DUNNVILLE MASTER SERVICING PLAN

Public Open House

Welcome to this Public Open House for the **Dunnville Master Servicing Plan (MSP).**

We want to hear from you.

Please fill out the comment sheet provided at today's Public Information Centre and leave it in one of the boxes provided.

Additional information is available on the project website at www.haldimandcounty.ca

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Problem / Opportunity Statement

The purpose of this Master Servicing Plan Update is to evaluate Dunnville's long-term infrastructure needs to match the growth in Dunnville over the near-term (10 year) and long-term (25 year) future. Four servicing components will be evaluated through this Master Servicing Plan Update:

WATER	**WASTEWATER**
STORMWATER	**TRANSPORTATION**

Through consultation with participating stakeholders and rightsholders, the Municipal Class Environmental Assessment (MCEA) framework will enable the consideration of options and identify preferred infrastructure solutions that are environmentally, socially, and financially responsible and sustainable.

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Municipal Class Environmental Assessment (MCEA) Process

Phase 1
Problem and/or Opportunity

Data Collection and Review

↓

Identify Problems and Opportunities

↓

Consult with Council and Public

Phase 2
Alternative Solutions

Identify and Evaluate Alternative Solutions

↓

Prepare EA document for comment and review

Consult with Council and Public

Current Project Stage (We Are Here)

Address Public and Stakeholder Comments

Overview

- Under the Environmental Assessment Act, municipalities must consider potential environmental effects before a potential project begins
- The streamlined MCEA process allows municipalities to consider impacts without having to obtain project specific approval under the Environmental Assessment Act

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Future Development

Existing and Future Growth in Dunnville:

Existing (2024)

5,421
Equivalent Units

Residential Growth

1,373
Equivalent Units

Industrial, Commercial, or Institutional (ICI) Growth

49
Equivalent Units

Near-Term (10-Year) & Long-Term (25-Year)

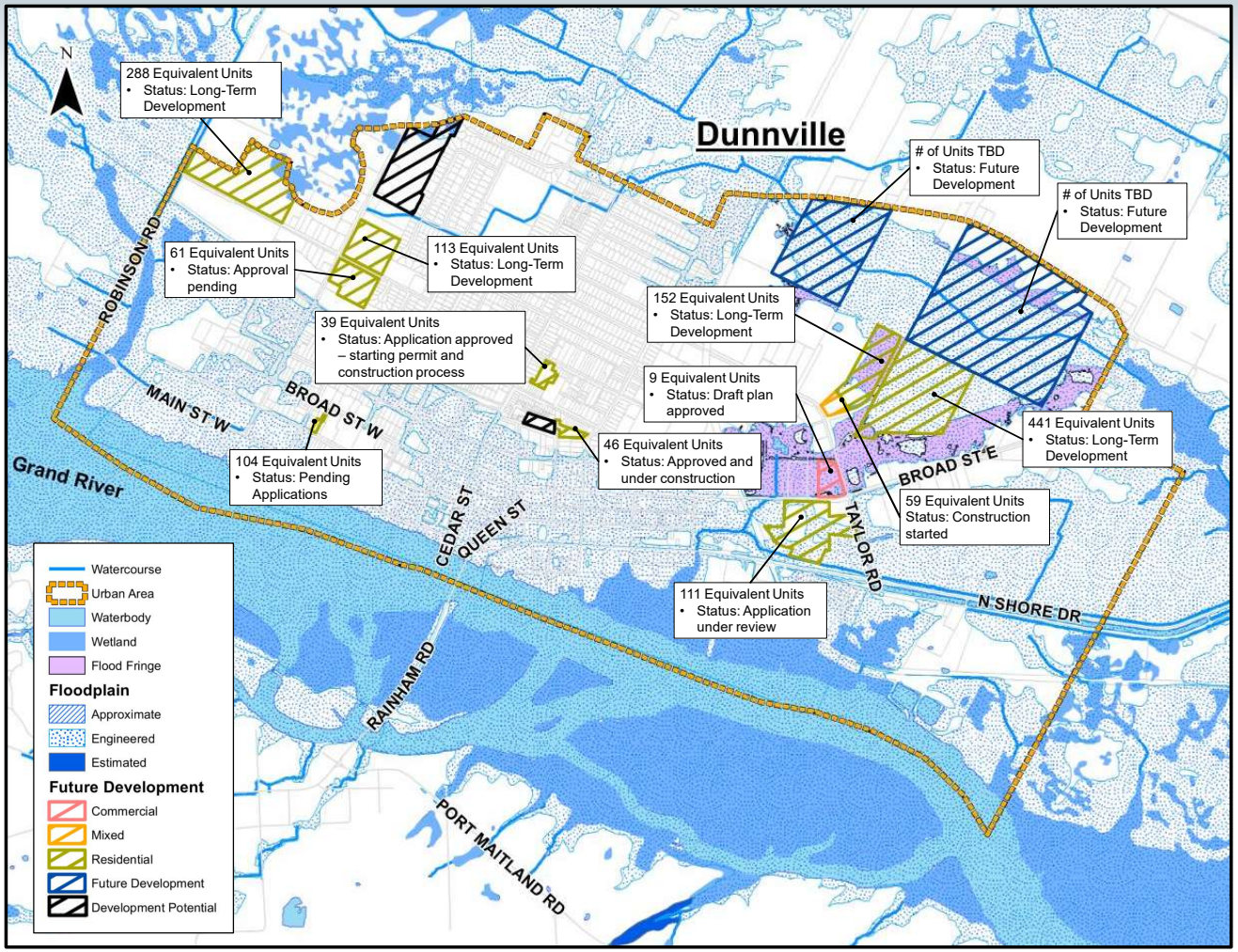
Future Development Growth

1,721
Equivalent Units

Future (> 25-Year)

Total (Existing + Future)

8,564
Equivalent Units



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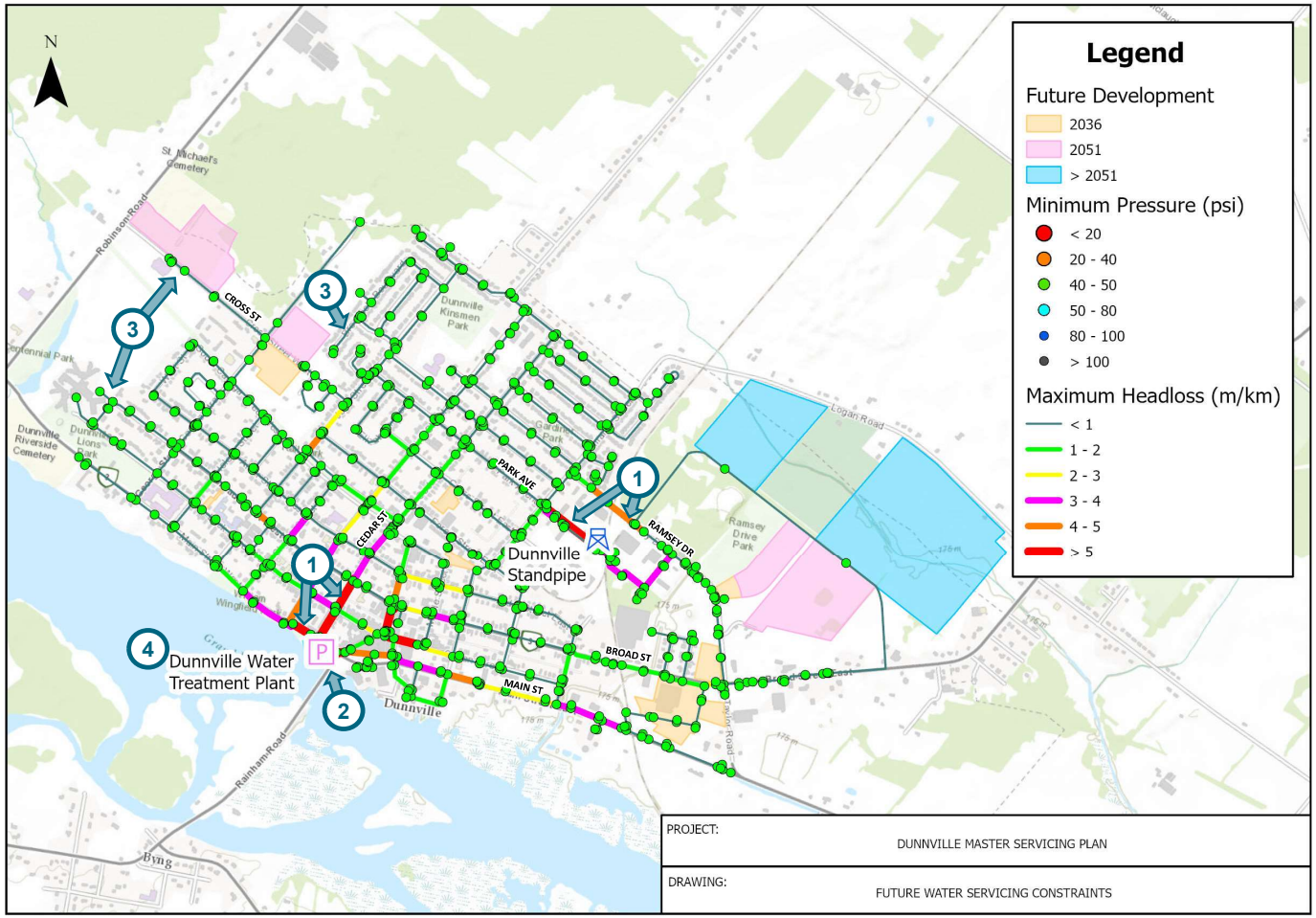
Future Water Servicing Issues and Constraints



1. **Watermains** - System constraints result in **high headlosses** greater than 2 m/km in watermains throughout the distribution system. Areas of particular concern are as follows:
   - Main St
   - Cedar St
   - Park Ave E
   - Ramsey Dr

2. **Water Storage** – Pumped storage from the WTP reservoirs is required to supplement peak demands.

3. **Water Supply** - Areas of higher ground elevations with older, smaller watermains cannot meet Haldimand's fire flow guideline of 100 L/s for residential and commercial properties.

4. **Water Treatment** - During worst case conditions, the maximum available flow at the Dunnville WTP to achieve proper disinfection is insufficient for the future projected growth beyond 2036.

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Evaluation of Water Servicing Alternatives

ALTERNATIVE 1
Do Nothing

- This alternative does not address the existing servicing constraints identified.
- If this alternative is chosen, headlosses > 2 m/km will remain near the south end of Dunnville and near the standpipe. High headlosses can cause damage to Haldimand's critical water infrastructure.

ALTERNATIVE 2
Watermain Upgrades along Main Street with Standpipe Loop

- This alternative addresses the existing servicing constraints identified.
- Construction of watermain upgrades will have an impact on local traffic and pedestrian walkways.
- Challenging construction of watermain upgrades near the standpipe to minimize disruption to operation.
- Requires continued reliance on pumped water storage to meet peak demand.

Capital Costs:
Some Impact to Existing Rate Payers

ALTERNATIVE 3
New Watermain Twin to Existing Standpipe

- This alternative addresses the identified existing servicing constraints.
- Existing standpipe can continue normal operations during construction.
- Lower capital costs.
- Construction of watermain upgrades will have an impact on local traffic and pedestrian walkways.
- Requires continued reliance on pumped water storage to meet peak demand.

Capital Costs:
Some Impact to Existing Rate Payers

ALTERNATIVE 4
New 4.0 ML ET with New Watermain Twin

- This alternative addresses the identified existing servicing constraints and improves minimum system pressures.
- Increased floating storage available and eliminates need to rely on pumped storage.
- Potential impacts to archaeology, cultural heritage, and natural environmental features.
- May require acquisition of new land for the new ET.
- Higher capital costs.

Capital Costs:
Significant Impact to Existing Rate Payers

Additional minor project upgrades are also recommended to further improve distribution system results such as:

- Capacity near the existing WTP discharge
- Fire flows in the west end of Dunnville
- System restrictions due to aging infrastructure

Definitions:

1. WTP: Water Treatment Plant
2. ET: Elevated Tank
3. ML: Mega Liters

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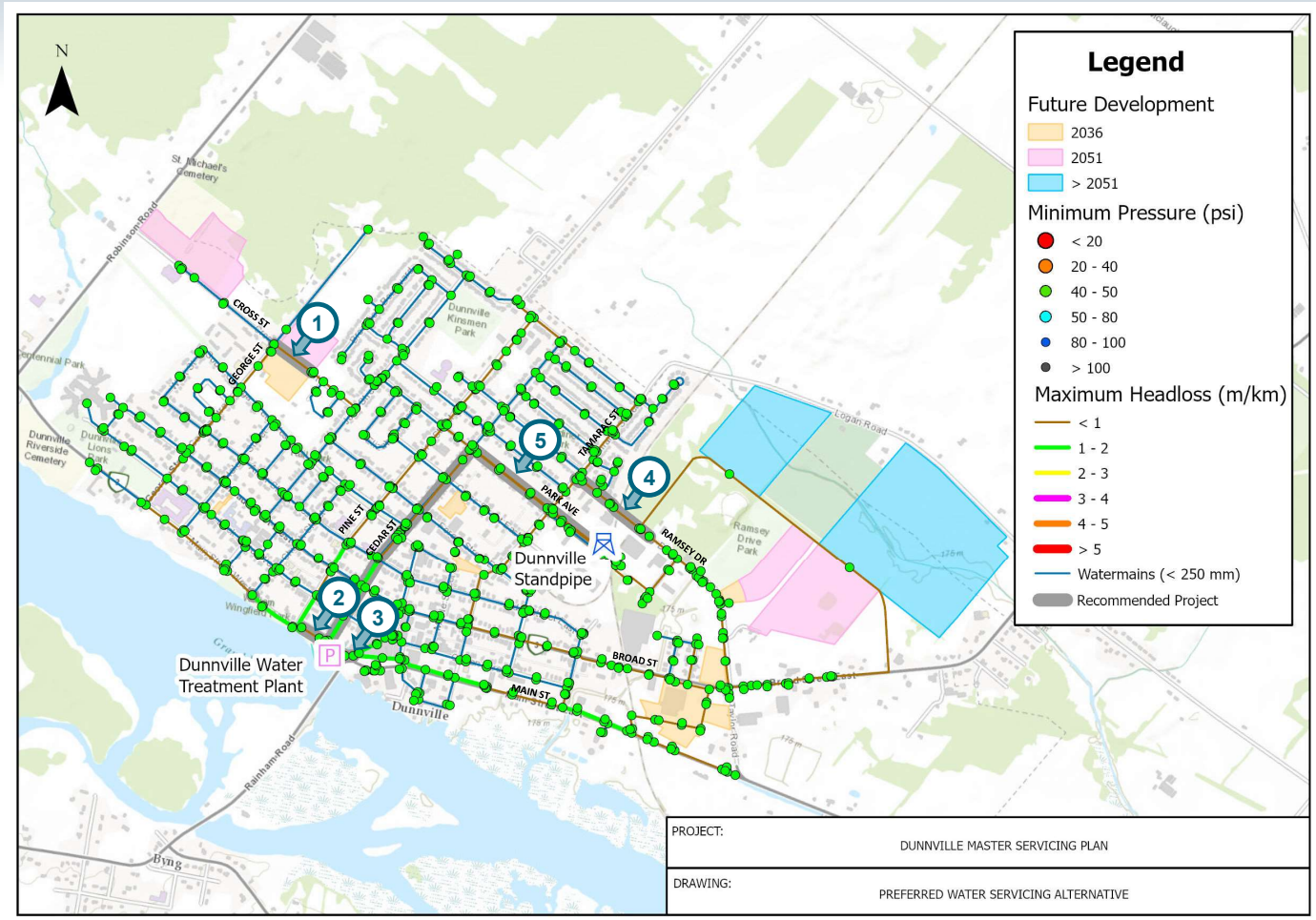
Recommended Water Servicing Alternative



Alternative 3

1. **W-WM-1 –** New 250 mm Watermain Extension on Cross Street from Robin Heights to George Street.
2. **W-WM-2** – Pipe upsizing from 300 mm to 400 mm on Main Street from Pine Street to Cedar Street.
3. **W-WM-3** – Pipe upsizing from 300 mm to 500 mm on Main Street from Cedar Street to the Dunnville WTP. Pipe upsizing from 250 mm to 400 mm on Main Street from the WTP to Queen Street.
4. **W-WM-4 –** Pipe upsizing from 200 mm to 300 mm on Ramsey Drive from property #225 to Tamarac Street.
5. **W-WM-5 –** New 400 mm Watermain Twin from Cedar Street & Main Street to the Dunnville Standpipe.

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Evaluation of Disinfection Alternatives

ALTERNATIVE 1
Do Nothing

- This alternative does not address the concerns for disinfection under future worst-case conditions.

ALTERNATIVE 2
Chlorine Upgrades

- This alternative addresses the concerns for disinfection under future worst-case conditions.
- Minimal change to operations and maintenance from current practice.
- Lower capital costs

- Chlorination has a limited ability to treat water quality variability associated with the Grand River source.
- Difficult constructability. Plant production will be impacted during construction of disinfection upgrades.

Capital Costs:
Some Impact to Existing Rate Payers

ALTERNATIVE 3
Ozone Treatment

- This alternative addresses the concerns for disinfection under future worst-case conditions.
- Robust treatment against contaminants and T&O compounds.
- Resilient system to allow for use of Grand River intake for emergency and planned maintenance activities.

- Additional maintenance for ozone components, including ozone gas monitoring and management systems.
- Difficult constructability. Additional building expansion required, including HVAC upgrades.
- Additional upgrades and measures required to mitigate health and safety concerns.

Capital Costs:
Significant Impact to Existing Rate Payers

ALTERNATIVE 4
UV Treatment

- This alternative addresses the concerns for disinfection under future worst-case conditions.
- Effective disinfection of *Giardia* and *Cryptosporidium.*
- Resilient system to allow for use of Grand River intake for emergency and planned maintenance activities.
- Construction can be staged for minimal impact to plant operation.

- Additional maintenance for UV components, including replacement of mercury-containing lamps.
- Limited treatment of chemical contaminants.

Capital Costs:
Significant Impact to Existing Rate Payers

Definitions:
1. UV: Ultra-violet
2. T&O: Taste and odour
3. Heating, ventilation, and air conditioning

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Recommended Water Servicing Alternative

MSP System Component	Description	Cost Estimate	Funding			Estimated Timing
			County	Developer	DC	
Watermains						
W-WM-1	New 250 mm Watermain Extension on Cross Street from Robin Heights to George Street	Developer Led Project	0%	100%	0%	Near-Term
W-WM-2	Pipe upsizing from 300 mm to 400 mm on Main Street from Pine Street to Cedar Street	$250,000	25%	0%	75%	Near-Term
W-WM-3	Pipe upsizing from 300 mm to 500 mm on Main Street from Cedar Street to the Dunnville WTP. Pipe upsizing from 250 mm to 400 mm on Main Street from the WTP to Queen St.	$330,000	25%	0%	75%	Near-Term
W-WM-4	Pipe upsizing from 200 mm to 300 mm on Ramsey Drive from Property #225 to Tamarac Street	$620,000	25%	0%	75%	Future
W-WM-5	New 400mm Watermain Twin from Cedar Street & Main Street to the Standpipe	$3,410,000	0%	0%	100%	Long-Term
Water Treatment						
W-WT-1	UV Disinfection Upgrades at the Dunnville WTP	TBD Through Ongoing Study				Near-Term
	Total Water Cost	**$4,610,000**				

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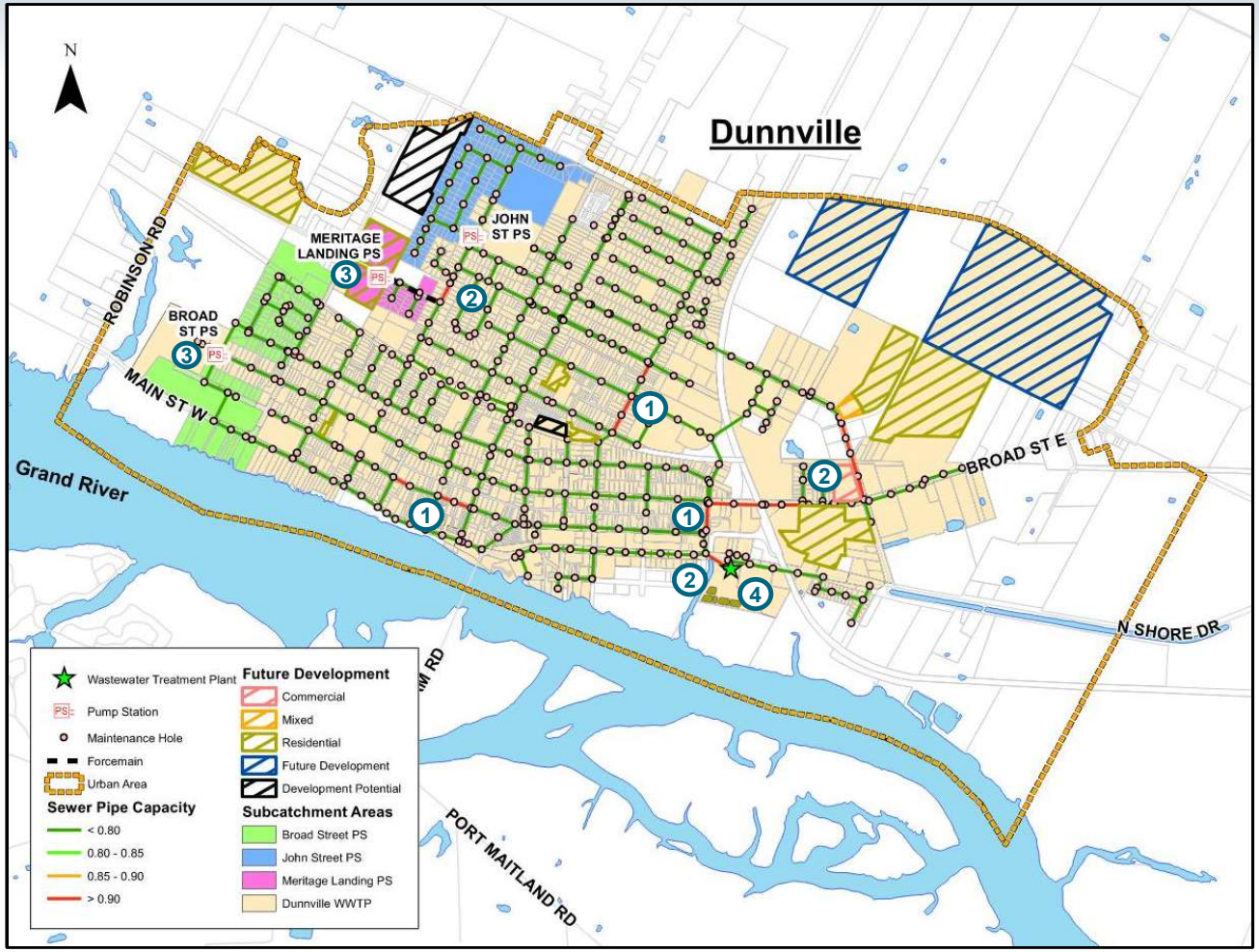
Future Wastewater Servicing Issues and Constraints



1. **Areas with capacity constraints under existing conditions are further affected under future conditions, including gravity sewers in the following areas:**
   - Tamarac Street
   - Lock Street
   - Niagara Street

2. **Additional sections of gravity sewer have capacity constraints under future conditions, including gravity sewers in the following areas:**
   - Broad Street East
   - Main Street East
   - Ramsey Drive
   - Park Avenue West
   - John Street

3. **Pumping Station Capacity:** Under future conditions, the Meritage Landing SPS and Broad St. SPS are operating beyond their pump firm capacity

4. **Wastewater Treatment Plant**: No capacity-related upgrades or expansions are required (flows remain below 85% of the plant's rated capacity over the MSP planning horizon). However, previous studies have determined the treatment performance at the plant is limited by the capacity of aerobic digestion, resulting in inadequate sludge stabilization

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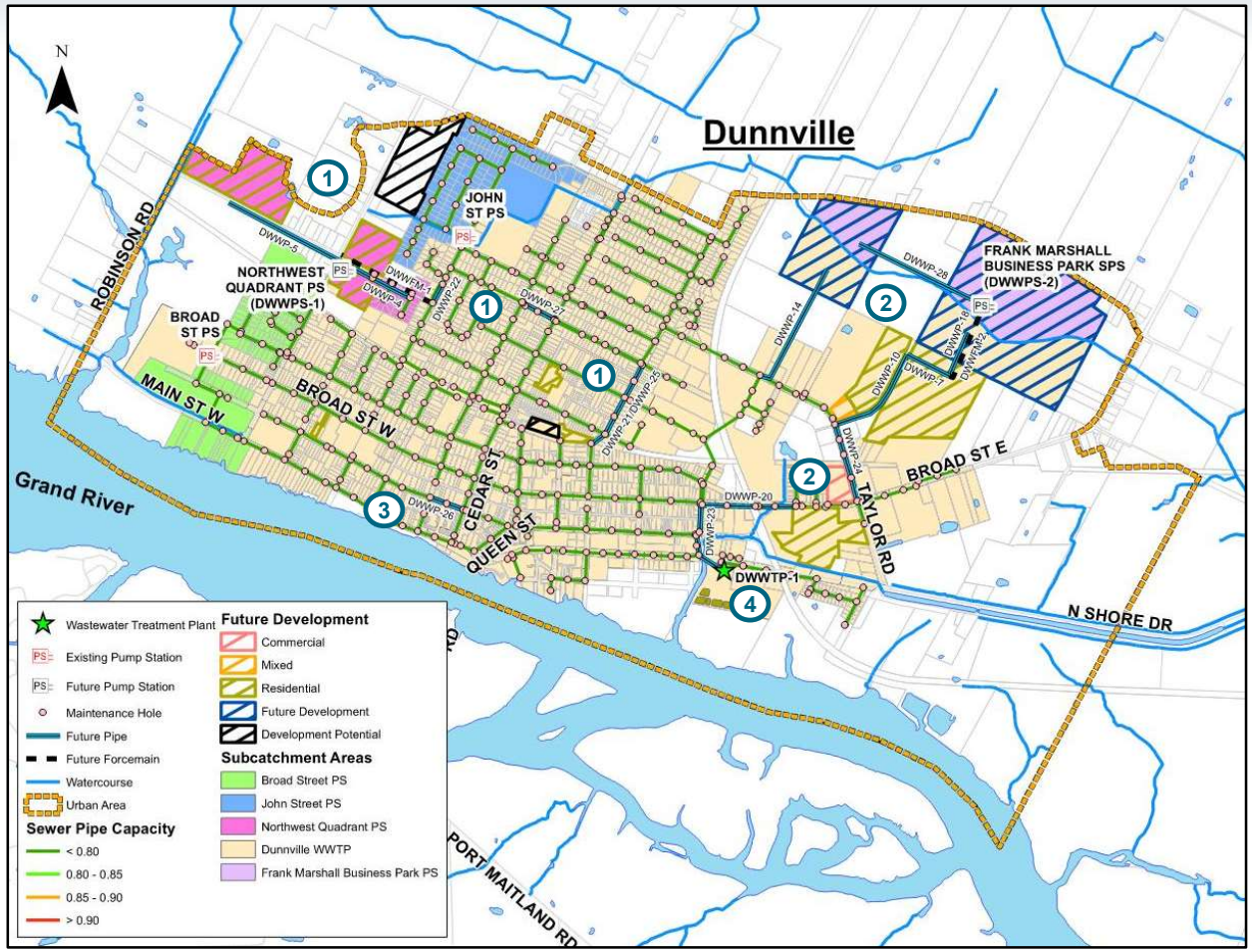
Recommended Wastewater Servicing Alternatives



1 **Northwest Quadrant (NWQ):**

- **New Sanitary Pump Station (SPS) and forcemain** to service new development in the NWQ
- **New sanitary network** on Cross Street West
- **Pipe upgrades** on Cross Street West
- **Slope revisions** along John Street, Park Avenue, and Tamarac Street

2 **Frank Marshall Business Park (FMBP)**:

- **New SPS and forcemain** to service new development north of Maple Creek in the FMBP
- **New sanitary network** through the FMBP
- **Slope revisions and pipe upgrades** along Ramsey Drive, Broad Street E, and Niagara Street

3 **Downtown Area**:

- **Slope revision** on Lock Street West

4 **Wastewater Treatment Plant:**

It is recommended that the County consider proceeding with the addition of aerobic digester capacity to improve sludge stabilization performance and support the long-term operational reliability of the facility.

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Recommended Wastewater Servicing Alternatives Summary

MSP System Component	Description	Cost Estimate	Funding			Estimated Timing
			County	Developer	DC	
Pumping (Sewage Pumping Stations) and Forcemains						
DWWPS-1, DWWFM-1	Future Northwest Quadrant SPS and Forcemain	Funded by Developers	0%	100%	0%	Near-Term
DWWPS-2, DWWFM-2	Future Frank Marshall Business Park SPS and Forcemain	Funded by Developers	0%	100%	0%	Future
Sanitary Mains						
DWWP-4	**Pipe Upgrade:** Cross St West, from Kingfisher Place to west of Robin Heights	$400,000	0%	0%	100%	Near-Term
DWWP-21 / DWWP-25	**Slope Revision:** Tamarac Street between Park Avenue and Alder Street West	$800,000	50%	0%	50%	Near-Term
DWWP-26	**Slope Revision:** Lock Street West between Pine Street and Cedar Street	$300,000	50%	0%	50%	Near-Term
DWWP-5	**New Pipe Network:** Cross Street Development	Funded by Developers	0%	100%	0%	Long-Term
DWWP-22	**Slope Revision:** John Street from Cross Street West to Pine Meadow Court	$300,000	0%	0%	100%	Long-Term
DWWP-27	**Slope Revision:** Park Avenue West from John Street to Pine Street	$400,000	0%	0%	100%	Long-Term
DWWP-10 / DWWP-24	**New Pipe Network:** Jim Gregory Drive – West and East Developments in Frank Marshall Business Park **Pipe Upgrade and Slope Revision:** Ramsay Drive from Jim Gregory Drive to Broad Street East	Funded by Developers	0%	100%	0%	Long-Term
DWWP-14; DWWP-7 / DWWP-18 / DWWP-28	**New Pipe Network:** Logan Road – West and East Developments	Funded by Developers	0%	100%	0%	Future
DWWP-20 / DWWP-23	**Pipe Upgrade:** Broad Street East from Brant Street to Niagara Street.	$800,000	25%	0%	75%	Future
	Slope Revision: Broad Street East from Brant Street to Niagara Street and along Niagara Street from Broad Street East to the WWTP.	$1,000,000	50%	0%	50%	
Wastewater Treatment Plant						
DWWTP-1	Increase aerobic digester capacity	TBD Through Ongoing Study				Long-Term
Total Wastewater Cost		**$4,000,000**				

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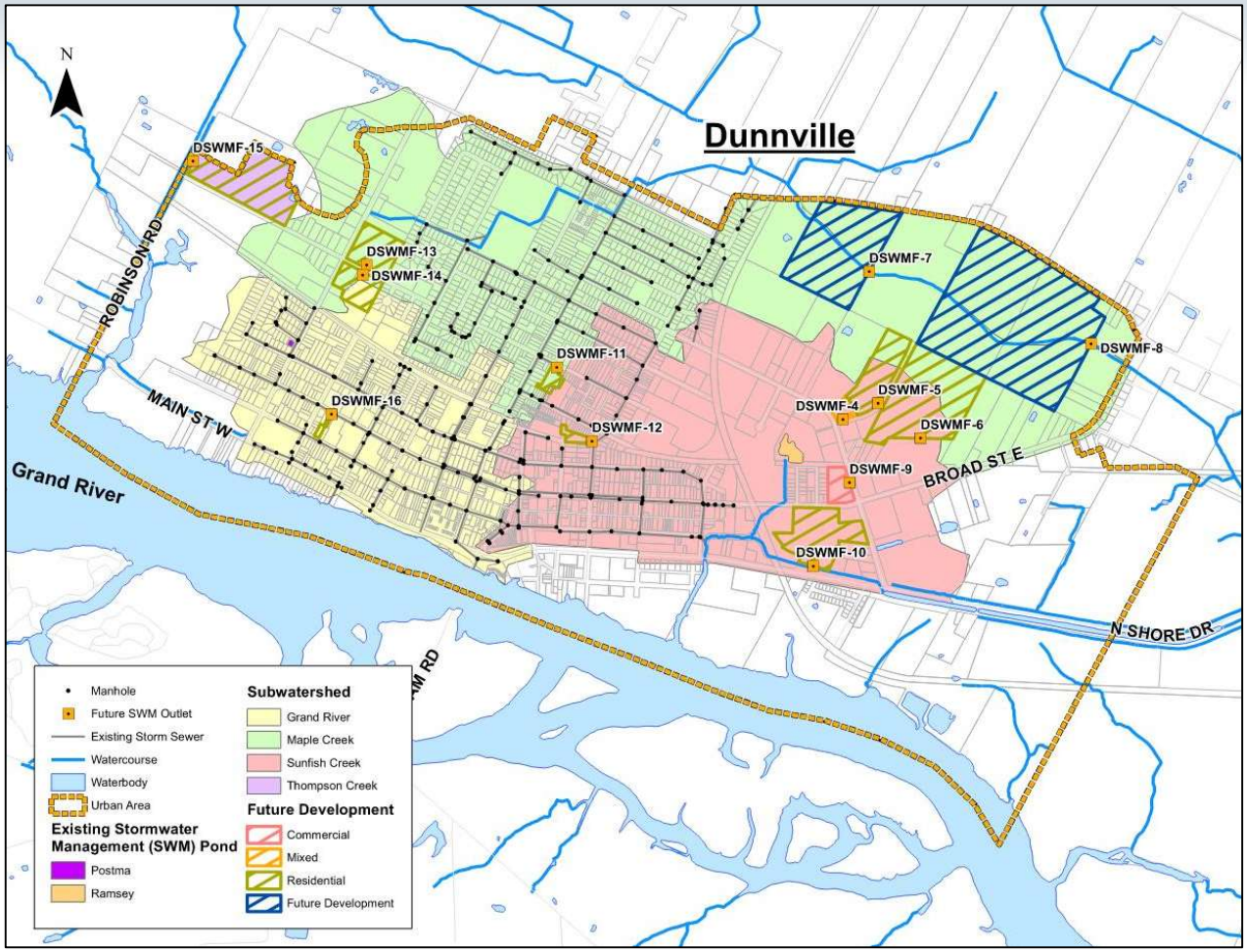
Future Stormwater Servicing Issues and Constraints



1. All future development in Dunnville is **required to control post-development stormwater flows to existing stormwater flow rates** and satisfy required water quality criteria established by the Ministry of the Environment, Conservation, and Parks (MECP).

2. **Future developments will need to adhere to all stormwater management requirements** set by the MECP at the time of approval. The figure to the left shows a proposed storm servicing plan to satisfy these stormwater management requirements

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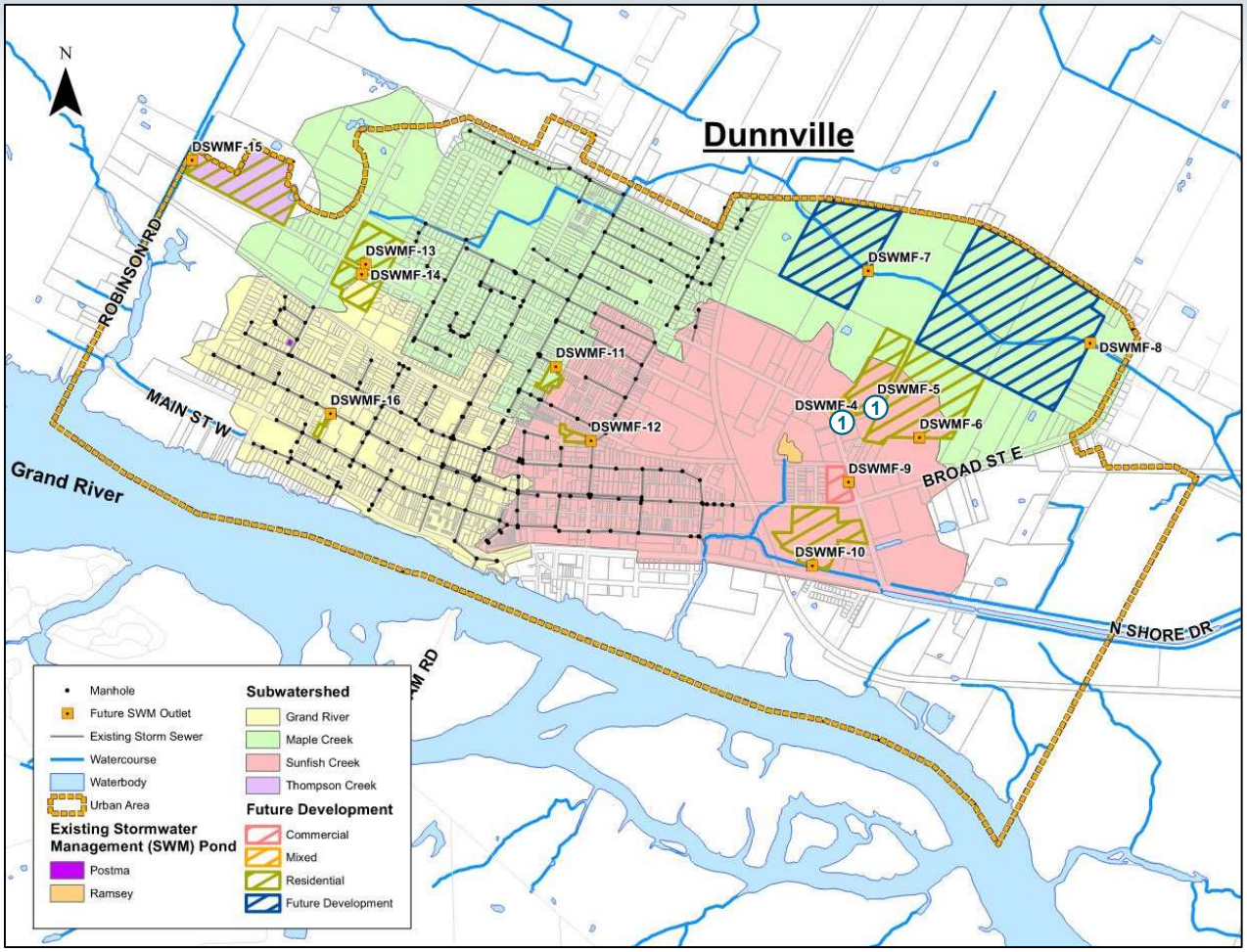
Recommended Stormwater Servicing Alternatives



Stormwater Management Measures for Future Developments:

- Stormwater servicing for future developments must be in compliance with the County's CLI ECA.
- Proposed developments must address the following:
  - Water Balance
  - Water Quality
  - Erosion Control
  - Water Quantity
  - Flood Control
  - Construction Erosion and Sediment Control

1

The Ramsey SWM Pond was expanded in 2024, to accommodate additional flows from the Frank Marshall Business Park. The pond was designed to provide quality and quantity control for 37.06 ha of land, which includes the following development areas:

- Ramsey and Jim Gregory Drive (DSWMF-4)
- Jim Greogry Drive – West (DSWMF-5)

Additional Stormwater Management will be required for the remainder of developments (DSWMF-6 through DSWMF-16)

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Recommended Stormwater Servicing Alternatives Summary

MSP System Component	Description	Cost Estimate	Trigger			Estimated Timing
			County	Developer	DC	
Stormwater Management						
DSWMF-4 to DSWMF-16	Stormwater management for all proposed future developments.	Due to the wide range of site-specific constraints and development design solutions to address the regulatory requirements (i.e., CLI ECA requirements), costs are unable to be estimated for stormwater management on a development basis. Project timing will be driven by respective development.				
Stormwater Mains						
DSS-1 to DSS-4	New Pipe Network: Frank A. Marshall Business Park	Due to the wide range of site-specific constraints and development design solutions to address the regulatory requirements (i.e., CLI ECA requirements), costs are unable to be estimated for stormwater management on a development basis. Project timing will be driven by respective development.				

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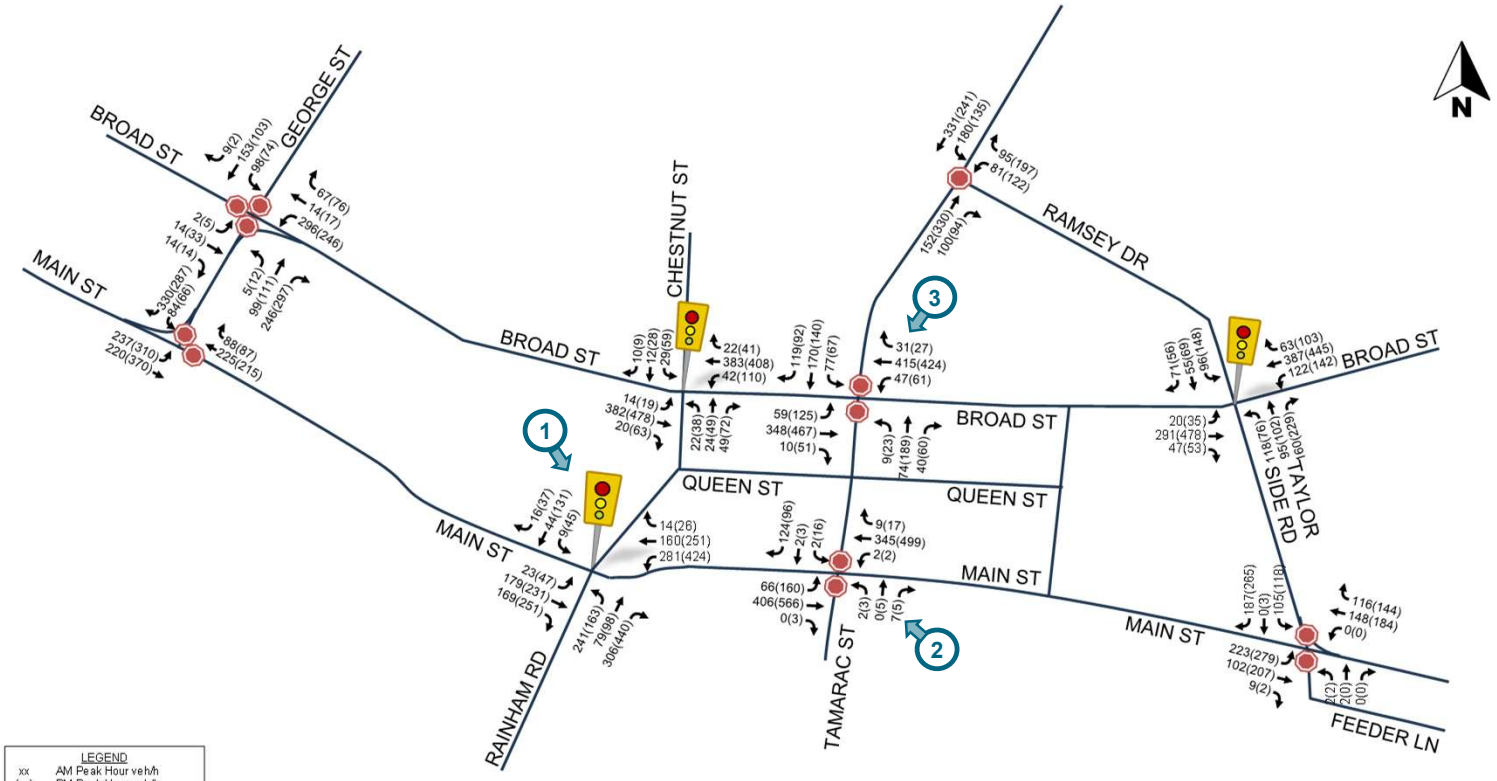
Future Transportation Servicing Issues and Constraints



1. Under future development conditions, the **Main/Queen - Rainham intersection experiences high traffic volumes** and is projected to operate near capacity during the morning and afternoon peak hour.

2. Under future development conditions, the **Main/Tamarac intersection will have a decreased level of service** during the afternoon peak hour.

3. Under future development conditions, the **Broad/Tamarac intersection will have a decreased level of service** during the afternoon peak hour.

Intersection capacity is assessed based on the Ontario Ministry of Transportation (MTO)'s *General Guidelines for the Preparation of Traffic Studies* to determine if intersections are operating acceptably.

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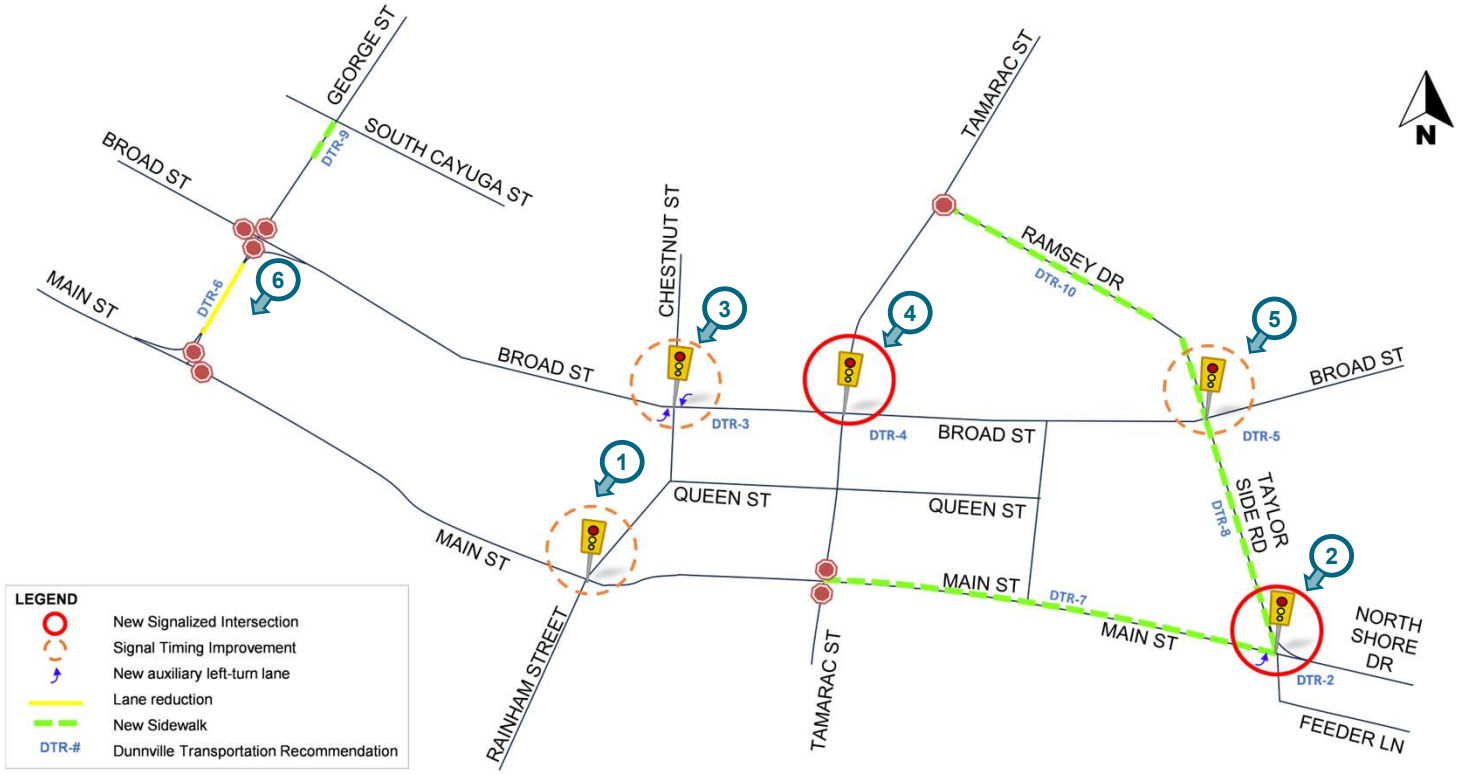
Recommended Transportation Servicing Alternatives



1. **Main Street / Queen Street – Rainham:** Optimize signal timing.
2. **Main Street – North Shore Drive / Taylor Side Road – Feeder Lane: b** Upgrade to a signalized intersection and provide 40m auxiliary eastbound left-turn lane
3. **Broad Street / Chestnut Street:** Optimize timing and coordination with Broad/Tamarac signal, provide 15m eastbound and 30m westbound auxiliary left-turn lanes
4. **Broad Street / Tamarac Street:** Upgrade to a signalized intersection and signal coordination with Broad/Chestnut signal.
5. **Broad Street / Ramsey Drive – Taylor Side Road:** Optimize Signal timing.
6. **George Street:** Reduce cross section to one lane per direction between Broad St & Main St.

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Recommended Transportation Servicing Alternatives

MSP System Component	Description	Cost Estimate	Trigger			Estimated Timing
			County	Developer	DC	
Transportation Component						
DTR-1	Main/Queen-Rainham: Signal timing optimization.	$0	100%	0%	0%	Near-term
DTR-2	Main/Taylor-Feeder: Implementation of a signalized intersection and new auxiliary eastbound left-turn lane	$630,000	100%	0%	0%	Future
DTR-3	Broad/Chestnut: Signal timing optimization and new auxiliary westbound and eastbound left-turn lanes	$40,000	100%	0%	0%	Future
DTR-4	Broad/Tamarac: Implementation of a signalized intersection	$270,000	100%	0%	0%	Future
DTR-5	Broad/Ramsey-Taylor Side: Signal timing optimization	$0	100%	0%	0%	Future
DTR-6	George Street: Reduce the cross section to one lane per direction between Broad Street and Main Street.	$650,000	100%	0%	0%	Future
DTR-7	Main Street: Construction of sidewalk on both sides of the road from Tamarac Street to Tayor	$1,120,000	100%	0%	0%	Near-term
DTR-8	Taylor Side Road: Construction of sidewalk on both sides of the road from Main Street-North Shore Drive to Broad Street	$480,000	70%	30%	0%	Near-term
DTR-9	George Street: Construction of missing 30 m section on the west side of the road, south of South Cayuga Street	$20,000	100%	0%	0%	Near-term
DTR-10	Ramsey Drive: Construction of sidewalk on north side of Ramsey Drive from Broad Street to Cayuga Street.	$30,000	90%	10%	0%	Near-term
	Total Transportation Cost	**$3,570,000**				

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Climate Change Impacts, Mitigation, and Adaptation

Impacts of Climate Change

- **Higher precipitation** from extreme weather
  - Increased **Inflow and Infiltration,** impacting sanitary system and treatment plant performance
  - **Higher flows** and **runoff,** impacting stormwater system performance
  - **Higher nutrient loading** and **algal blooms,** impacting drinking water treatment performance
  - **Flooding** of infrastructure
- **Water level fluctuations** in lakes and groundwater table impacting water supply
- **Evaporation** due to extreme heat
- **Energy usage** during extreme weather

Mitigation and Adaptation

- Once proposed infrastructure alternatives are identified (Phase 2 of the MCEA), climate change mitigation and adaptation measures will be identified and assessed
- **Potential Mitigation and Adaptation Measures:**
  - Working with Conservation Authority, Provincial, and Federal **climate change adaptation initiatives**
  - **Renewable energy generation** and backup power
  - Building **resilient infrastructure**
  - Consideration of **future climate** conditions during the design of infrastructure

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Cumulative Effects and Potential Impacts to Treaty Rights

Haldimand County is home to many Indigenous peoples, including the Six Nations of the Grand River and the Mississaugas of the Credit First Nation. The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), and Canada's commitment to implement these rights under the UNDRIP Act (UNDRIPA), was used as reference to determine the potential impacts of this Master Servicing Plan to the rights of Indigenous People within the project study area:

Rights Relating to Culture, Traditions, Customs, and Spirituality:

UNDRIP Act Article	Impact Considerations	Impact Mitigation
• Articles 11.1, 12.1, 15.1, 24.1, 25, 31.1	• Several areas have **potential for archaeological and cultural heritage** significance. • Natural **features of traditional significance** (e.g., hardwood trees, medicinal plants, animals) may also be present.	• Once preferred project sites are known, a walk-through could be conducted with the affected First Nation community and knowledge learned could be incorporated into the project.

Rights Relating to Decision Making and Participation in Projects:

UNDRIP Act Article	Impact Considerations	Impact Mitigation
• Articles 13.2, 18	• First Nation peoples have the right to participate in decision-making for matters that affect their rights. • There may be interested persons who are unable to understand information and unable to participate in the project.	• The study will **meet the intention of meaningful consultation with First Nation communities**, ensuring all project information can be understood by First Nation peoples. • First Nation peoples can **participate in the evaluation and decision-making** process by providing comments and concerns on proposed projects.

Rights Relating to Development and Economic & Social Conditions:

UNDRIP Act Article	Impact Considerations	Impact Mitigation
• Articles 21.1, 21.2, 23	• First Nation peoples living in Dunnville have the right to improvement of their municipal services without discrimination.	• Areas of Dunnville requiring municipal service improvement will be identified **without discrimination against First Nation communities**. • Appropriate provincial guidelines will be followed for preferred projects so members of First Nation communities will be **protected from municipal services in poor condition**.

Rights Relating to the Environment and Conservation:

UNDRIP Act Article	Impact Considerations	Impact Mitigation
• Articles 29.1, 29.2	• Development of municipal services will be proposed as part of this MSP update, which may have environmental impacts.	• Potential projects will undergo an evaluation process that **considers the protection and conservation of the environment.** • Through consultation, particular **areas or conditions of concerns** held by First Nation communities can be **discussed and incorporated into the project.**

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Get Involved

How Do I Get More Information?

- Complete the sign-in form to join the study mailing list
- Check the website (www.haldimandcounty.ca) for study updates
- If you have questions regarding the study, or have any accessibility requirements in order to participate in this project, please contact one of the individuals below at any time:

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