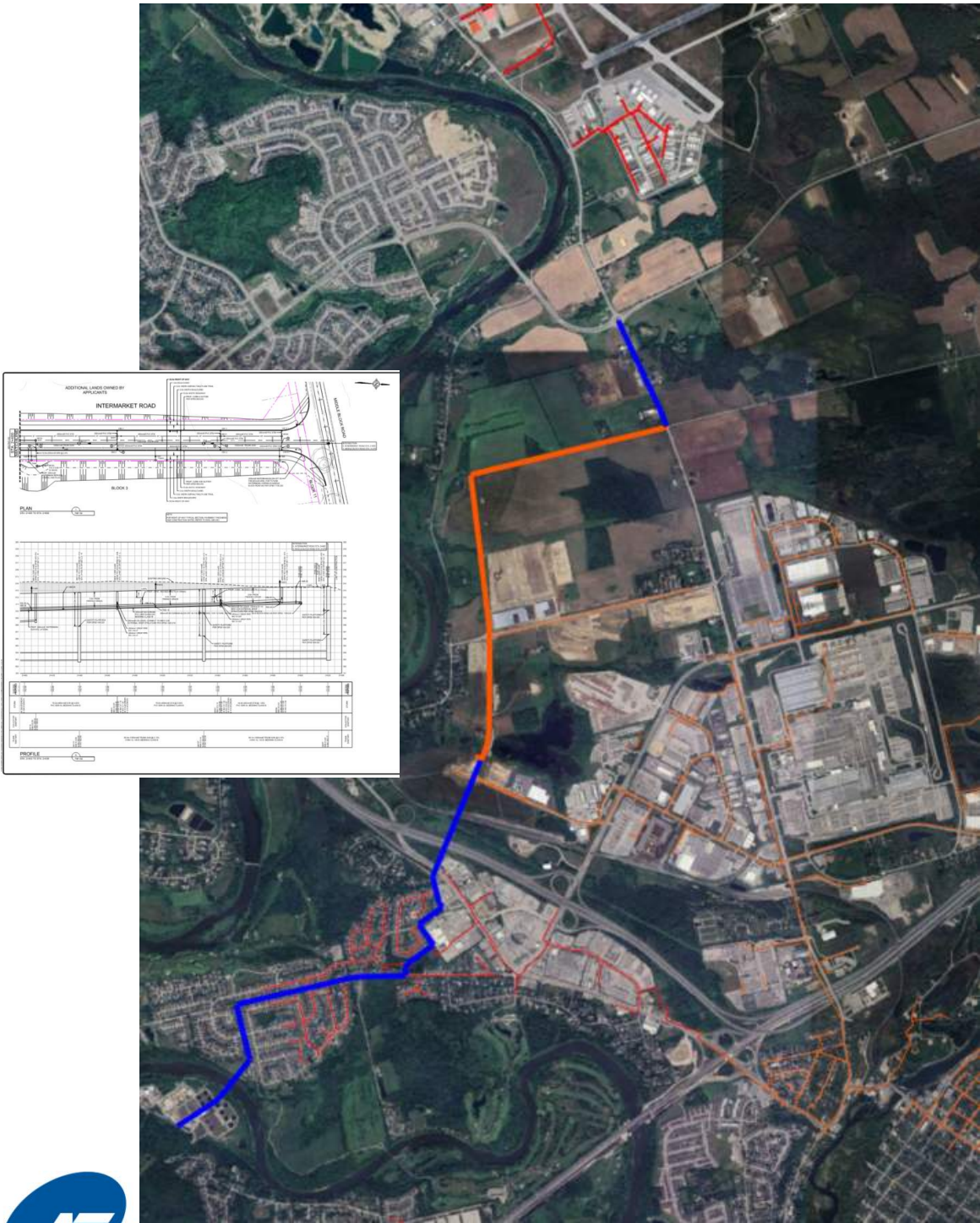


Recap of PCC#1: Planned Downstream Sewer Outlet

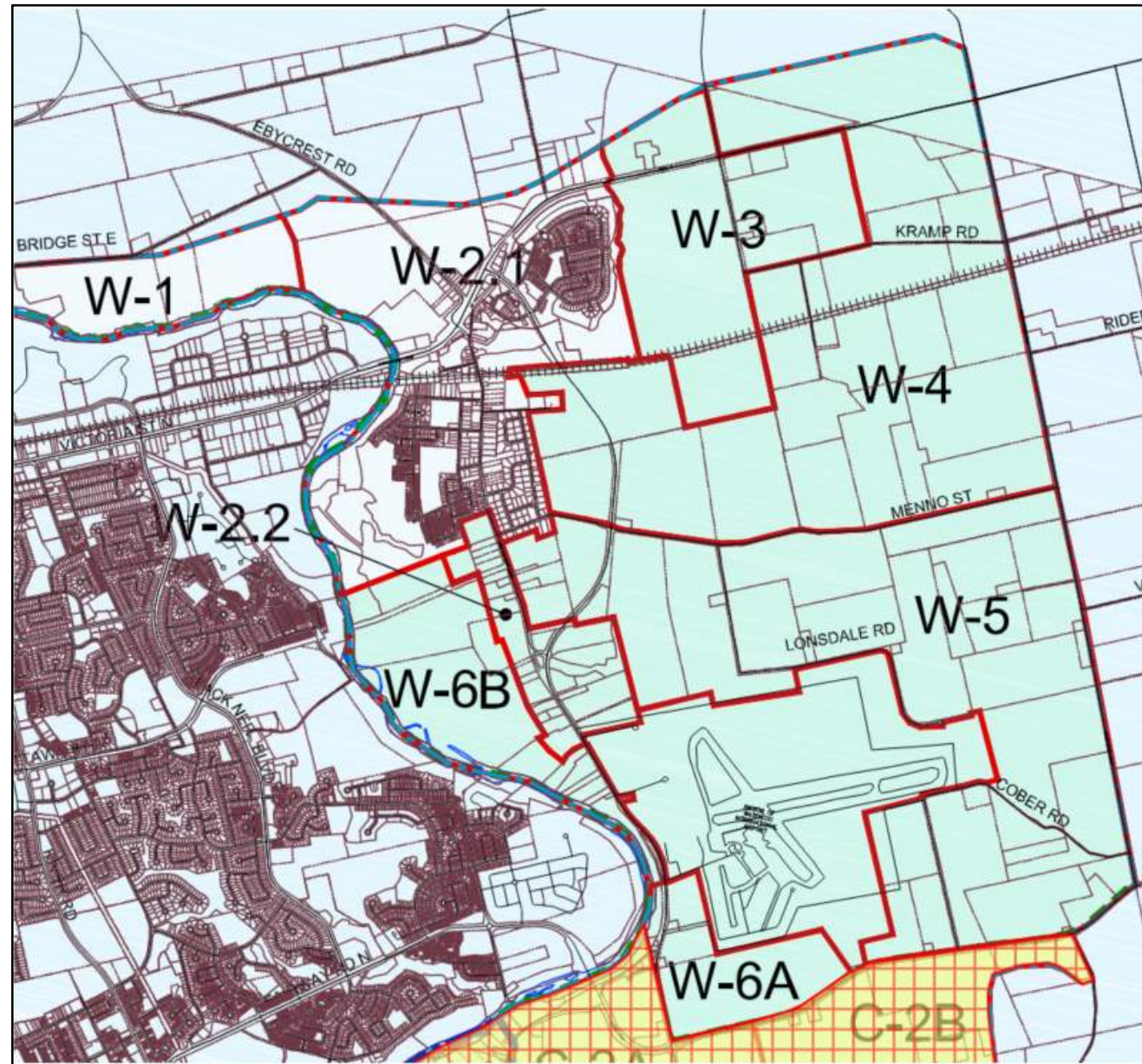
Future trunk sewers downstream of Woolwich are being constructed by the Region of Waterloo and the City of Cambridge



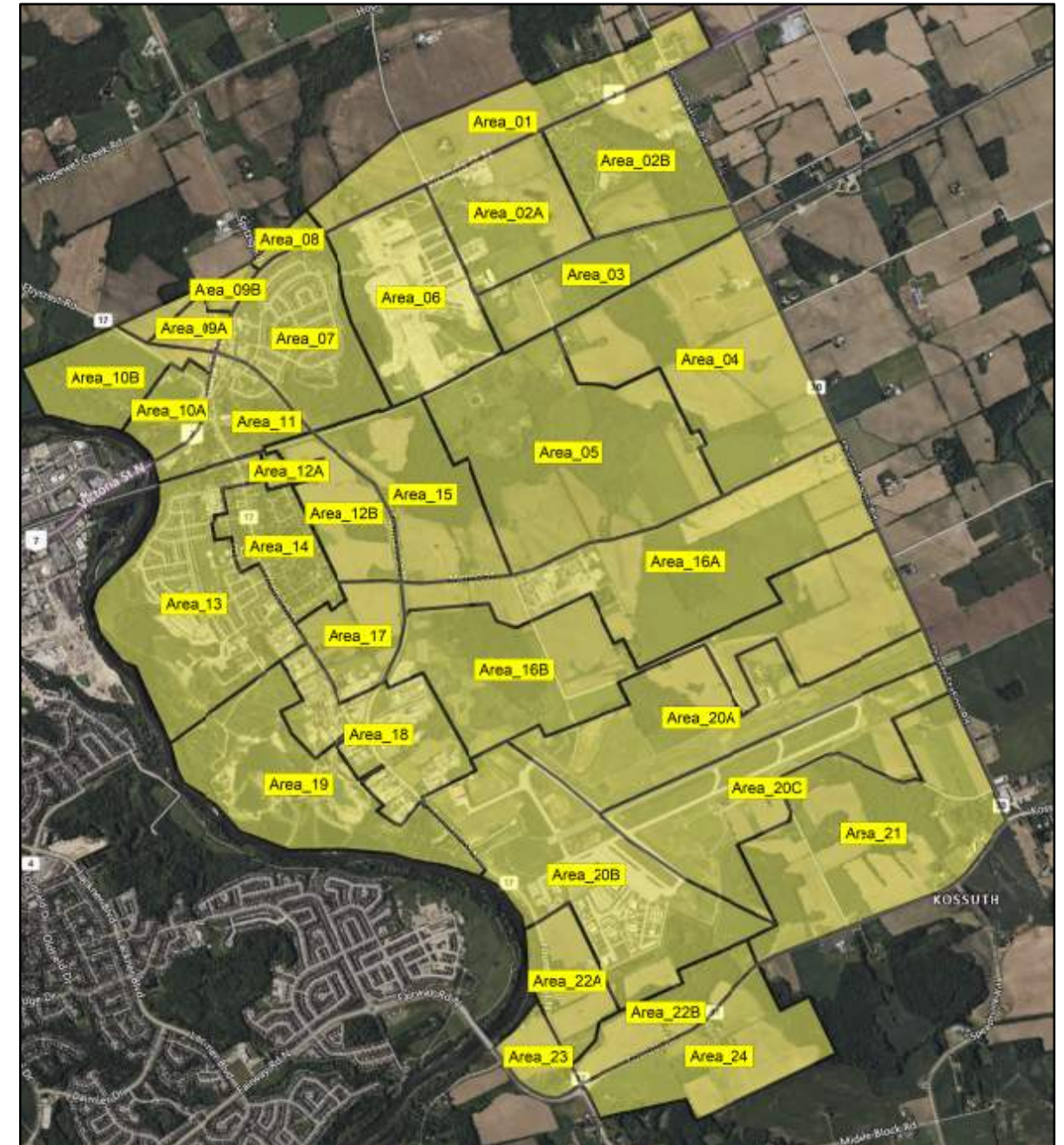
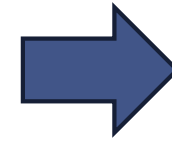
Recap of PCC#1: Planned Downstream Sewer Outlet



Recap of PCC#1: Sanitary Drainage Areas & Flow Rates



Coarse Sanitary Drainage Areas
from the 2018 Sanitary Servicing EA

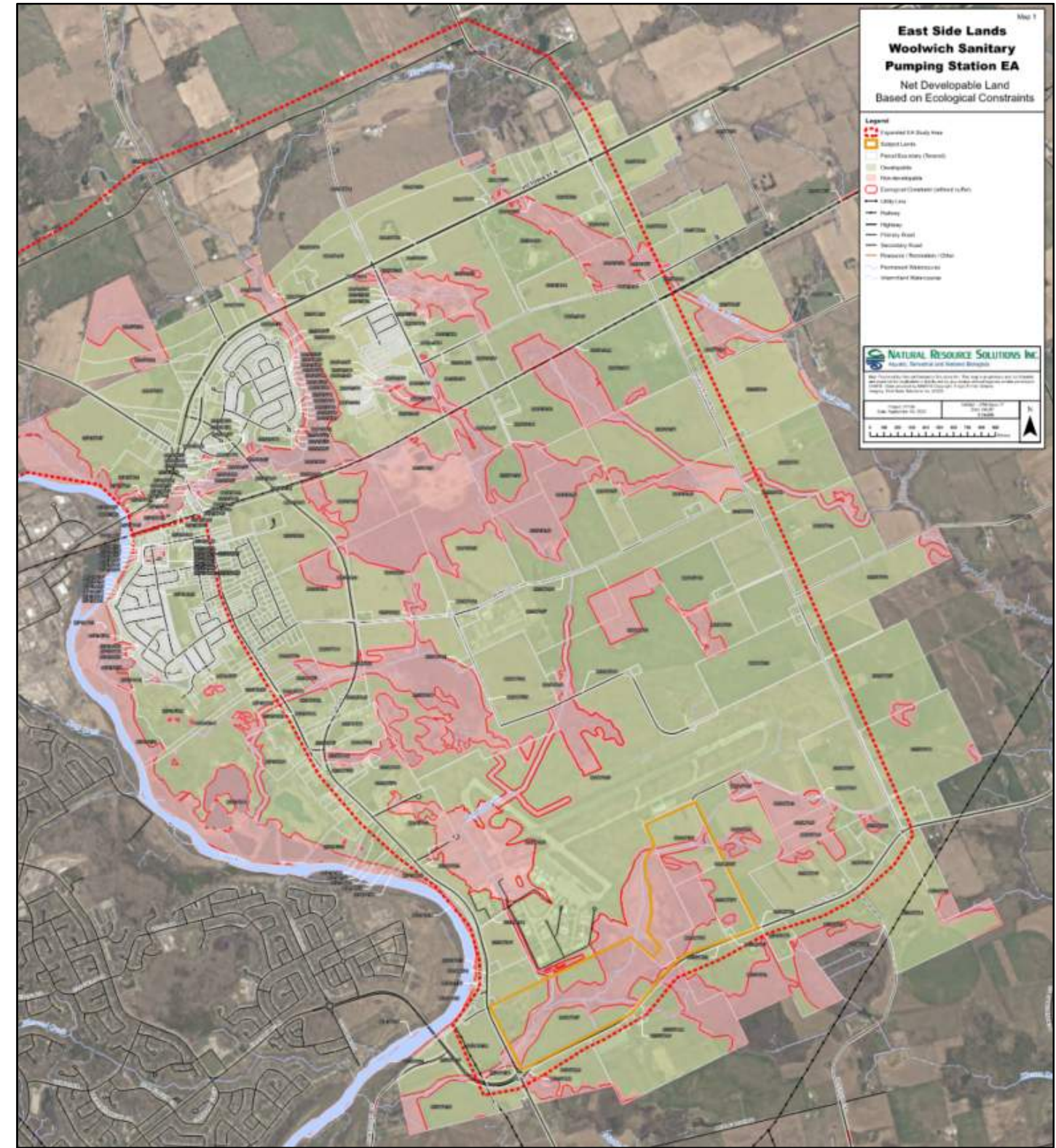


Refined Drainage Areas for Current
EA's Sanitary Assessment

Recap of PCC#1: Sanitary Drainage Areas & Flow Rates

Detailed analysis of existing land uses and property ownership.

Exclusion of **Environmental Constraint areas** to determine “**Net Developable Areas**” to be used to calculate design flow rates.



Recap of PCC#1: Sanitary Drainage Areas & Flow Rates

Design Flow Rates will be calculated based on “Equivalent Population” approach, using assumed population densities for residential and non-residential land uses.

Delineation of flows from each sanitary catchment area is used to assist with modeling and development scenarios.

Key Variables:

- Average Daily Flow (ADF)
 - 275 L/cap/day
- Population Density
 - Residential
 - Non-Residential
- Peaking Factor (2.0)
- Extraneous Flows (I&I)
 - 0.15 L/ha/s

Design Flowrate at Downstream Limit = 546 L/s

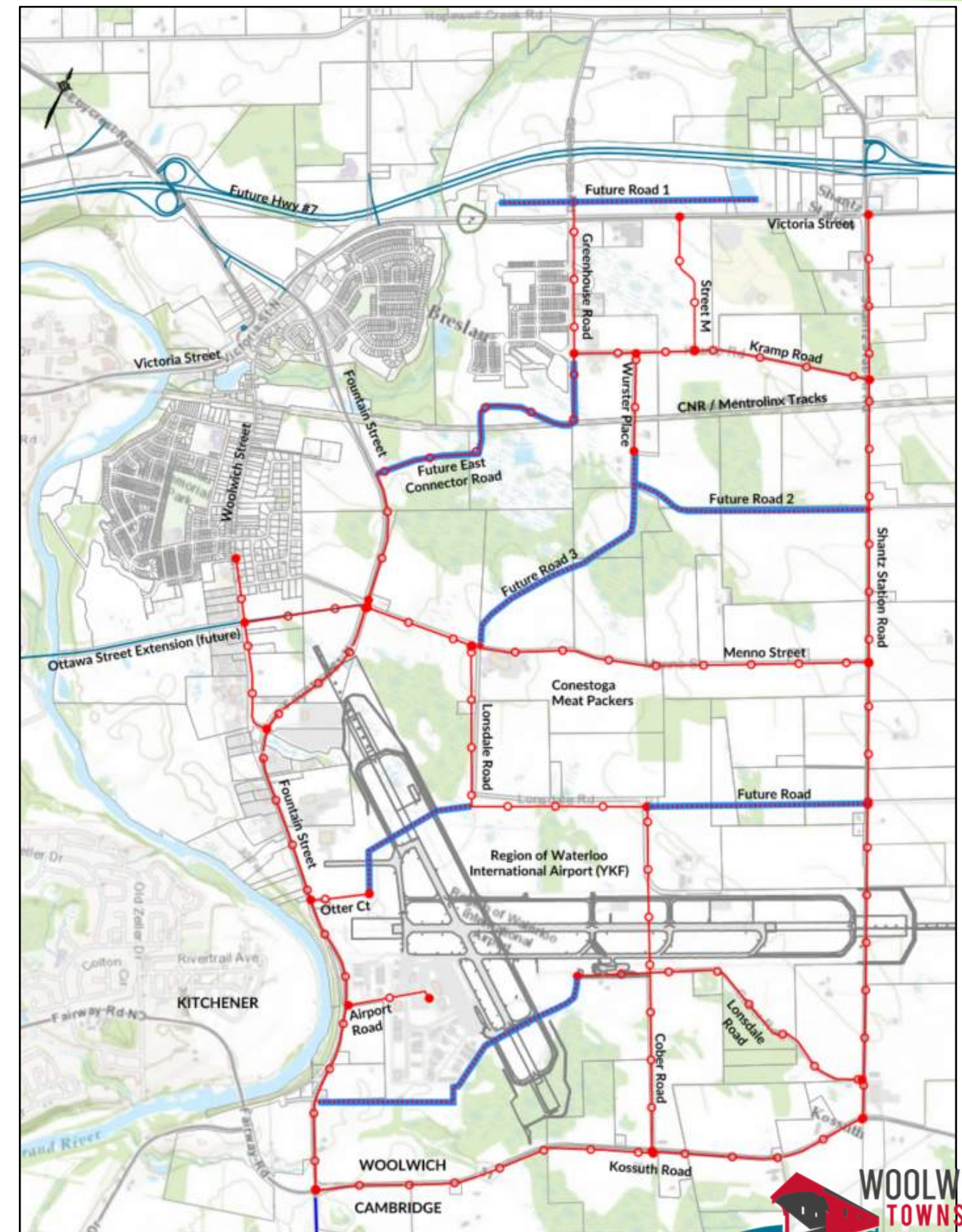
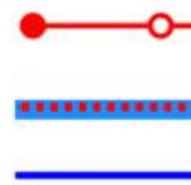
Recap of PCC#1: Assumed Future Sewer Network

Ultimately and as lands develop over time, the existing roads will be upgraded and will typically include new sanitary sewers. Some new roads have been assumed based on net developable areas (to be confirmed or adjusted by future planning studies).

A focus of this EA study is to determine the alignment for ultimate “Trunk” Sewer(s).

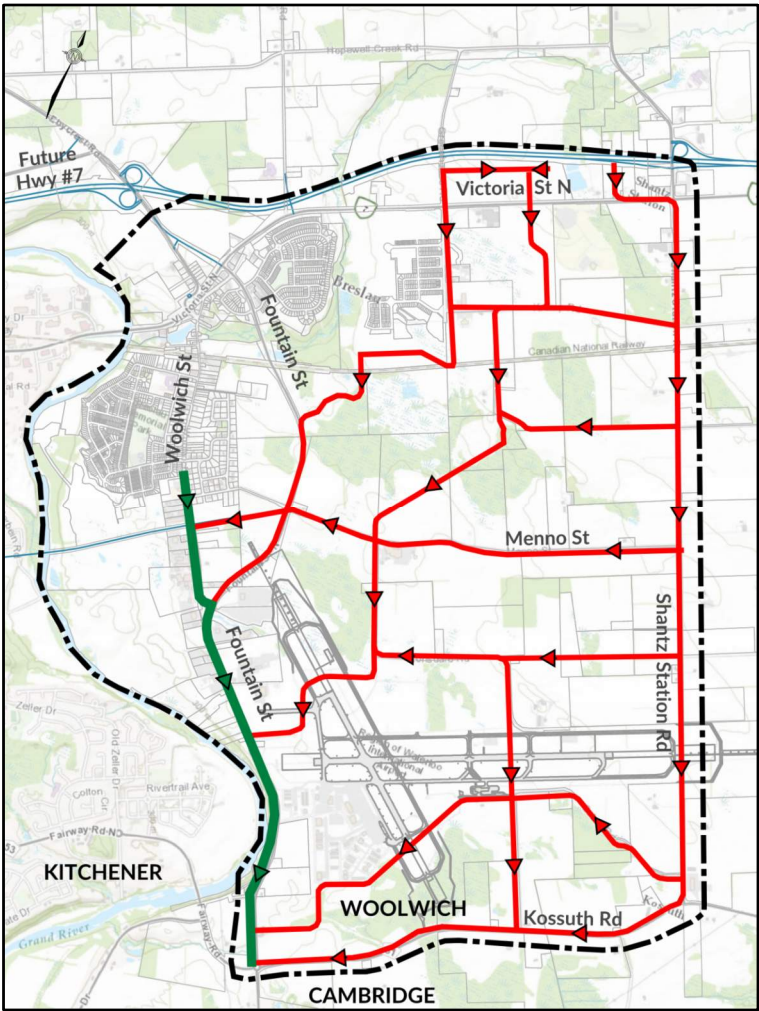
Legend

- Anticipated Future Sanitary Sewer (On Ex. Road)
- Possible Future Sanitary Sewer (On Possible Future Road)
- Planned Trunk Sanitary Sewer (RMW)



Recap of PCC#1: Trunk Sewer Alternative Alignments

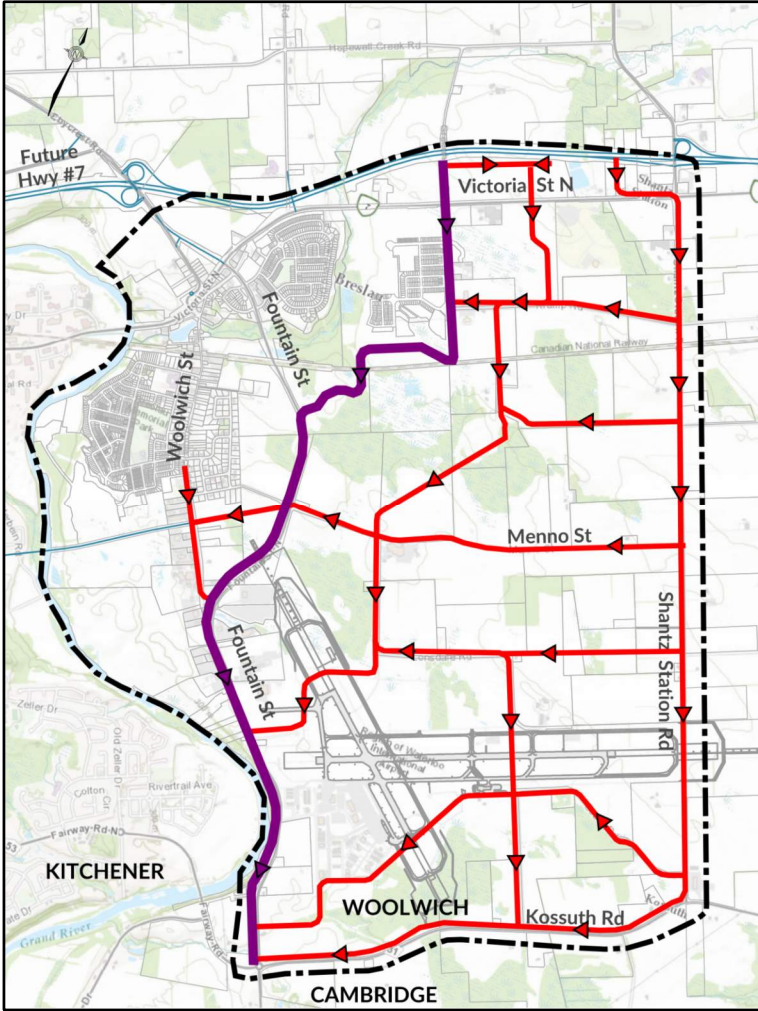
Alignment #1



Legend:

- Study Area Boundary
- Trunk Sewer Alt #1
- Future Local Sewer

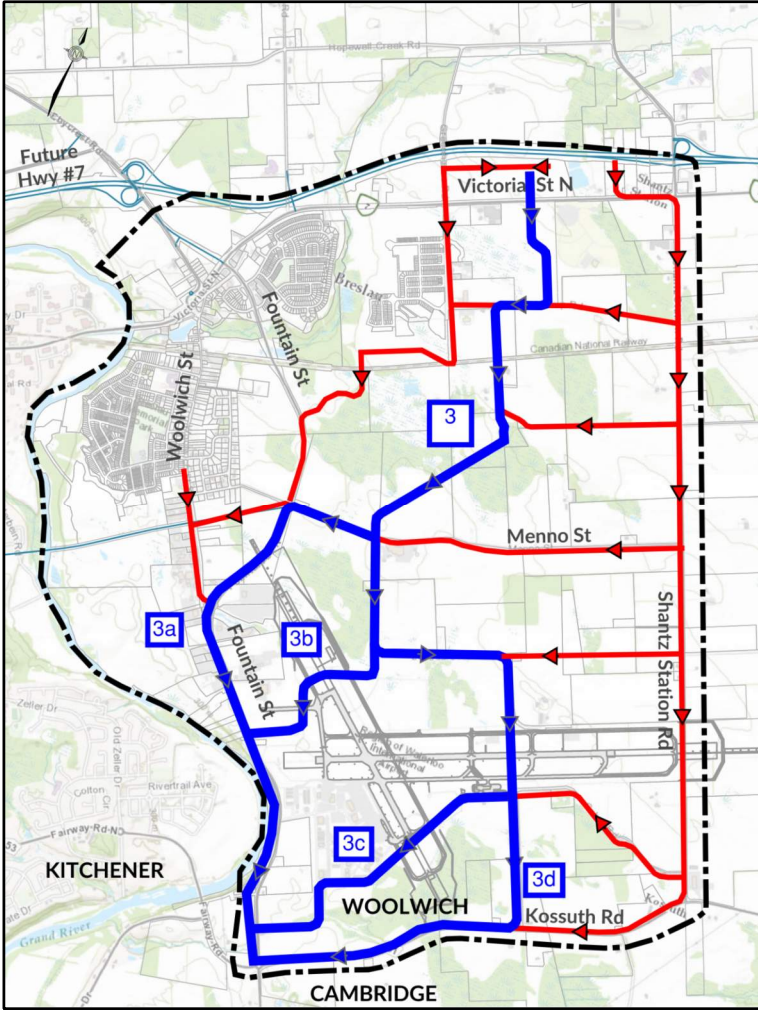
Alignment #2



Legend:

- Study Area Boundary
- Trunk Sewer Alt #2
- Future Local Sewer

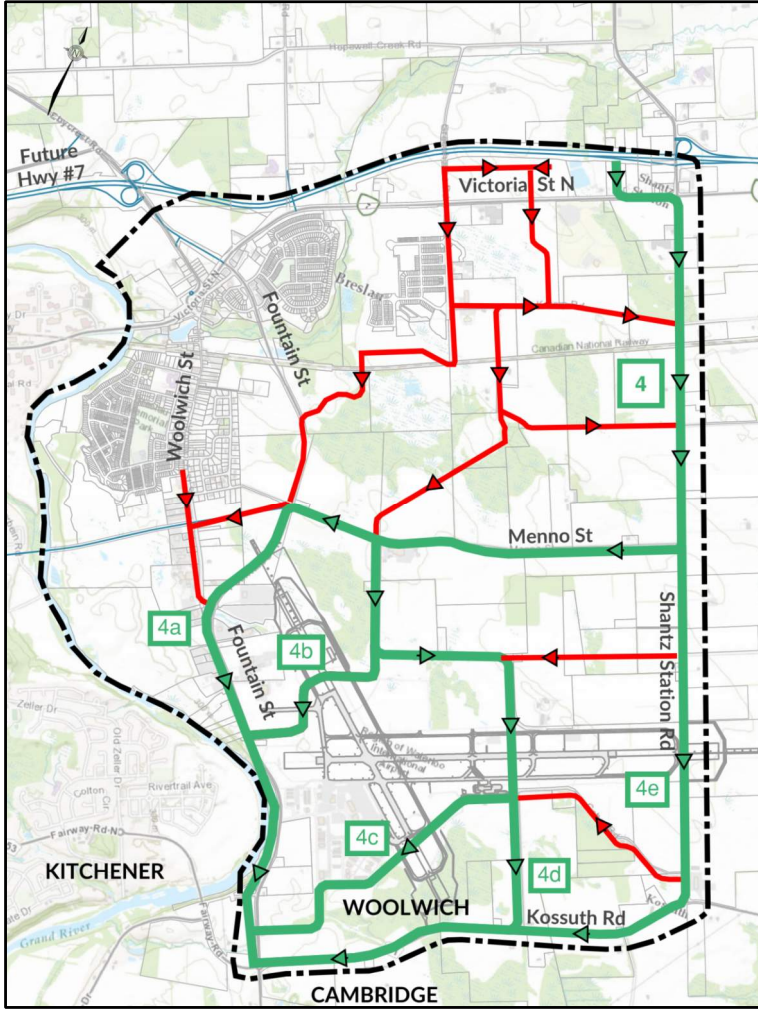
Alignment #3 (abcd)



Legend:

- Study Area Boundary
- Trunk Sewer Alt #3
- Future Local Sewer

Alignment #4 (abcde)

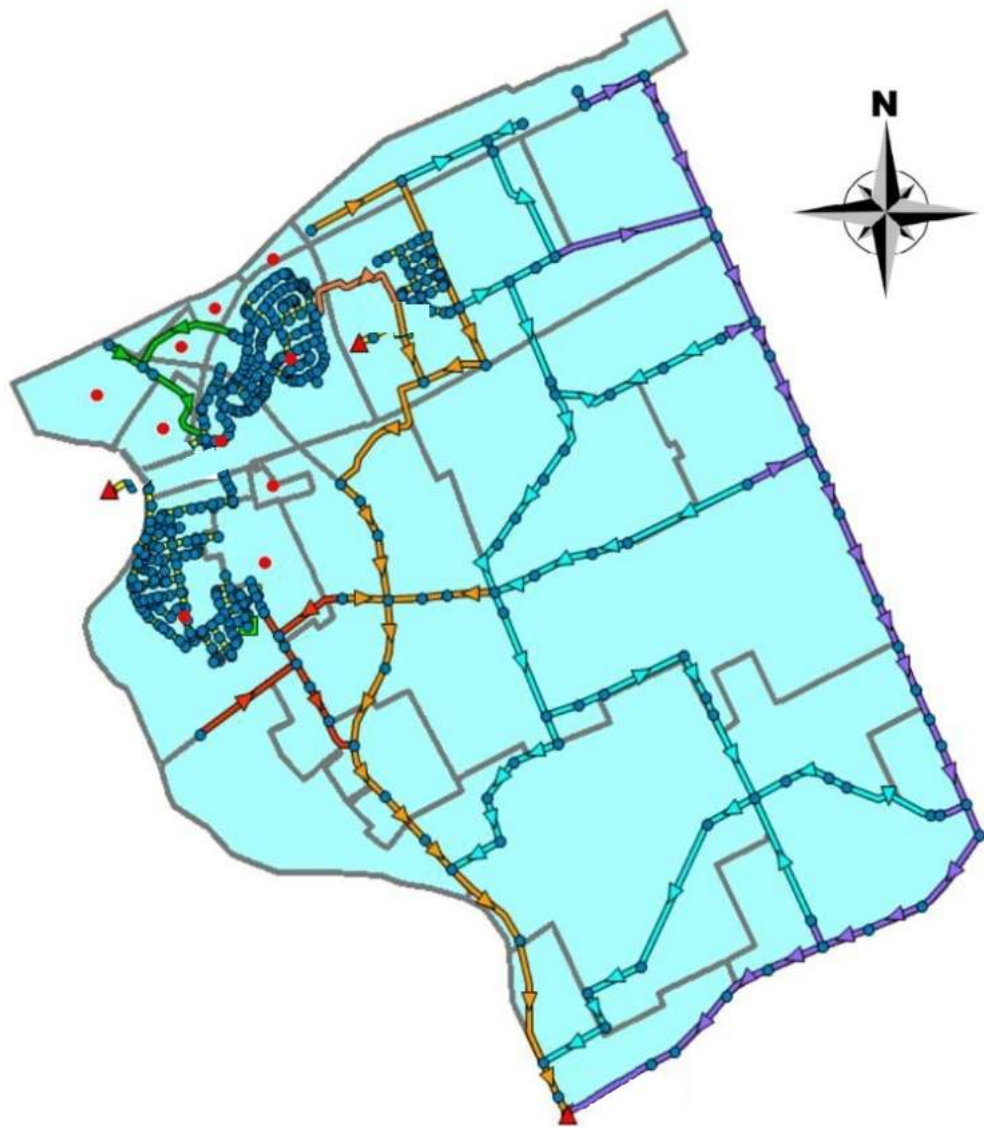


Legend:

- Study Area Boundary
- Trunk Sewer Alt #4
- Future Local Sewer

Trunk Sewer Alignments & Analysis

- 1 Alt. Trunk #1 - Woolwich + Fountain
- 2 Alt. Trunk #2 - Greenhouse Road to East Connector to Fountain
- 3 Alt. Trunk #3A = Street M + Wurster Place + New Road + Menno + Fountain+
- 4 Alt. Trunk #3B = Street M + Wurster Place + New Road + Lonsdale + Otter + Fountain
- 5 Alt. Trunk #3C = Street M + Wurster Place + New Road + Lonsdale + cross runway + Norseman + Fountain
- 6 Alt. Trunk #3D = Street M + Wurster Place + New Road + Lonsdale + cross runway+Cober+ Kossuth
- 7 Alt. Trunk #4A = Victoria + Shantz Station + Menno + Fountain
- 8 Alt. Trunk #4B = Victoria + Shantz Station + Menno + Lonsdale + Otter + Fountain
- 9 Alt. Trunk #4C = Victoria + Shantz Station + Menno + Lonsdale + runway + Norseman + Fountain
- 10 Alt. Trunk #4D = Victoria + Shantz Station + Menno + Lonsdale + Runway + Cober + Kossuth
- 11 Alt. Trunk #4E = Victoria + Shantz Station + Kossuth

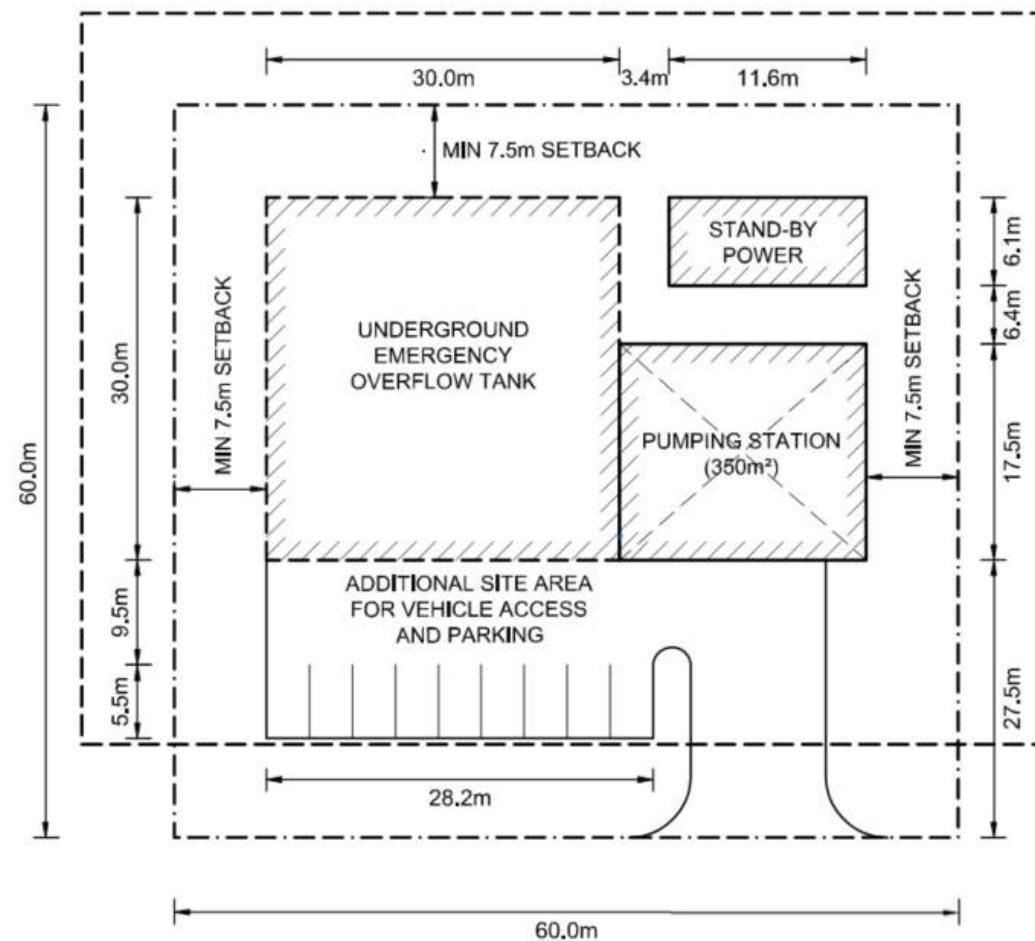


Gravity Sewer Depth Analysis

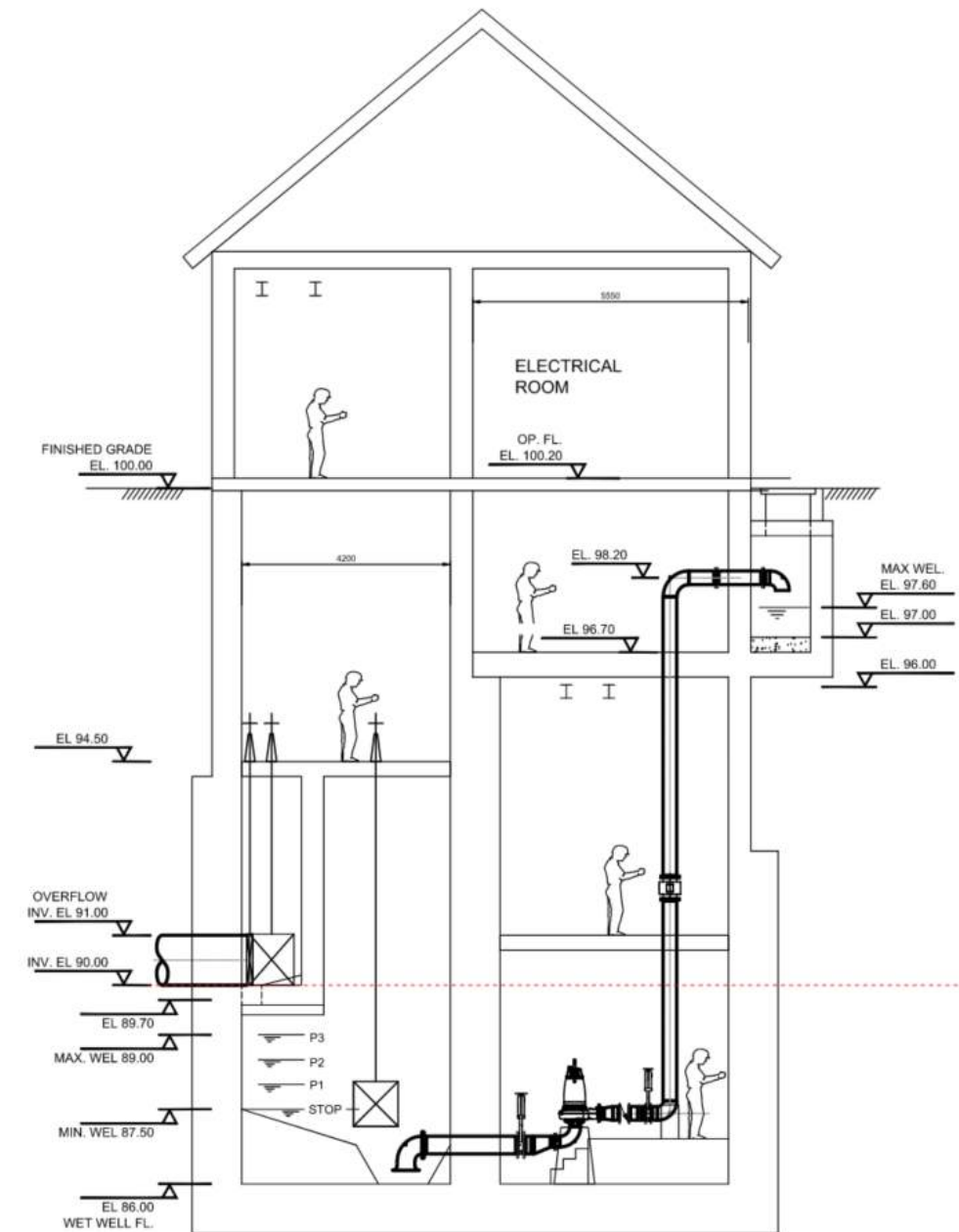
Atlernative Alignments	Trunk Only D/S Depth (m)	All Sewers D/S Depth (m)
Alt. Trunk #1	12.2	18.2
Alt. Trunk #2	10.6	16.9
Alt. Trunk #3A	10.6	16.9
Alt. Trunk #3B	9.0	15.6
Alt. Trunk #3C	12.8	20.1
Alt. Trunk #3D	14.4	21.0
Alt. Trunk #4A	16.9	19.7
Alt. Trunk #4B	15.6	18.5
Alt. Trunk #4C	20.1	22.9
Alt. Trunk #4D	21.0	23.8
Alt. Trunk #4E	14.6	23.8

Recap of PCC#1: Preliminary Pumping Station Sizing & Layout

- Assumed Design Flow Rate: +/- 500 L/s
- Assumed Influent Sewer Depth: +/- 10m



Plan View



Cross-Section

Recap of PCC#1: Alternative Pumping Station Locations

Recognizing that all upstream sewer flows will eventually converge at the Fountain / Kossuth intersection, a 'long list' alternative locations for the Pumping Station site is being considered.

Once a preferred trunk sewer alignment is confirmed, a 'short list' of Pumping Station Sites will be identified for further evaluation.

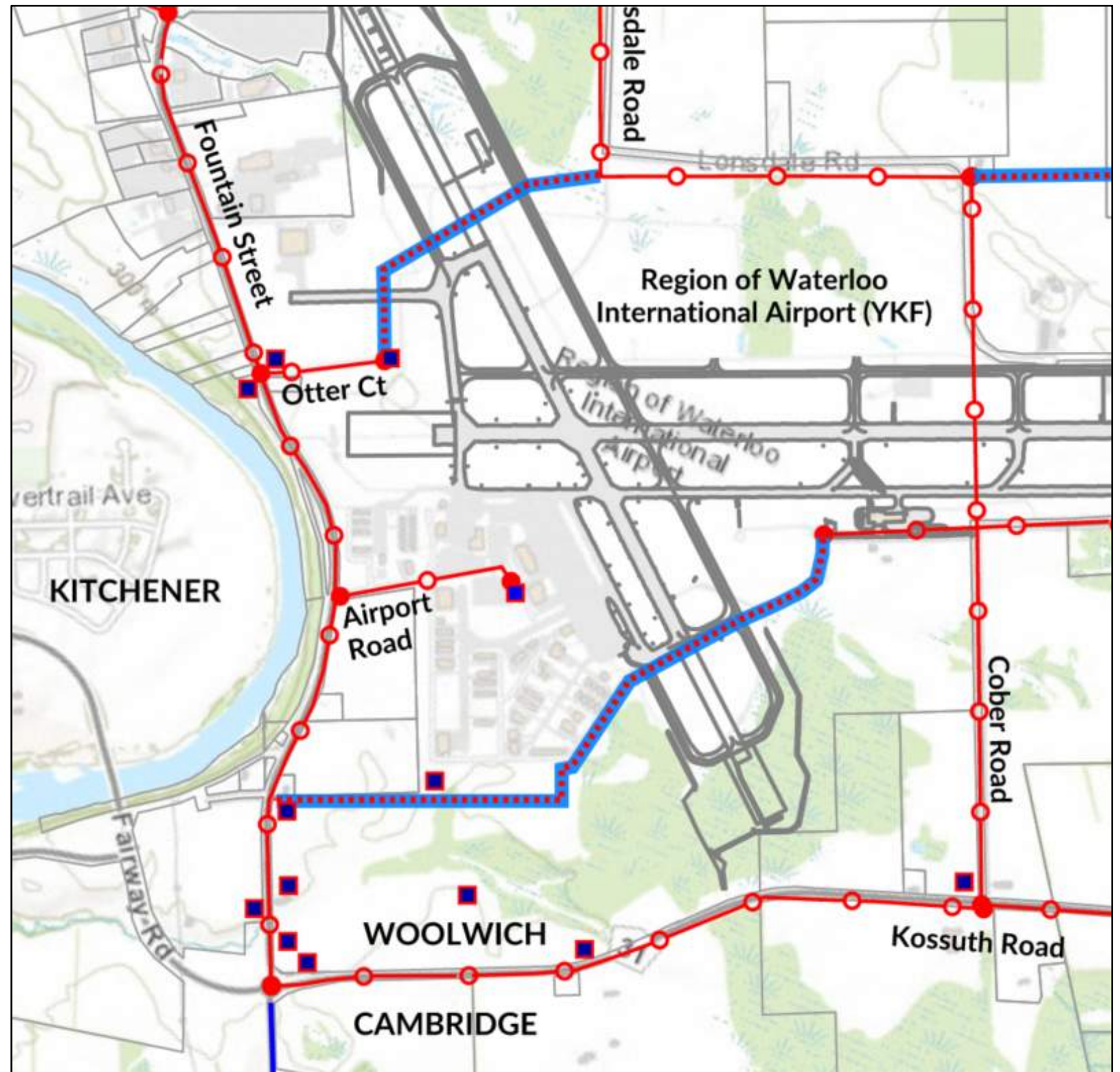
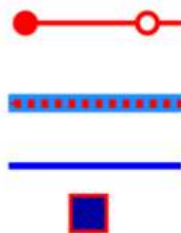
Legend

Anticipated Future Sanitary Sewer
(On Ex. Road)

Possible Future Sanitary Sewer
(On Possible Future Road)

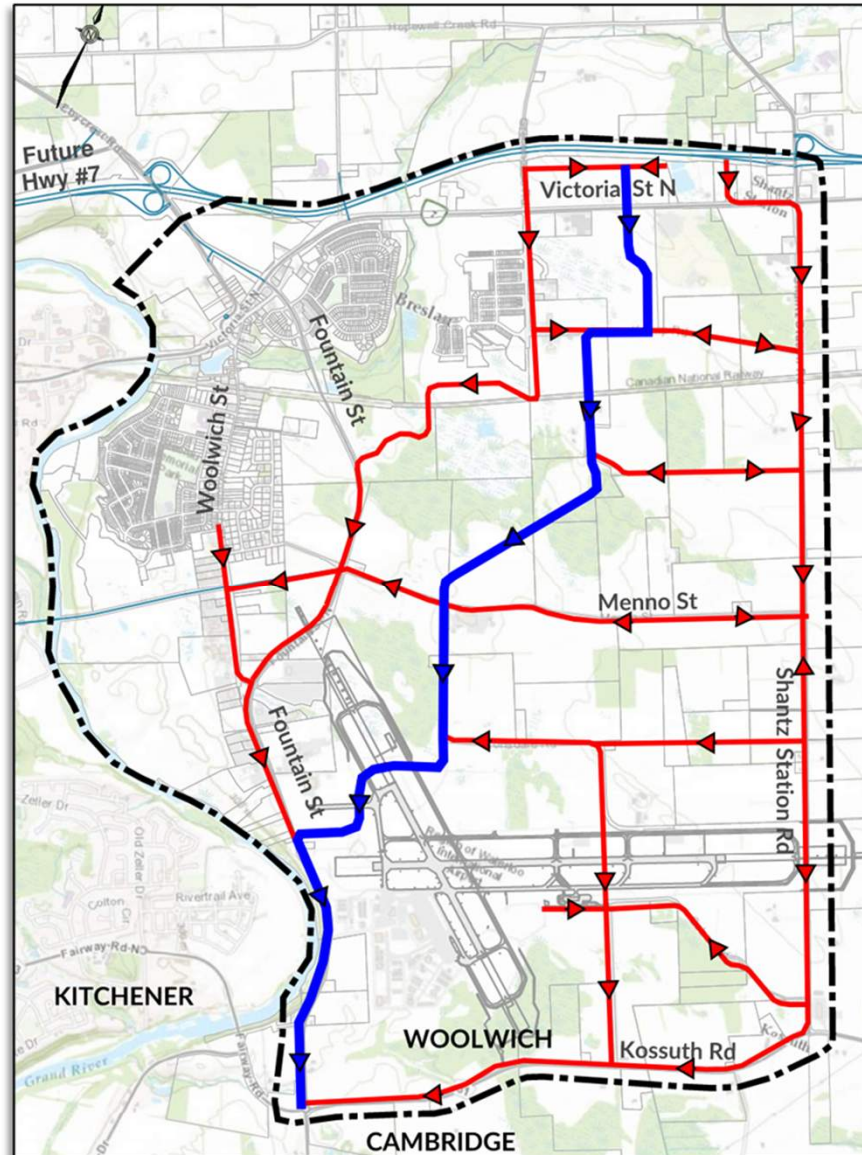
Planned Trunk Sanitary Sewer (RMW)

Potential Pumping Station Site



Alternative Solutions

Alignment 3B



Alternative #1 – (3B) Gravity Sewers Only
(Deep) + Lg Lift Station @ Fountain/Kossuth

Alternative #2 – (3B) Gravity Sewers (10m max)
+ Local LS + Lg Lift Station @ Fountain/Kossuth

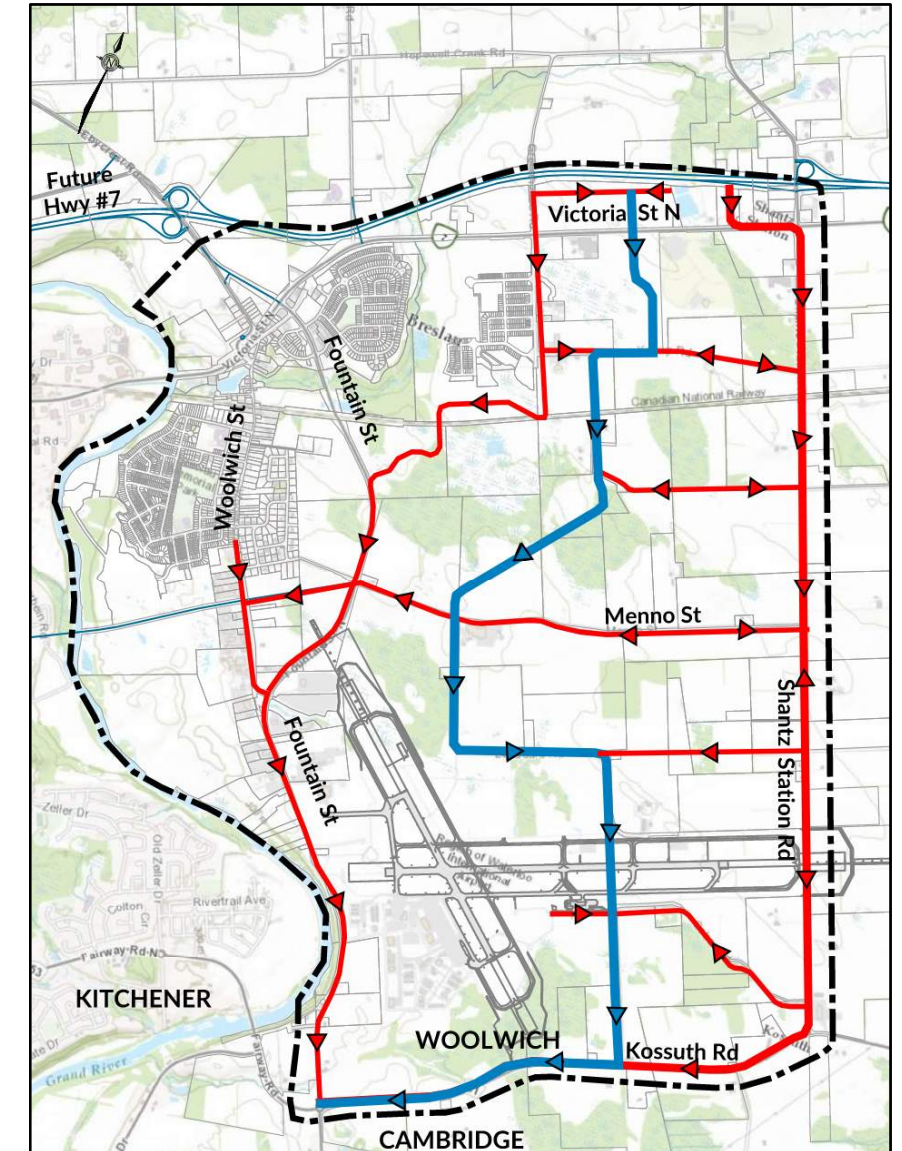
Alternative #3 – (3D) Gravity Sewers Only
(Deep) + Lg Lift Station @ Fountain/Kossuth

Alternative #4 – (3D) Gravity (10m max) +
Local LS + Lg Lift Station @ Fountain/Kossuth

Alternative #5 – (3B Optimized*)
Gravity Sewers + Local LS

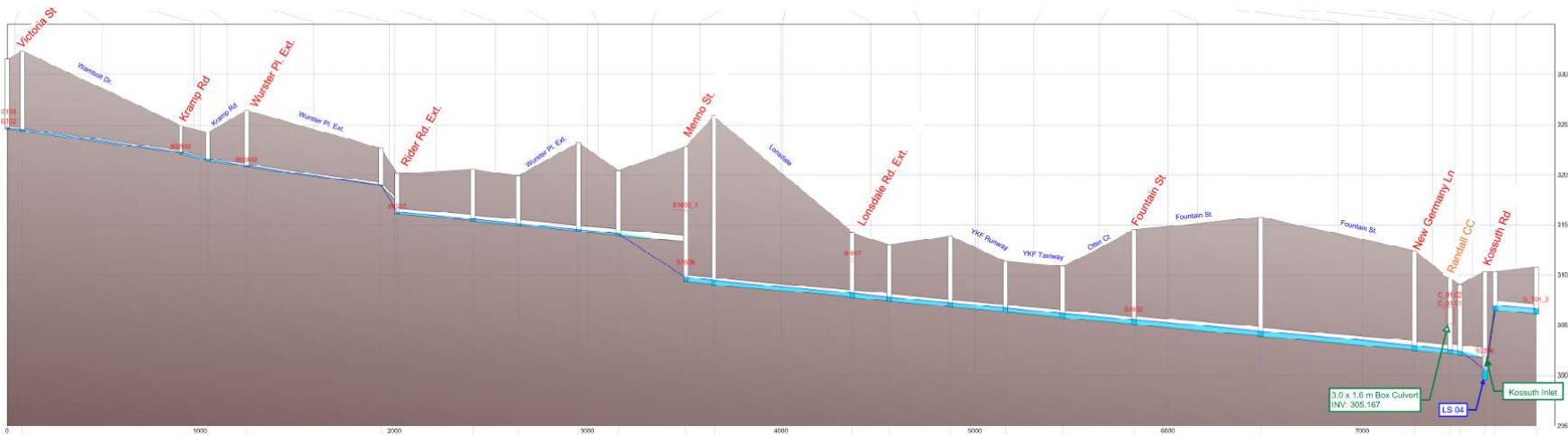
Alternative #6 – (3D Optimized*)
Gravity Sewers + Local LS

Alignment 3D



Alternative #1

Gravity sewers ONLY along Trunk Sewer **Alignment 3B** (crossing future YKF Runway 14-32 & Apron VII) and local connecting sewers, all using minimum 0.1% slope per MECP guidelines. Results in deeper trunk sewer to downstream end of study area, outletting into a large single Lift Station that discharges to the Region sewer outlet on Fountain Street.



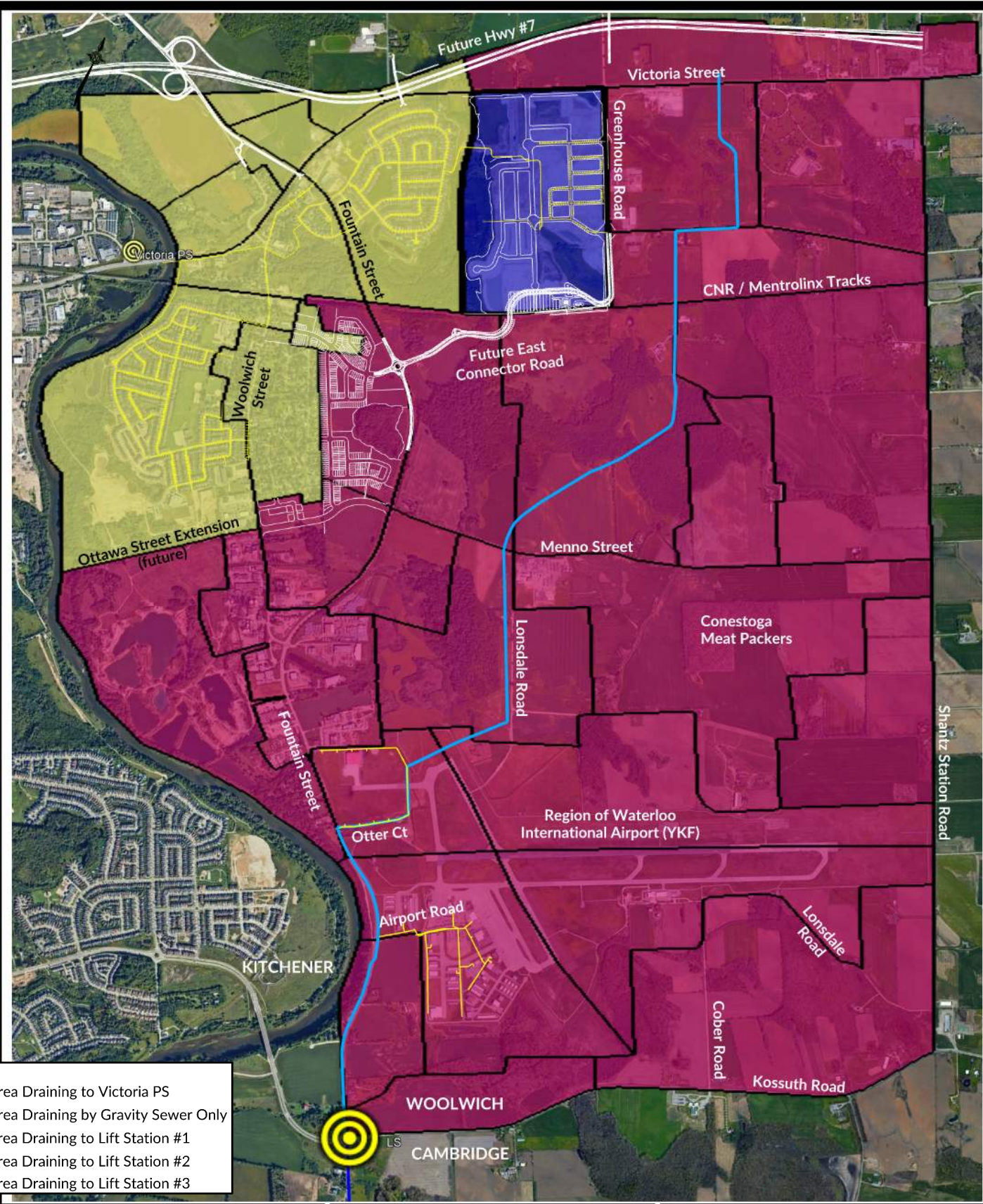
Trunk Sewer Requirements:

- North of Menno Street:
Length = 3.5 km
Avg Depth = 5.4m
- South of Menno South:
Length = 4.1 km
Avg Depth = 8.6m

Pumping / Lift Stations Required:

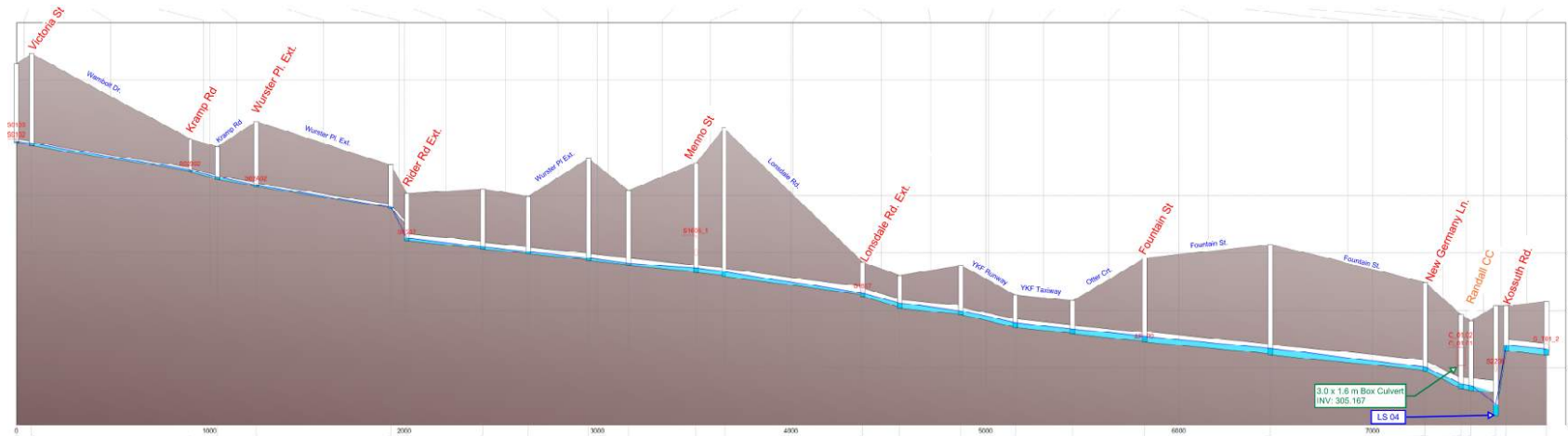
- LS#1: Not required
- LS#2: Not required
- LS#3: Not required
- LS#4: Q=546 L/s | D = 8.9m

"Q" = Design Peak Flow
"D" = Influent Sewer Depth



Alternative #2

Gravity sewers along Trunk Sewer **Alignment 3B** (crossing future YKF Runway 14-32 & Apron VII) and local connecting sewers, all using minimum 0.1% slope per MECP guidelines PLUS local Lift Stations where depth of sewer > 10m. Results in *less deep* sewers along downstream end of trunk sewer, outletting into a large single Lift Station that discharges to the Region sewer outlet on Fountain Street.



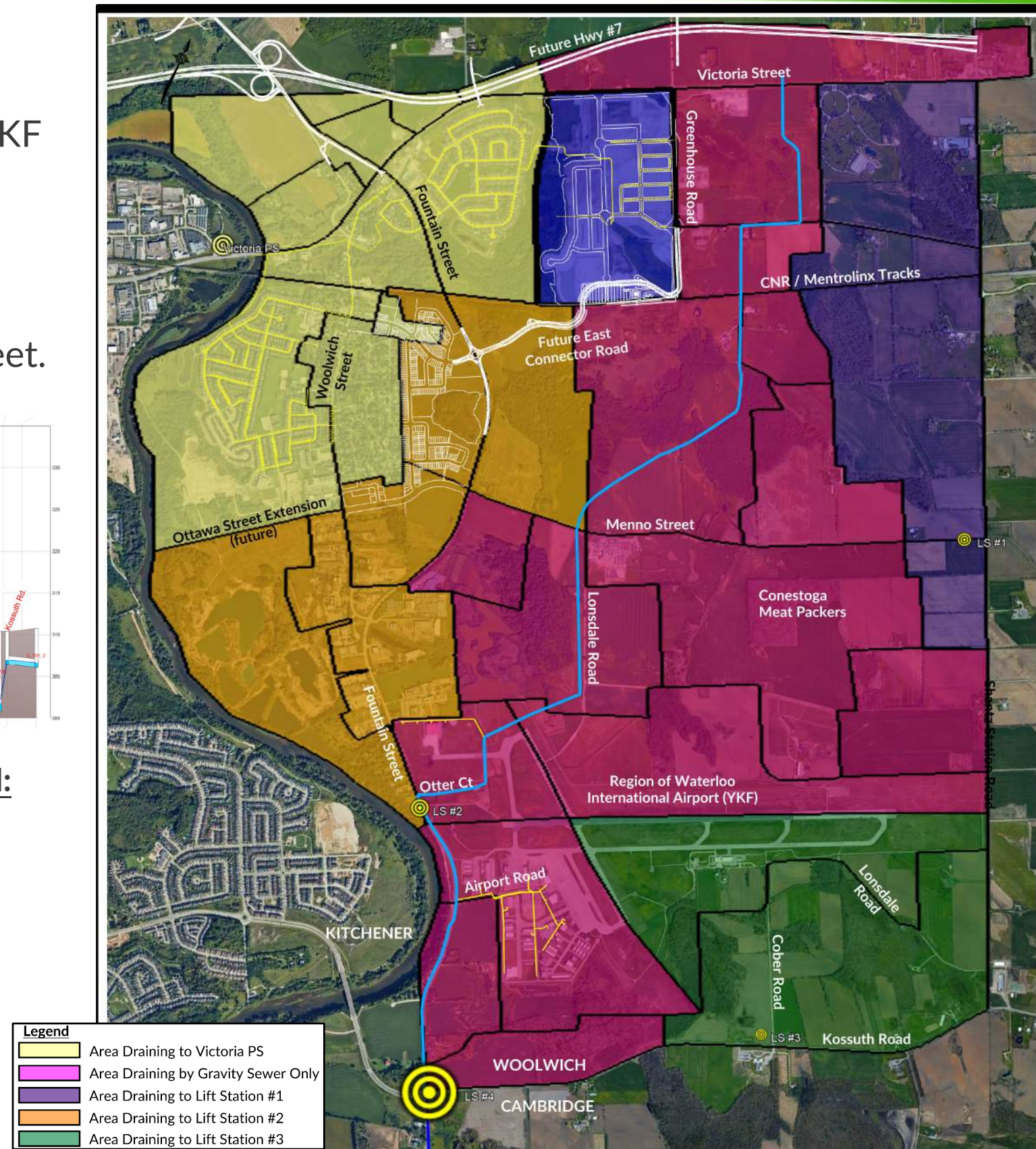
Trunk Sewer Requirements:

- North of Menno Street:
Length = 3.5 km
Avg Depth = 5.4m
- South of Menno South:
Length = 4.1 km
Avg Depth = 6.1m

Pumping / Lift Stations Required:

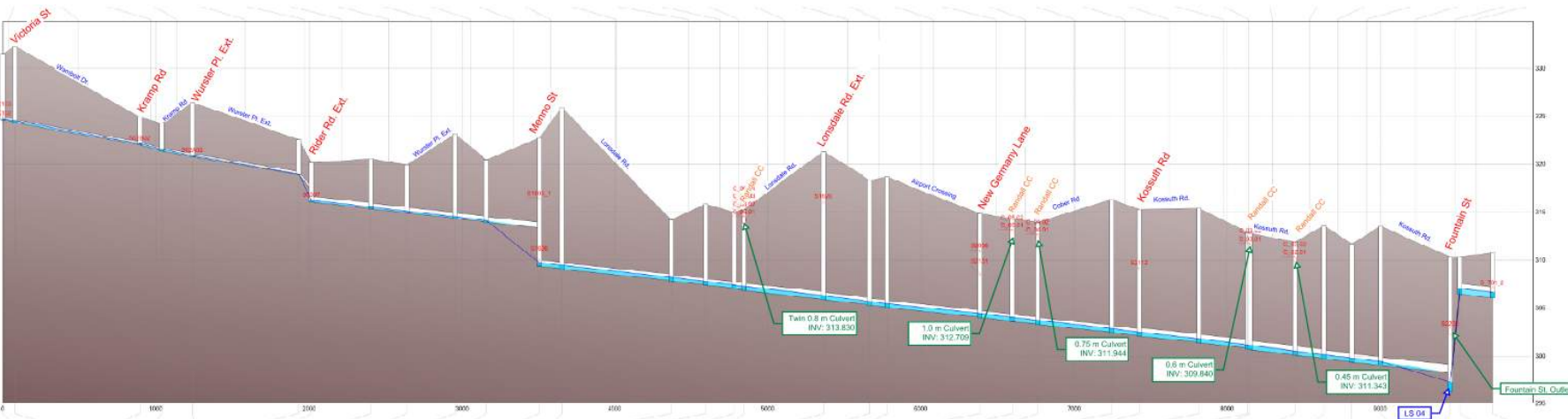
- LS#1: Q=121 L/s | D = 10.9m
- LS#2: Q=157 L/s | D = 9.2m
- LS#3: Q=37 L/s | D =10.1m
- LS#4: Q=546 L/s | D = 7.5m

"Q" = Design Peak Flow
 "D" = Influent Sewer Depth



Alternative #3

Gravity sewers ONLY along Trunk Sewer **Alignment 3D** (crossing YKF Runway 08-26) and local connecting sewers, all using minimum 0.1% slope per MECP guidelines. Results in deeper trunk sewer to downstream end of study area, outletting into a large single Lift Station that discharges to the Region sewer outlet on Fountain Street.



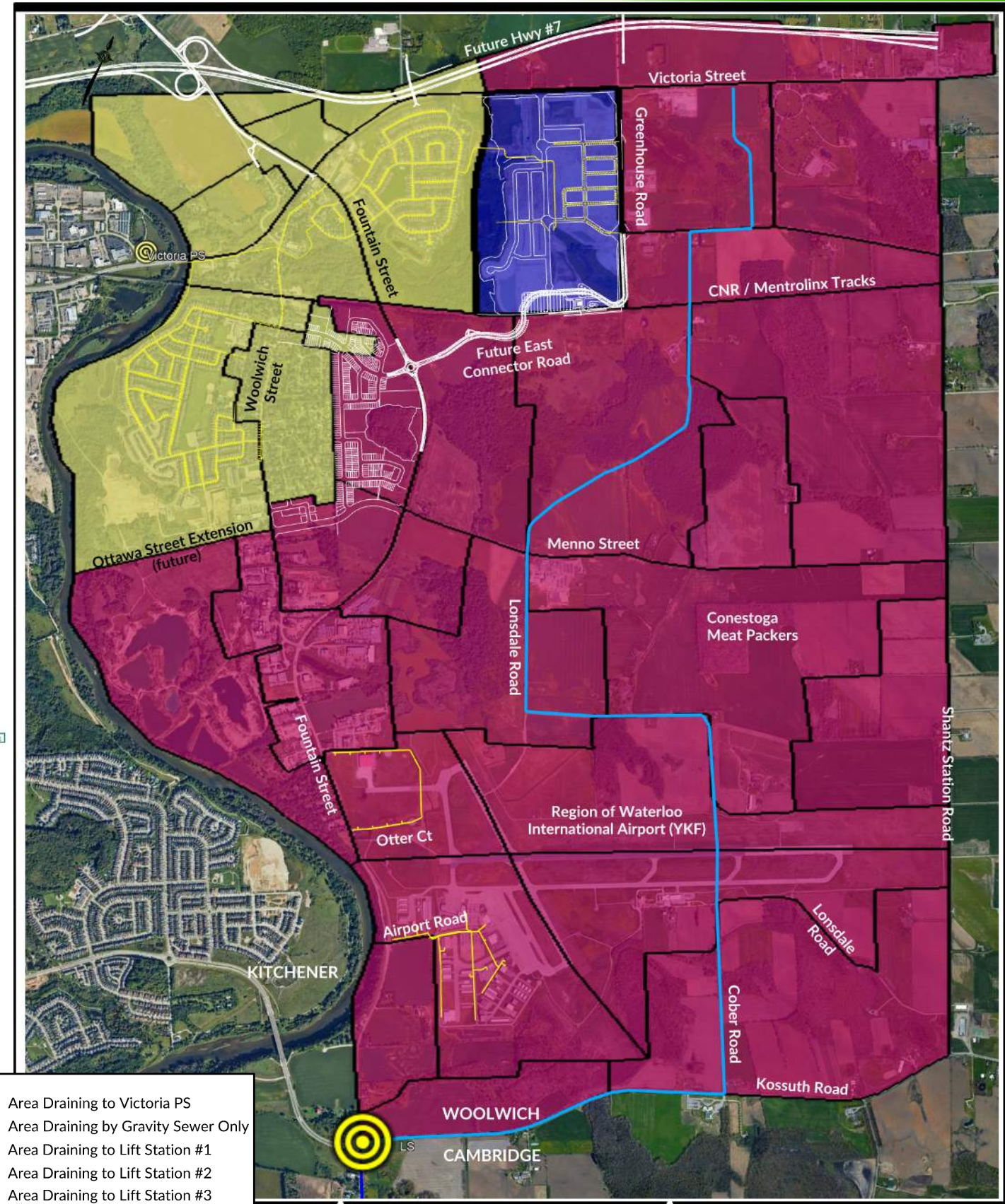
Trunk Sewer Requirements:

- North of Menno Street:
Length = 3.5 km
Avg Depth = 5.4m
- South of Menno South:
Length = 5.5 km
Avg Depth = 12.0m

Pumping / Lift Stations Required:

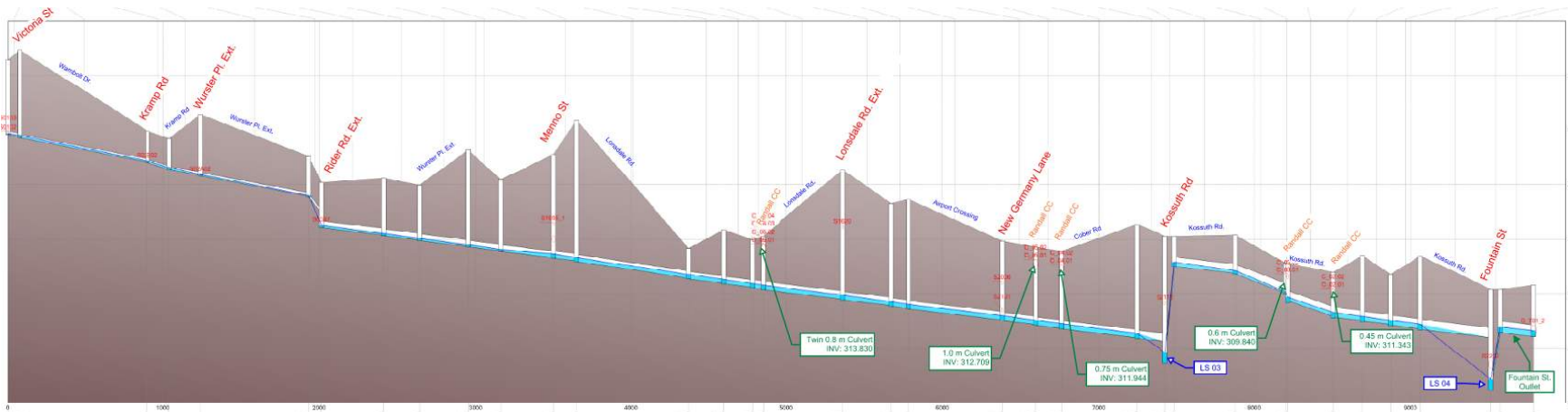
- LS#1: Not required
- LS#2: Not required
- LS#3: Not required
- LS#4: $Q=546 \text{ L/s}$ | $D = 12.2\text{m}$

"Q" = Design Peak Flow
 "D" = Influent Sewer Depth



Alternative #4

Gravity sewers along Trunk Sewer **Alignment 3D** (crossing YKF Runway 08-26) and local connecting sewers, all using minimum 0.1% slope per MECP guidelines PLUS local Lift Stations where depth of sewer > 10m. Results in *less deep* sewers along downstream end of trunk sewer alignment outletting into a large single Lift Station that discharges to the Region sewer outlet on Fountain Street.



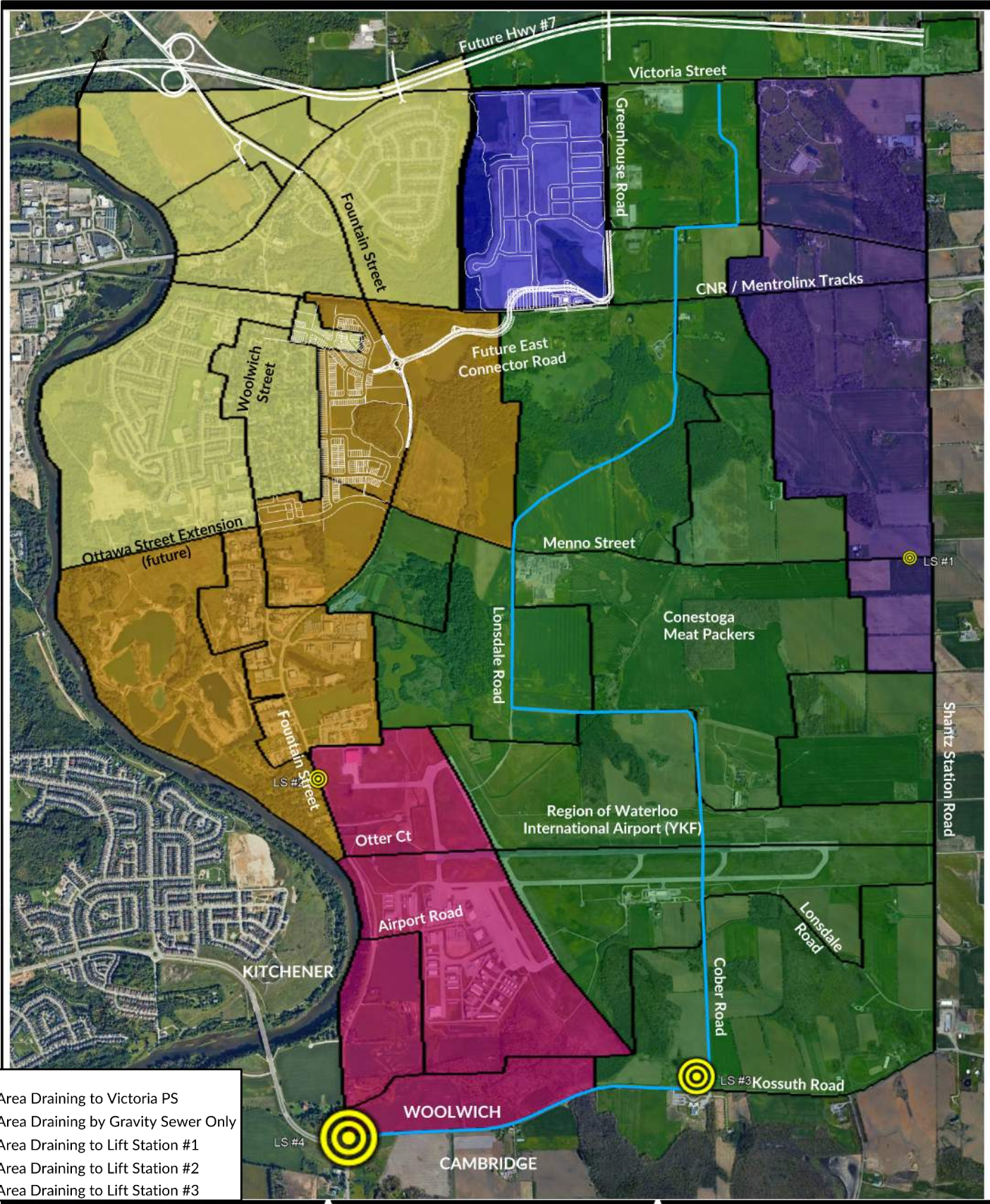
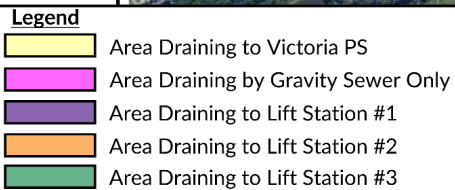
Trunk Sewer Requirements:

- North of Menno Street:
Length = 3.5 km
Avg Depth = 5.4m
- South of Menno South:
Length = 5.5 km
Avg Depth = 6.5m

Pumping / Lift Stations Required:

- LS#1: Q=121 L/s | D = 10.9m
- LS#2: Q=157 L/s | D = 10.4m
- LS#3: Q=324 L/s | D = 9.7m
- LS#4: Q=546 L/s | D = 7.2m

“Q” = Design Peak Flow
“D” = Influent Sewer Depth

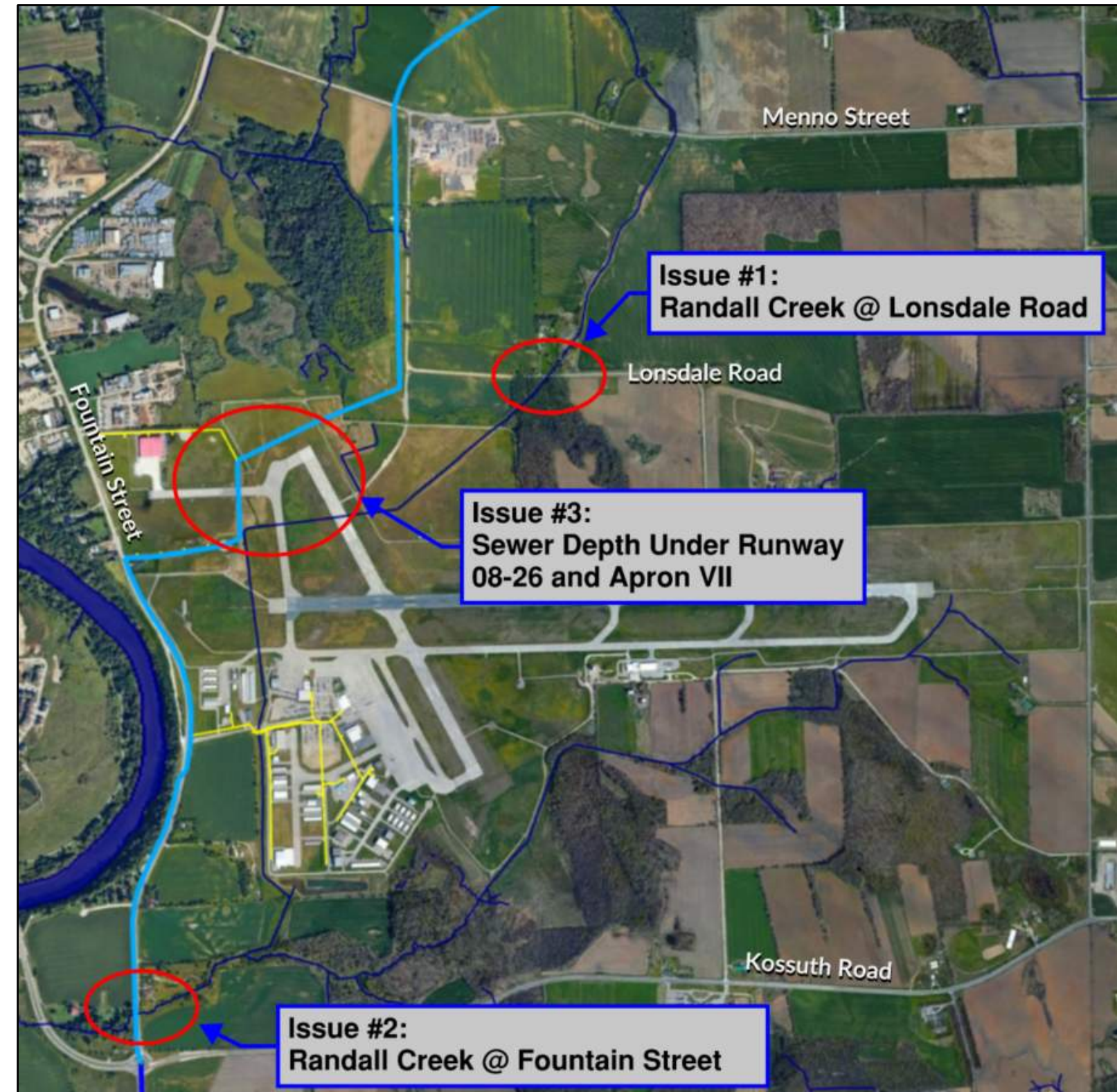


Alignment 3B – Technical Issues

#1 – Randall Creek @ Lonsdale Road

#2 – Randall Creek @ Fountain Street

#3 – Sewer depth under Runway 08-26 and Apron VII



Alignment 3B – Issues: Solution – Part 1

Increase MH spacing and reduce drops thru MH's
to gain more depth on downstream portion along Fountain Street
(Middle Block to Otter = +/- 2,400m)

- Currently: 0.10% with 6cm drops @ 90m spacing = 0.167% slope
- Consider: 0.10% with 3cm drops @ 120m spacing = 0.125% slope
- $0.167\% - 0.125\% = 0.042\% \times 2,400\text{m} = \mathbf{1.01\text{ m}}$

Region of Waterloo Design Guidelines (DGSSMS 2024)

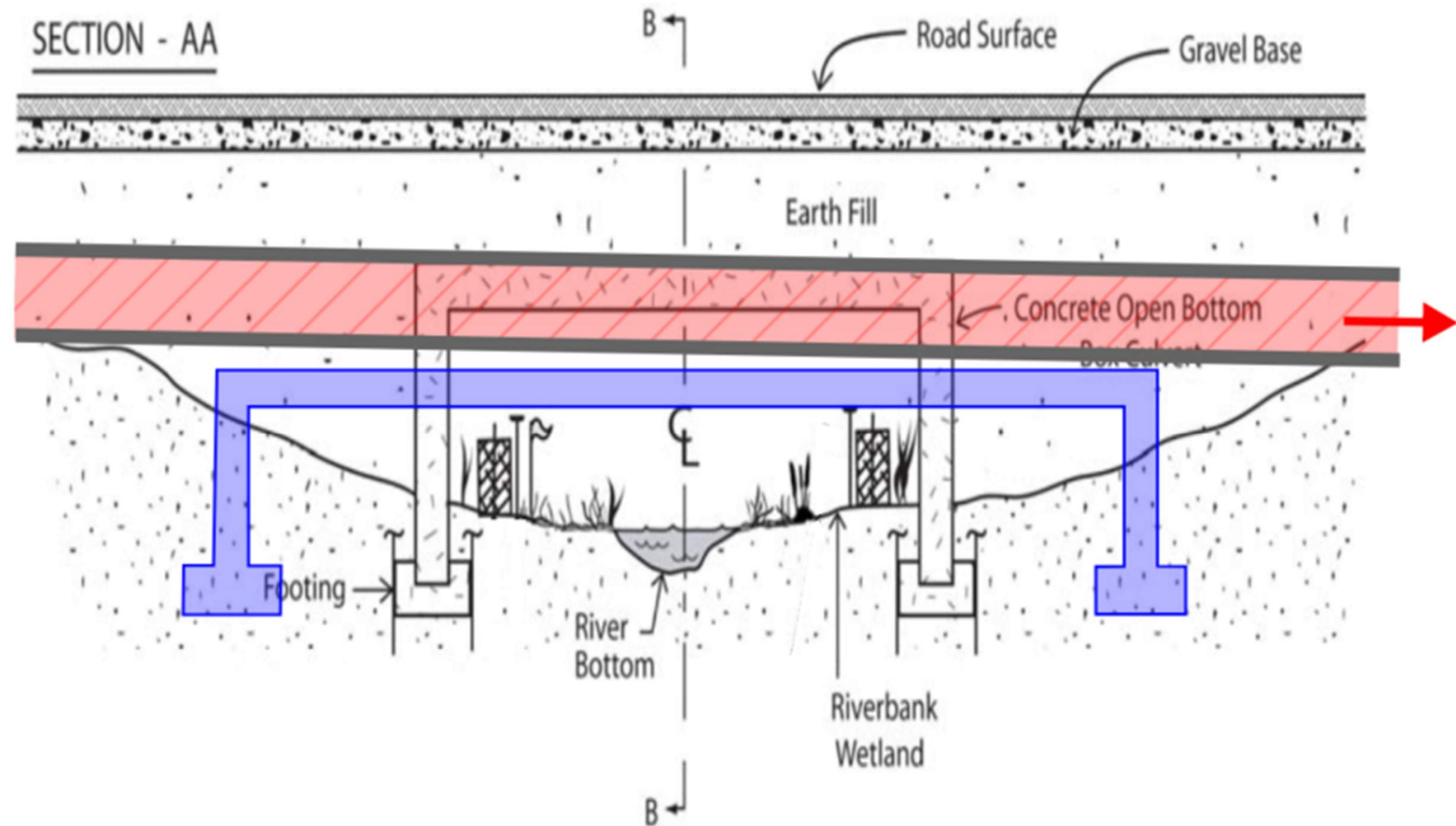
B.3.2.2 Spacing	
The maximum spacing for maintenance holes shall be as follows for the sewer diameters indicated:	
• 200 mm to 450 mm	90 m
• Larger than 450 mm to 900 mm	120 m
• Larger than 900 mm	at approval of Chief Municipal Engineer

MECP Sewer Design Guidelines

Nominal Sewer Size	Minimum Slope m / 100m
200 mm (8 inch) (NPS-8)	0.40
250 mm (10 inch) (NPS-10)	0.28
300 mm (12 inch) (NPS-12)	0.22
350 mm (14 inch) (NPS-14)	0.17
375 mm (15 inch) (NPS-15)	0.15
400 mm (16 inch) (NPS-16)	0.14
450 mm (18 inch) (NPS-18)	0.12
525 mm (21 inch) (NPS-21)	0.10
600 mm (24 inch) (NPS-24)	0.08
675 mm (27 inch) (NPS-27)	0.067
750 mm (30 inch) (NPS-30)	0.058
825 mm (33 inch) (NPS-33)	0.052
900 mm (36 inch) (NPS-36)	0.046
975 mm (39 inch) (NPS-39)	0.041
1050 mm (42 inch) (NPS-42)	0.037

Alignment 3B – Issue #3: Solution – Part 2

Replace Existing Box Culvert – Flatter and Wider



Alignment 3B – Issue #3: Solution – Part 3

Re-align Trunk 3B to Jetliner Court to avoid Apron VII & additional creek crossing

Otter Court Alignment

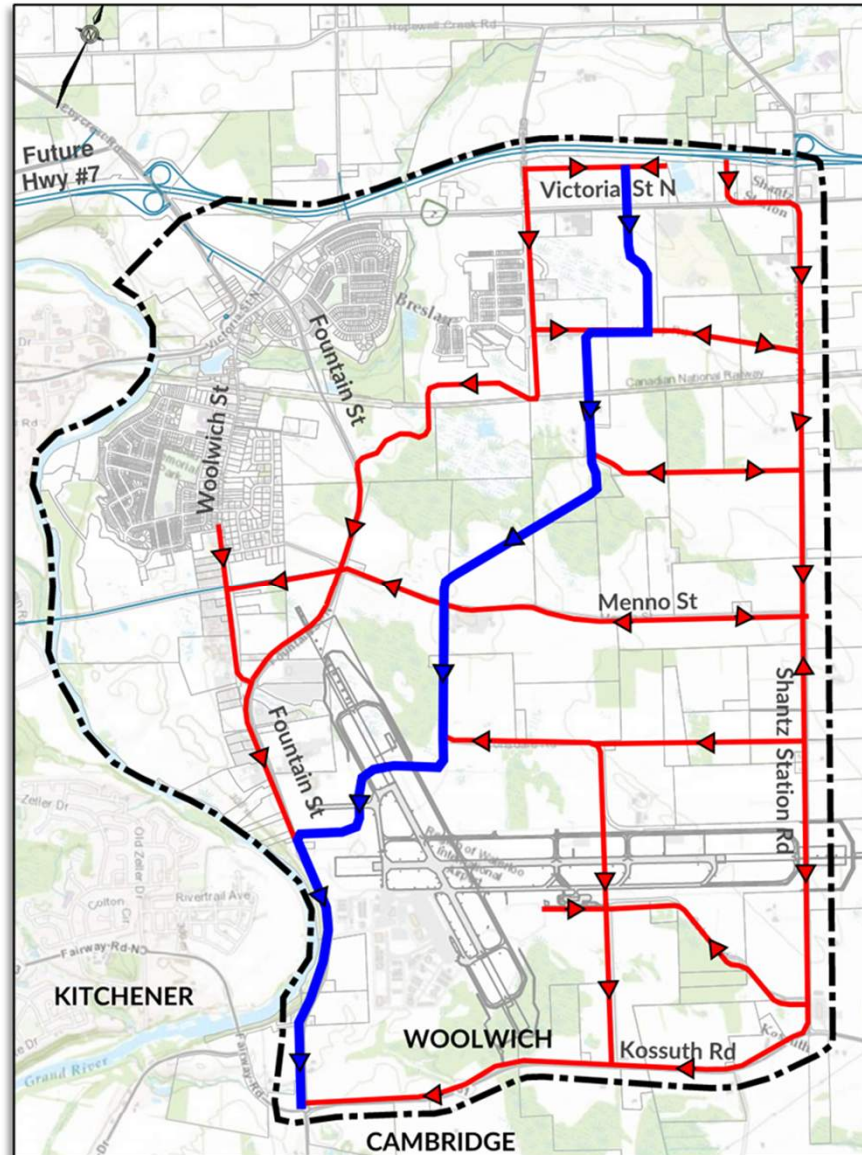


Jetliner Court Alignment



Optimized Alternatives

Alignment 3B



Alternative #1 – (3B) Gravity Sewers Only (Deep) + Lg Lift Station @ Fountain/Kossuth

Alternative #2 – (3B) Gravity Sewers (10m max) + Local LS + Lg Lift Station @ Fountain/Kossuth

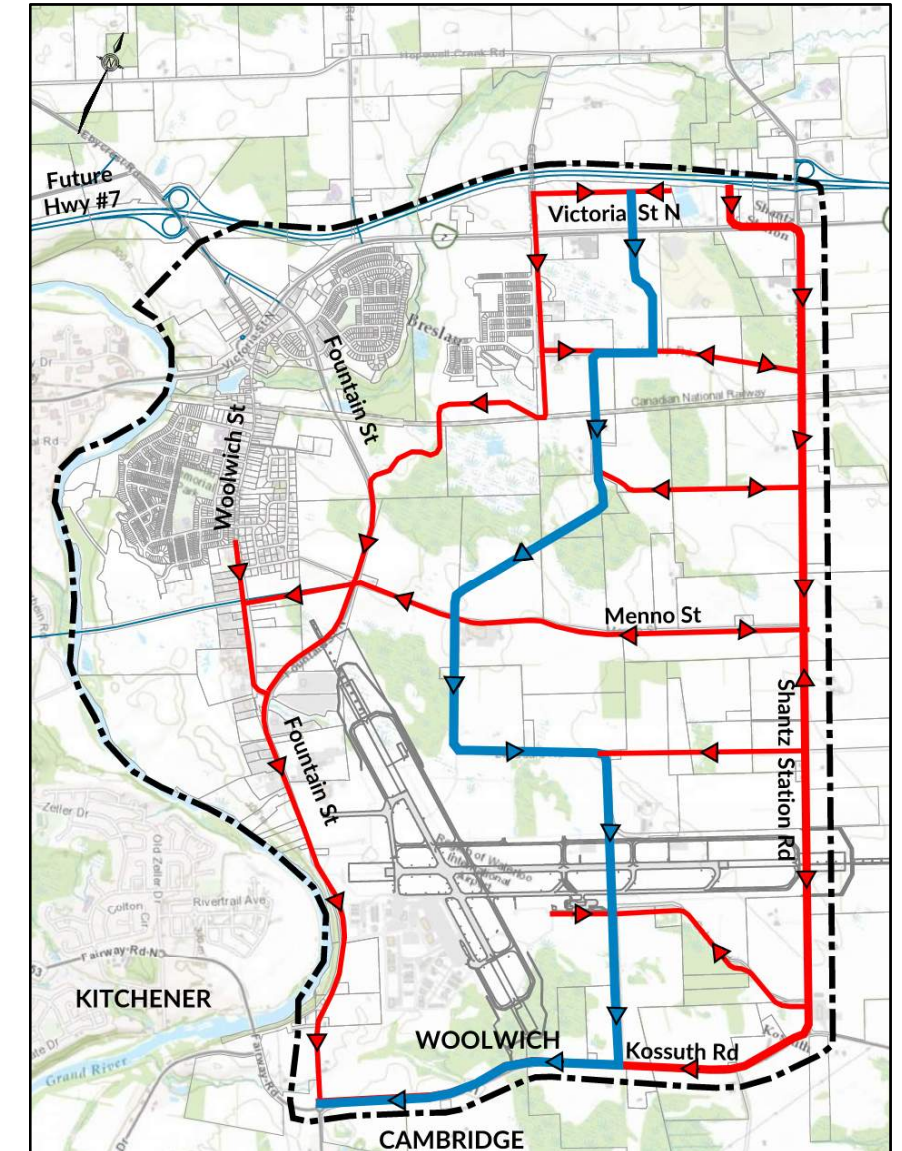
Alternative #3 – (3D) Gravity Sewers Only (Deep) + Lg Lift Station @ Fountain/Kossuth

Alternative #4 – (3D) Gravity (10m max) + Local LS + Lg Lift Station @ Fountain/Kossuth

Alternative #5 – (3B Optimized*)
Gravity Sewers + Local LS

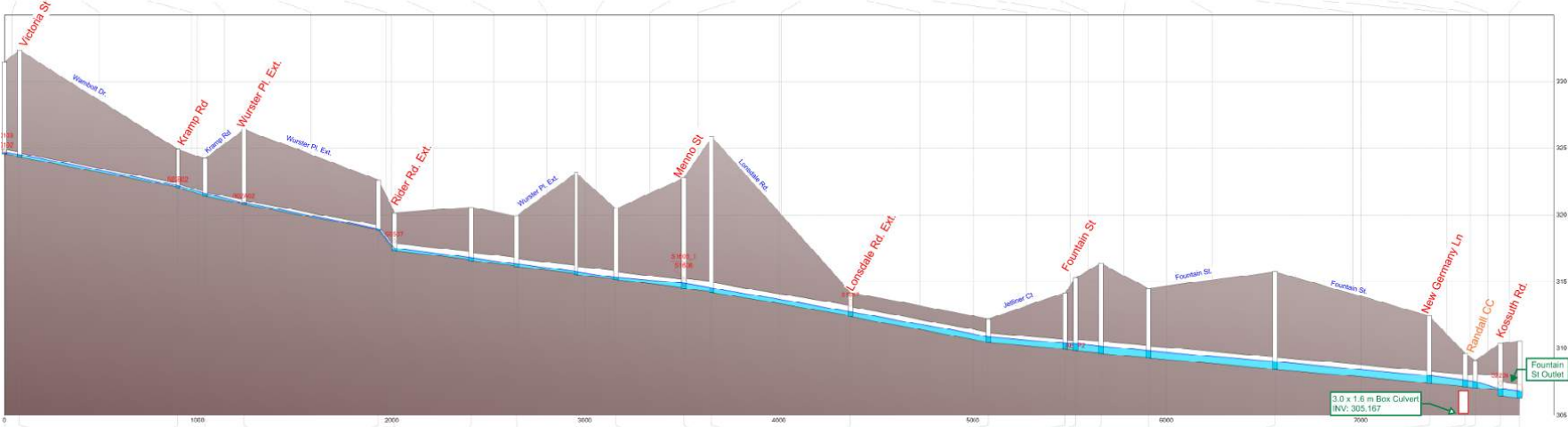
Alternative #6 – (3D Optimized*)
Gravity Sewers + Local LS

Alignment 3D



Alternative #5

Improved version of **Alternative #2**, with **adjusted alignment 3B along Jetliner Court** to avoid crossing Apron VII, using **optimized pipe slopes** per MECP minimum slopes, and requiring **the reconstruction of the existing box-culvert** for Randall Drain at Fountain Street, to allow the trunk sewer pipe to traverse above the culvert and discharge directly into the Region sewer outlet on Fountain Street, via gravity and **without a large Lift Station**.



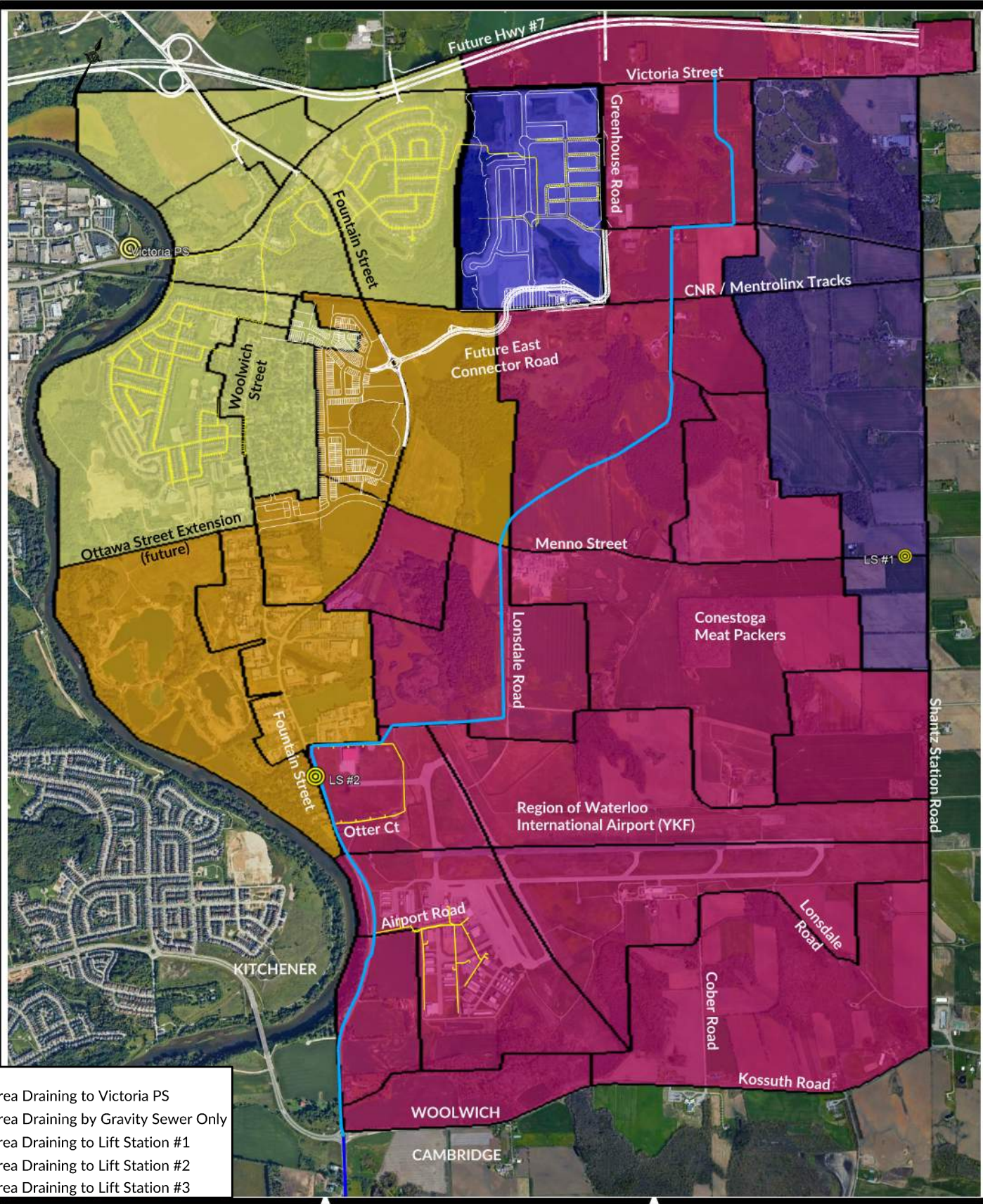
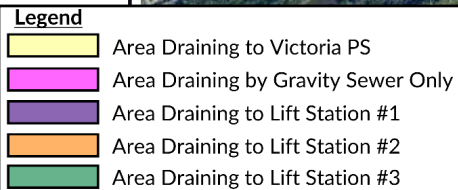
Trunk Sewer Requirements:

- North of Menno Street:
Length = 3.5 km
Avg Depth = 5.4m
- South of Menno South:
Length = 4.2 km
Avg Depth = 5.0m

Pumping / Lift Stations Required:

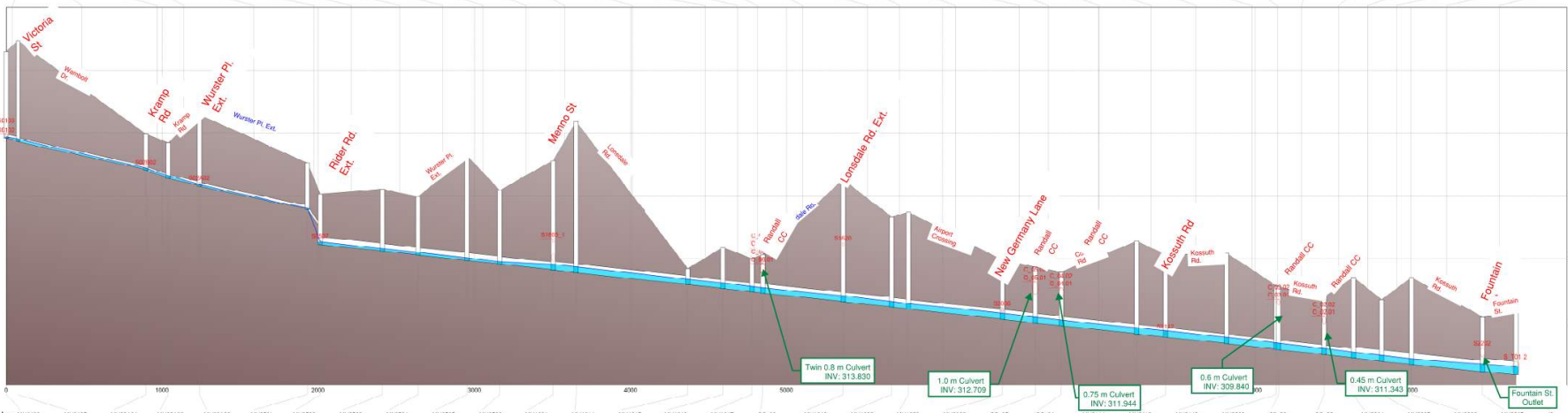
- LS#1: Q=121 L/s | D = 10.9m
- LS#2: Q=157 L/s | D = 9.1m
- LS#3: Q= Not required
- LS#4: Q= Not required

“Q” = Design Peak Flow
“D” = Influent Sewer Depth



Alternative #6

Improved version of Alternative #4, with gravity sewers along Trunk Sewer **Alignment 3D** (crossing YKF Runway 08-26) and local connecting sewers, using *optimized pipe slopes* per MECP minimum slopes, PLUS local Lift Stations where depth of sewer > 10m. Results in *less deep* sewers along downstream end of trunk sewer alignment allowing the sewer to discharge directly into the Region sewer outlet on Fountain Street, via gravity and *without a large Lift Station*.



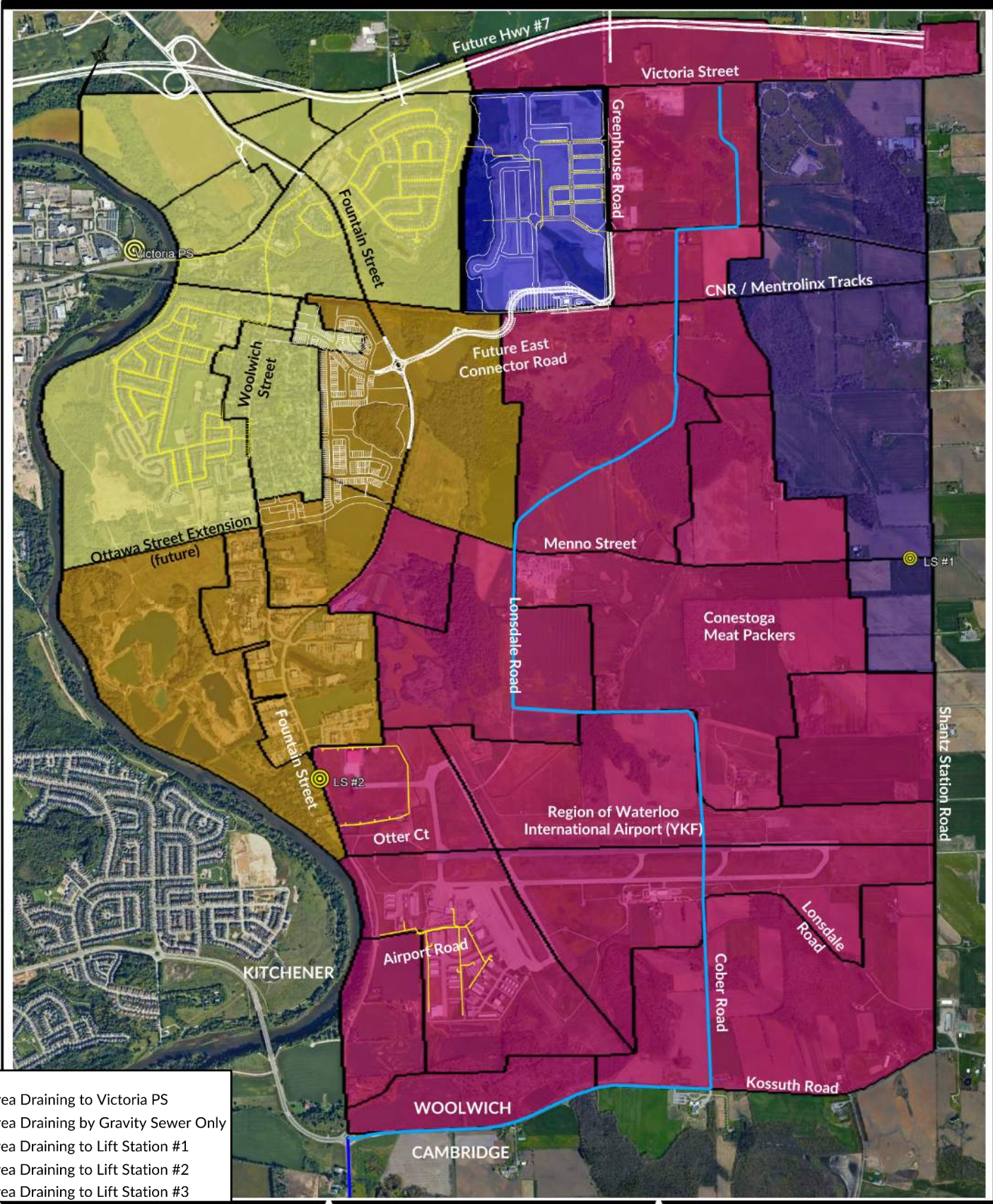
Trunk Sewer Requirements:

- North of Menno Street:
Length = 3.5 km
Avg Depth = 5.4m
- South of Menno South:
Length = 5.5 km
Avg Depth = 6.5m

Pumping / Lift Stations Required:

- LS#1: Q=121 L/s | D = 10.9m
- LS#2: Q=157 L/s | D = 10.4m
- LS#3: Q= Not required
- LS#4: Q= Not required

“Q” = Design Peak Flow
“D” = Influent Sewer Depth



Evaluation of Alternatives

Evaluation Criteria Model:

Social, Natural, Technical & Economic Environments

Key Decision Drivers:

1. Life Cycle Cost – Capital Cost for construction + long term Operations & Maintenance (O&M)
2. Technical Feasibility and Construction Complexity
3. Opportunity Cost – Ability to service key land areas for strategic developments in the East Side Lands

Score	Relative Impact Ranking Scale
	Greatest Benefit / Least Impact Ideal Conditions
	Major Benefit / Lesser Impacts
	Medium Benefit / Impact (Neutral After Mitigation)
	Lesser Benefit / Major Impact
	Least Benefit / Greatest Impact

Evaluation Model – Benefits & Impacts

East Side Lands - Woolwich Sanitary Servicing - Class EA
Evaluation of Alternatives



			Alternative No. 0 ("Do Nothing")		Alternative #1		Alternative #2		Alternative #3		Alternative #4		Alternative #5		Alternative #6	
Description of Alternative			No new sanitary servicing to the East Side Lands (Woolwich) study area		Gravity sewers ONLY along Trunk Sewer Alignment 3B (crossing future YKF Runway 14-32 & Apron VII) and local connecting sewers, all using minimum slope per MECP guidelines. Results in deeper trunk sewer to downstream end of study area, outletting into a large single Lift Station that discharges to the Region sewer outlet on Fountain Street.		Gravity sewers along Trunk Sewer Alignment 3B (crossing future YKF Runway 14-32 & Apron VII) and local connecting sewers, all using minimum slope per MECP guidelines PLUS local Lift Stations where depth of sewer > 10m. Results in less deep sewers along downstream end of trunk sewer alignment outletting into a large single Lift Station that discharges to the Region sewer outlet on Fountain Street.		Gravity sewers ONLY along Trunk Sewer Alignment 3D (crossing YKF Runway 08-26) and local connecting sewers, all using minimum slope per MECP guidelines. Results in deeper trunk sewer to downstream end of study area, outletting into a large single Lift Station that discharges to the Region sewer outlet on Fountain Street.		Gravity sewers along Trunk Sewer Alignment 3D (crossing YKF Runway 08-26) and local connecting sewers, all using minimum slope per MECP guidelines PLUS local Lift Stations where depth of sewer > 10m. Results in less deep sewers along downstream end of trunk sewer alignment outletting into a large single Lift Station that discharges to the Region sewer outlet on Fountain Street.		Optimized version of Alternative #2, using 120m MH spacing and 3cm drops thru MH's, with adjusted alignment along Jetliner Court to avoid crossing Apron VII, and requiring the reconstruction of the existing box-culvert for Randall Drain at Fountain Street, to allow the trunk sewer pipe traverse above the culvert and discharge directly into the Region sewer outlet on Fountain Street, via gravity and without a large Lift Station.		Optimized version of Alternative #4, using 120m MH spacing and 3cm drops thru MH's, and discharge directly into the Region sewer outlet on Fountain Street, via gravity and without a large Lift Station.	
Length Depth of Trunk Sewer - North of Menno					3.5 km Avg 5.4m deep		3.5 km Avg 5.4m deep		3.5 km Avg 5.4m deep		3.5 km Avg 5.4m deep		3.5 km Avg 4.9m deep		3.5 km Avg 5.4m deep	
Length Depth of Trunk Sewer - South of Menno					4.1km Avg 8.6m deep		4.1km Avg 6.1m deep		5.5km Avg 12.0m deep		5.5km Avg 6.5m deep		4.2km Avg 5.0m deep		5.5km Avg 6.6m deep	
Lift Stations Required (Peak Flow Sewer Depth)					LS#4 (546 L/s 8.9m)		LS#1 (121 L/s 10.9m), LS#2 (157 L/s 9.2m), LS#3 (37 L/s 10.1m), LS#4 (546 L/s 7.5m)		LS#4 (546 L/s 12.2m)		LS#1 (121 L/s 10.9m), LS#2 (157 L/s 10.4m), LS#3 (324 L/s 9.7m), LS#4 (546 L/s 7.3m)		LS#1 (121 L/s 10.9m), LS#2 (157 L/s 9.1m), LS#3 (58 L/s 9.5m)		LS#1 (121 L/s 10.9m), LS#2 (157 L/s 10.4m), LS#3 (324 L/s 9.7m)	
No.	Criteria	Indicator	Comments		Comments		Comments		Comments		Comments		Comments		Comments	
1.0 Natural Environment																
			6.0		6.0		6.0		6.0		6.0		6.0		6.0	
2.0 Social Environment																
			4.0		8.0		8.0		8.0		8.0		8.0		8.0	
3 Technical Environment																
			7.0		15.5		13.0		14.0		11.0		19.0		19.0	
4.0 Financial Environment																
			0.0		4.5		4.8		4.1		4.4		6.4		6.4	

Evaluation Model – Natural & Social Environments

No.	Criteria	Indicator
1.0 Natural Environment		
1.1	Impacts to Wetlands and/or Woodlots	Construction within existing wetland limits or (30m buffer) or Woodlots (10m buffer)
1.2	Impacts to Watercourses	Construction immediately affecting an existing watercourse, its buffer areas (15m) or its regulatory floodplain
1.3	Impacts to Woodlots / Natural Features	Construction within existing woodlots or other natural features or their prescribed buffers (10m)
2.0 Social Environment		
2.1	Impacts to Archaeological Features	Construction impacting or in close proximity to areas of known archaeological potential
2.2	Impacts to Cultural Heritage Features	Construction impacting or in close proximity to known cultural heritage features
2.3	Ability to open up adjacent lands to future development	Proximity to known, key development areas (CMP & YKF)

Score	Relative Impact Ranking Scale
	Greatest Benefit / Least Impact Ideal Conditions
	Major Benefit / Lesser Impacts
	Medium Benefit / Impact (Neutral After Mitigation)
	Lesser Benefit / Major Impact
	Least Benefit / Greatest Impact

Evaluation Model – Technical Environment

No.	Criteria	Indicator
3 Technical Environment		
3.1	Coordination with Planned Future Works	Can be constructed in conjunction with future construction contracts for other related infrastructure (eg. roads)
3.2	Minimizes Long Term Operations & Maintenance	Overall requirements to operate Pumping / Lift Stations
3.3	Ability to scale operations / infrastructure to match servicing needs over time.	Ability to efficiently match system capacity with Peak Sanitary Flow Rates over time as upstream developments evolve.
3.4	Minimizes Impacts to Regional Roadways	Length of trunk sewer required along a Regional Road Corridor (vs. a local roadway).
3.5	Minimizes Impacts to Airport (YKF) operations.	Required construction crossings of active runways, taxiways or other airport operations.
3.6	Minimizes / Optimizes Difficult Construction Conditions	Ability to avoid areas of deep construction excavation that would have significant impacts to existing infrastructure (eg. roads) and / or requiring major dewatering efforts.

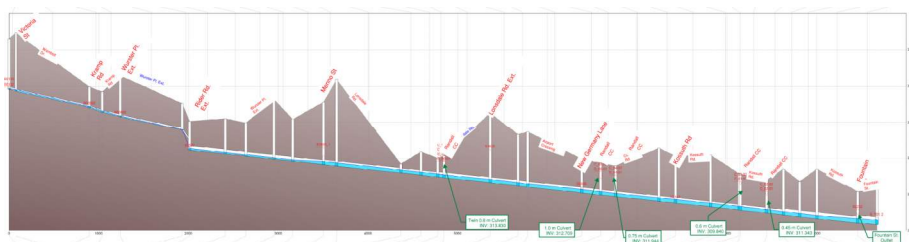
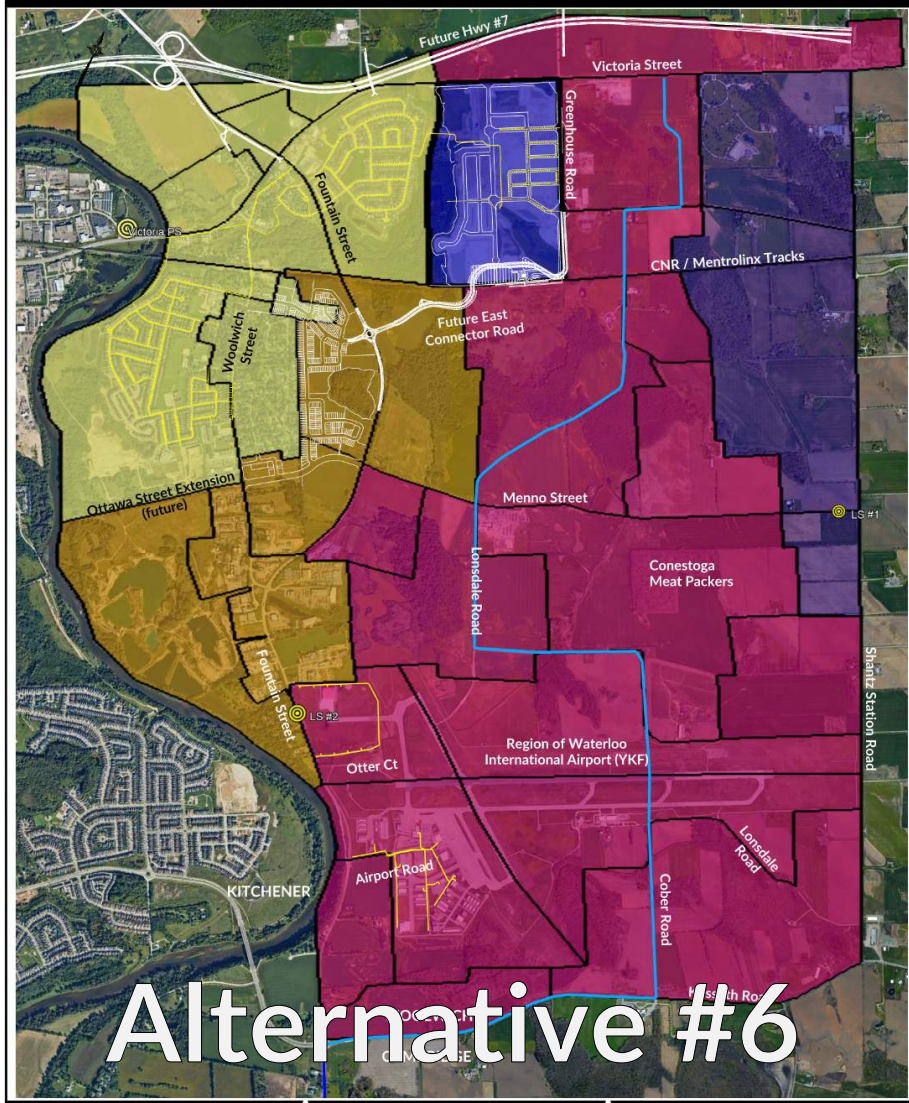
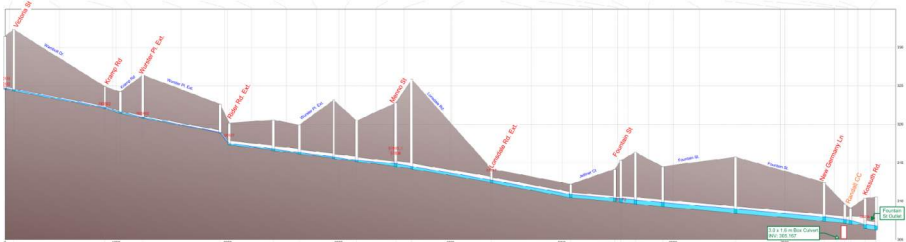
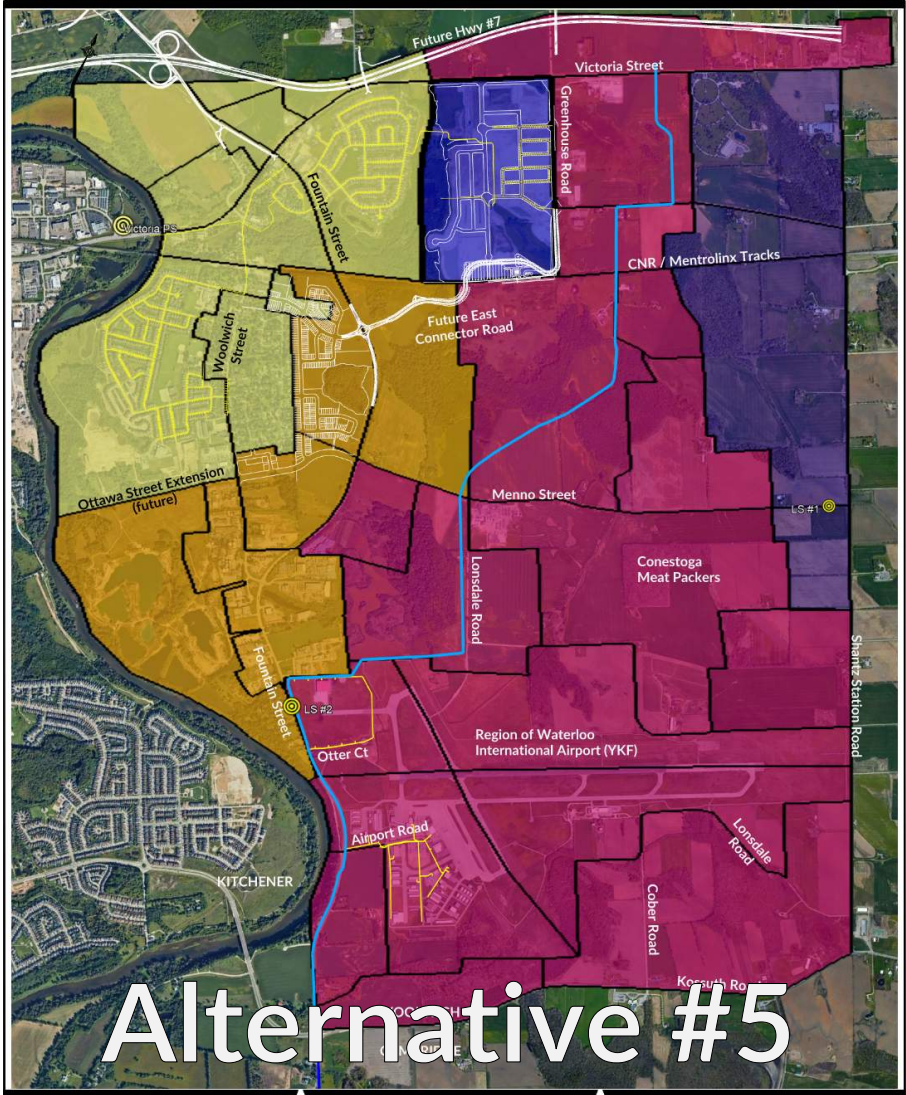
Score	Relative Impact Ranking Scale
	Greatest Benefit / Least Impact Ideal Conditions
	Major Benefit / Lesser Impacts
	Medium Benefit / Impact (Neutral After Mitigation)
	Lesser Benefit / Major Impact
	Least Benefit / Greatest Impact

Evaluation Model – Economic Environment (Cost)

No.	Criteria	Indicator
4.0 Financial Environment		
4.1	Capital Cost	Estimated capital cost for construction of the entire servicing system (sewers and Lift Stations). Score = Avg \$ / Alternative \$
4.2	Initial Capital Costs	Estimated capital cost for initial construction required for Key Development Lands (CMP & YKF) Construction in Years 0-5 / Score = Avg \$ / Alternative \$
4.3	Life Cycle Costs	Net Present Value (NPV) based on assumed construction staging and long term O&M costs (Assume 50year time horizon)
4.4	Opportunity Costs - Impact of delays to opening up KEY lands for immediate development	Measured as % of the 675 ha of net developable land (South of Menno) made immediately available (i.e. CMP, YKF). = Area in 0-5 years, divided by the total development land.

Score	Relative Impact Ranking Scale
	Greatest Benefit / Least Impact Ideal Conditions
	Major Benefit / Lesser Impacts
	Medium Benefit / Impact (Neutral After Mitigation)
	Lesser Benefit / Major Impact
	Least Benefit / Greatest Impact

Preferred Solution?



Next Steps:

- Receive Input from Public, Agencies and Indigenous groups
- Project Team to Complete Detailed Evaluation of Alternatives
- Selection of the “Preferred Solution”
- Preliminary Engineering Details for the Preferred Solution
- Complete EA study & Council Adoption (June 2024)
- Detailed Design (late 2024 – 2025)
- Construction (2025 / 2026)



**East Side Lands:
Woolwich Sanitary Servicing
Class Environmental Assessment**

Thank You

**Public Consultation #2
June 26, 2024**

Please Submit Your Comments
Please provide your comments and contact
information via the EngageWR website.

