



Municipalité de
RUSSELL
Township

WELCOME

Water & Wastewater Master Plan Update

Public Information Centre

Wednesday, May 8^h, 2024

6:00 pm to 8:00 pm

Council Chambers, Township of Russell Office

717 Notre -Dame St, Embrun, ON K0A 1W1

Key Instructions for this Meeting

Public Information Centre

1

Please Sign in
Meeting is a “Drop-in” format.

2

Review Display Materials
Our representatives will be pleased to discuss the study, or any questions or concerns that you may have.

3

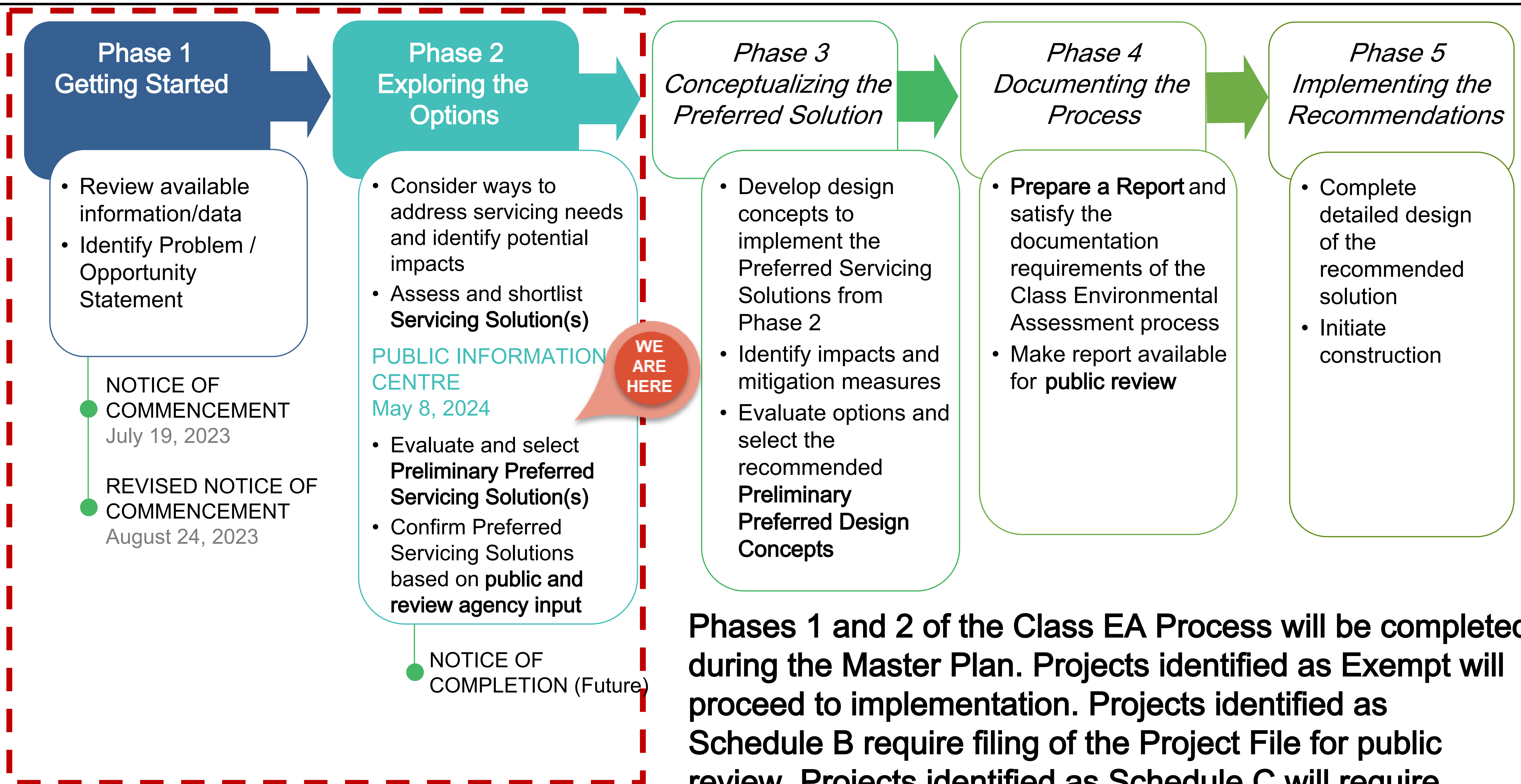
Complete a Comment Sheet
Drop off your completed Comment Sheet in the Box tonight or return it to the people shown on the Comment Sheet by
May 29, 2024

Master Plan Context

- Master Plans are long range plans that integrate a high -level review of infrastructure servicing requirements for a broad study area with order of magnitude implementation costs.
- Master Plans identify individual infrastructure projects distributed geographically across the study area, to be implemented gradually over time.
- Master Plans fulfill **Phase 1 and Phase 2 of the Municipal Class Environmental Assessment** planning process.
- The Water & Wastewater Master Plan Update is being conducted under **Approach 1 for Master Planning** . The work completed under the Master Plan will provide supporting information for Schedule B and C projects. Recommended Schedule B projects will require public review of the project file while Schedule C projects will require additional investigation to fulfill Phases 3 and 4 of the Municipal Class EA process.
- **A Master Plan Report will be prepared** at the end of the study and made available for public review.



Overview of Activities under the Class EA Process

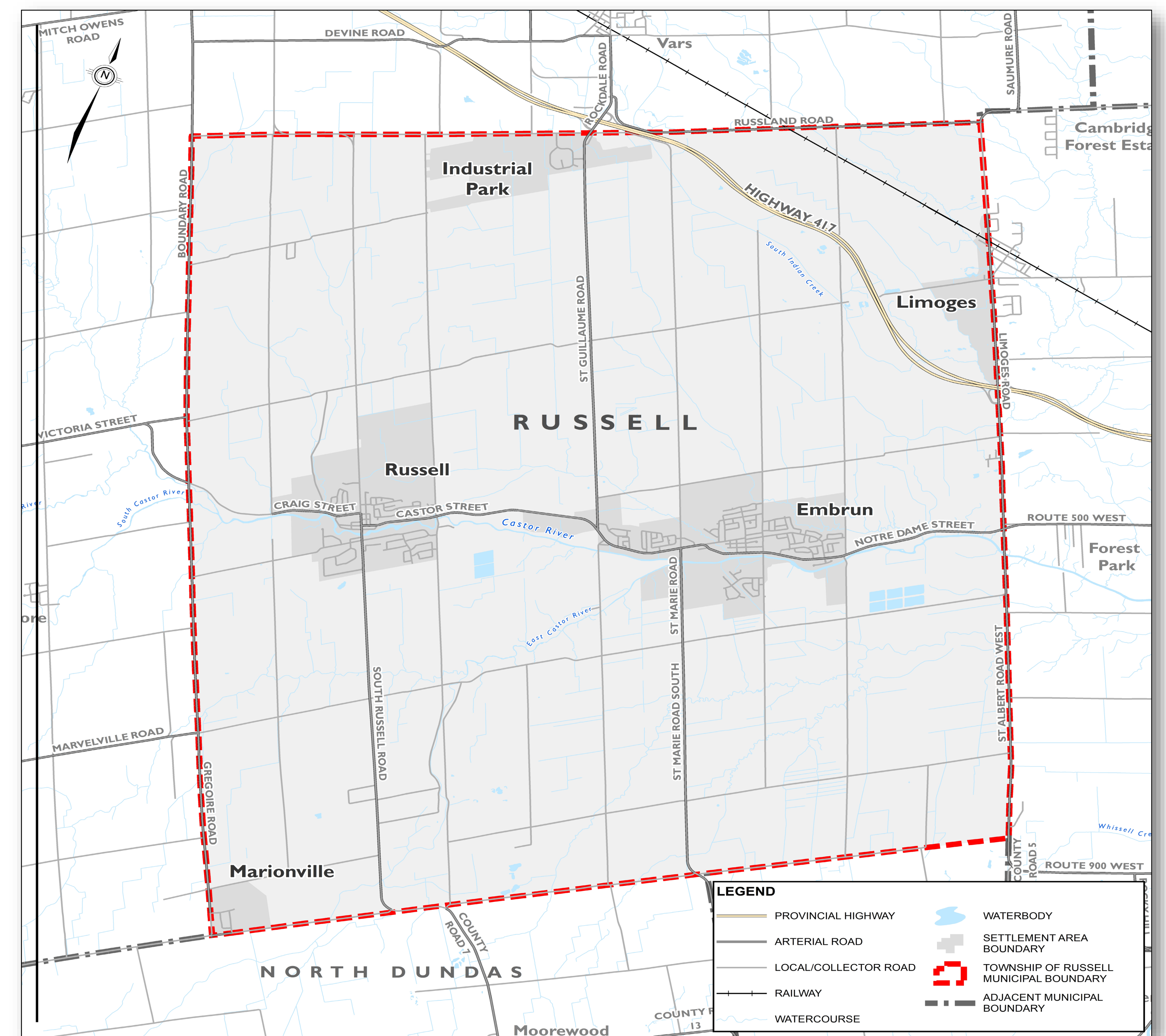


Phases 1 and 2 of the Class EA Process will be completed during the Master Plan. Projects identified as Exempt will proceed to implementation. Projects identified as Schedule B require filing of the Project File for public review. Projects identified as Schedule C will require completion of Phase 3 and 4 of the Class EA Process.

Problem/Opportunity Statement

The Township of Russell is building out within the Urban Boundaries of Russell, Embrun and Marionville in accordance with the Township of Russell and United Counties of Prescott and Russell Official Plans.

The existing infrastructure will need upgrading to accommodate the immediate challenges and long-term growth. The preferred solutions to address the capacity deficits will comply with applicable regulations, add the required capacity and be assessed for the environmental and financial sustainability of the projects.

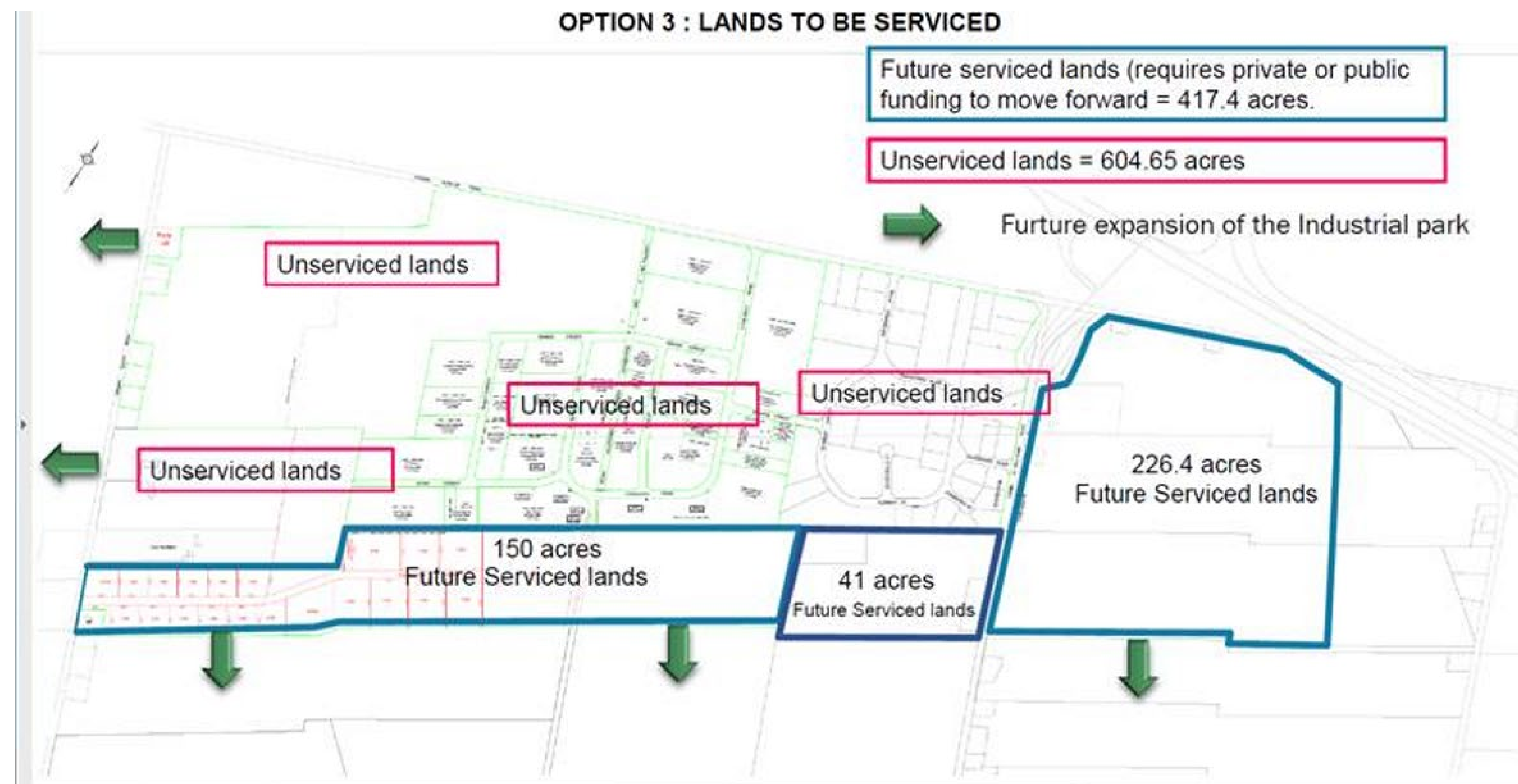


Study Area Limits – Water and Wastewater Master Plan Update

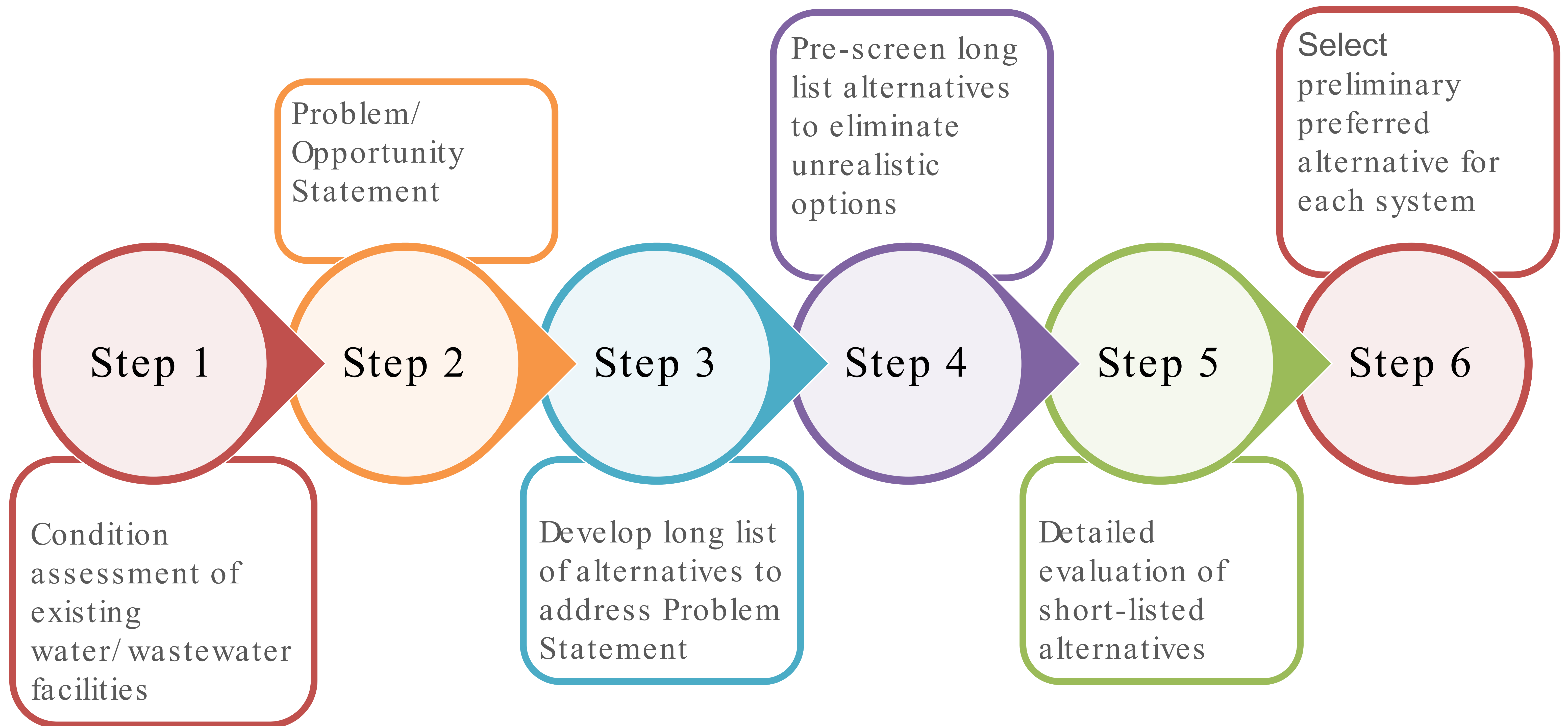
Highway 417 Industrial Park

Per the Township's Council Meeting held on May 16, 2023, "Option 3: Alternate water and sewage servicing model for currently undeveloped lands in the Park" was approved by Council as the preferred alternative for servicing the Highway 417 Industrial Park. Option 3 involves developing the existing Park 'as is', and further evaluating lands directly north of Route 100 and East of St Guillaume for both water and sewage servicing.

- Servicing of the Highway 417 Industrial Park is contingent on funding from future developers.
- This Master Plan evaluated if the current water supply feedermain has capacity should lands identified for future servicing in the Highway 417 Industrial Park be serviced.
- The future buildout wastewater capacity will account for the Highway 417 Industrial Park as more information becomes available.

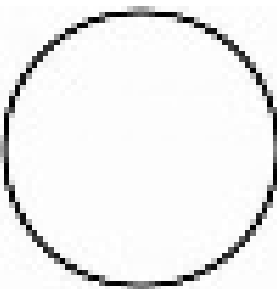
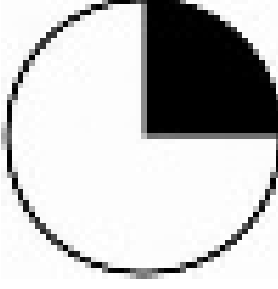
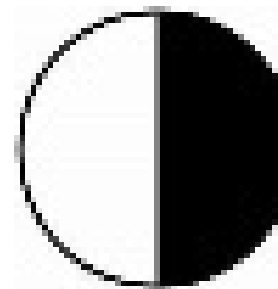
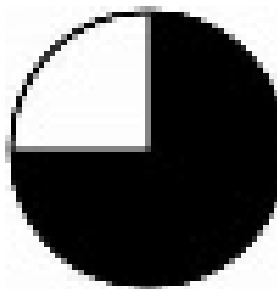
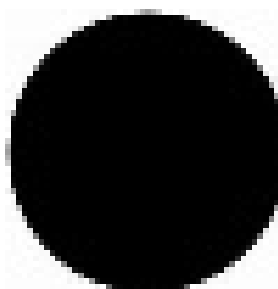


Process for Selecting the Preliminary Preferred Water/Wastewater Servicing Strategies



Evaluation Methodology

Short listed alternatives were assessed relative to each other, and assigned a score based on potential net impact and available mitigation measures. Scores were assigned based on the following scoring approach:

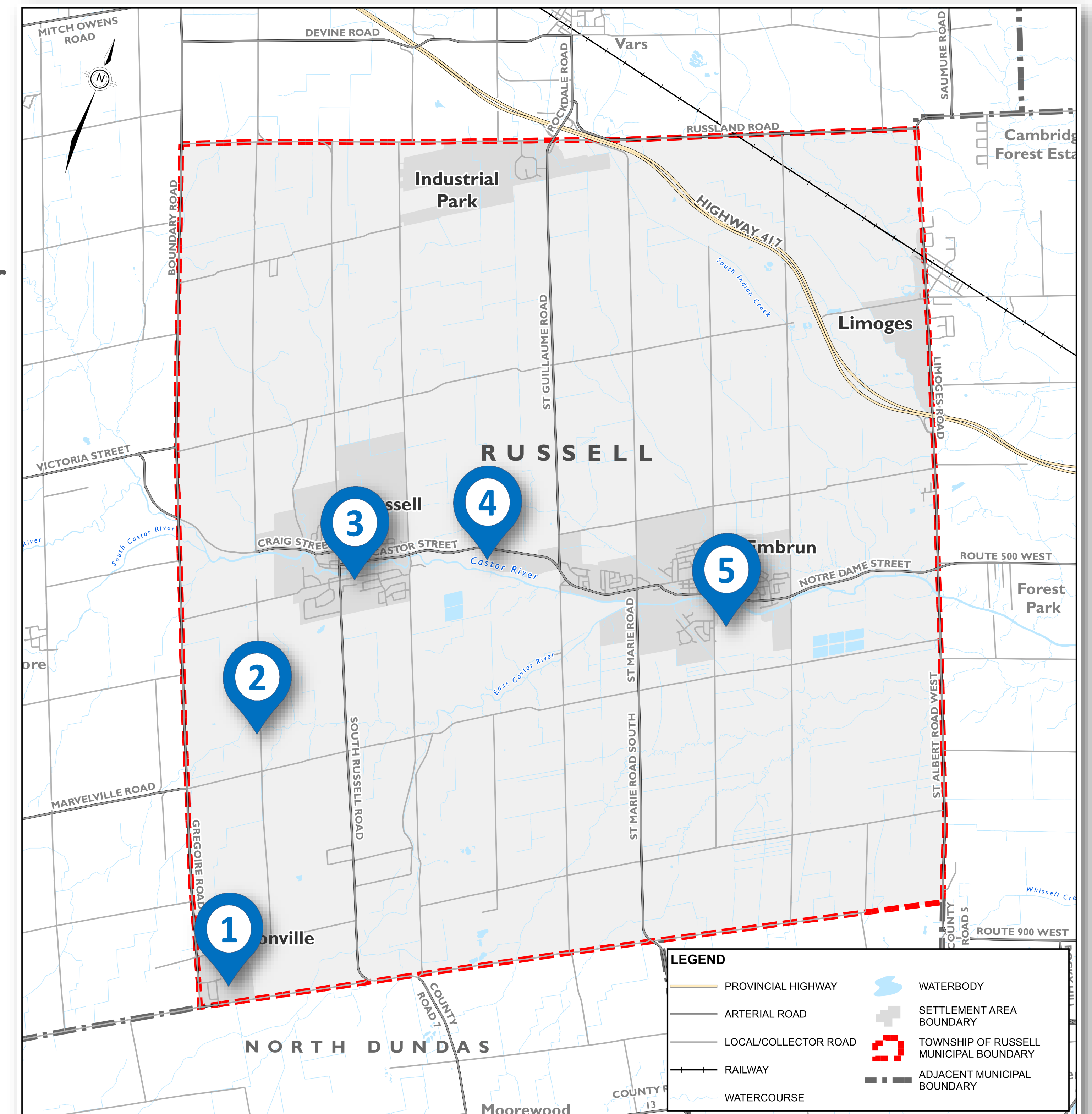
				
Potential impacts are significant, implementation of substantial mitigation measures are required. Risk cannot be eliminated.	Potential impacts are major, implementation of extensive mitigation measures required to reduce/eliminate risks.	Potential impacts are moderate, implementation of many mitigation measures required to reduce/eliminate risks.	Potential impacts are minor and can be easily mitigated through implementation of standard mitigation measures.	Potential impacts are negligible, no mitigation required.



Township Water Infrastructure

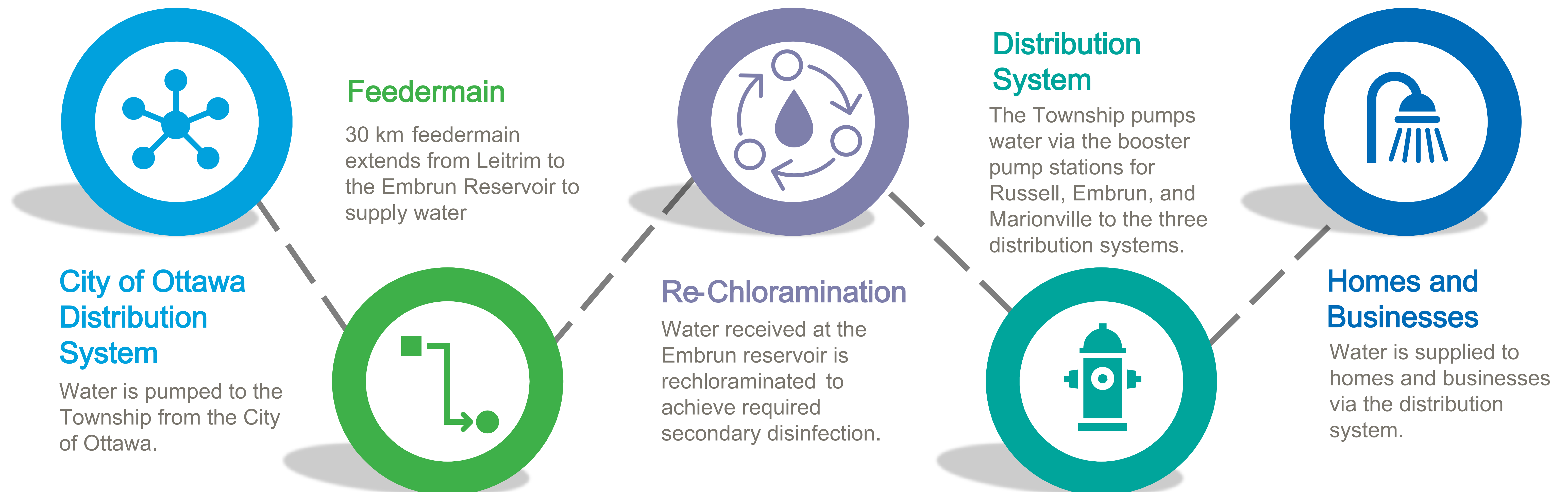
The Municipality owns and operates several major water infrastructure sites, as shown in the map and below:

1. Marionville Water Tower
2. Marionville Booster Pumping Station
3. Russell Water Tower
4. Embrun Reservoir and Embrun/Russell Booster Pumping Stations
5. Embrun Water Tower



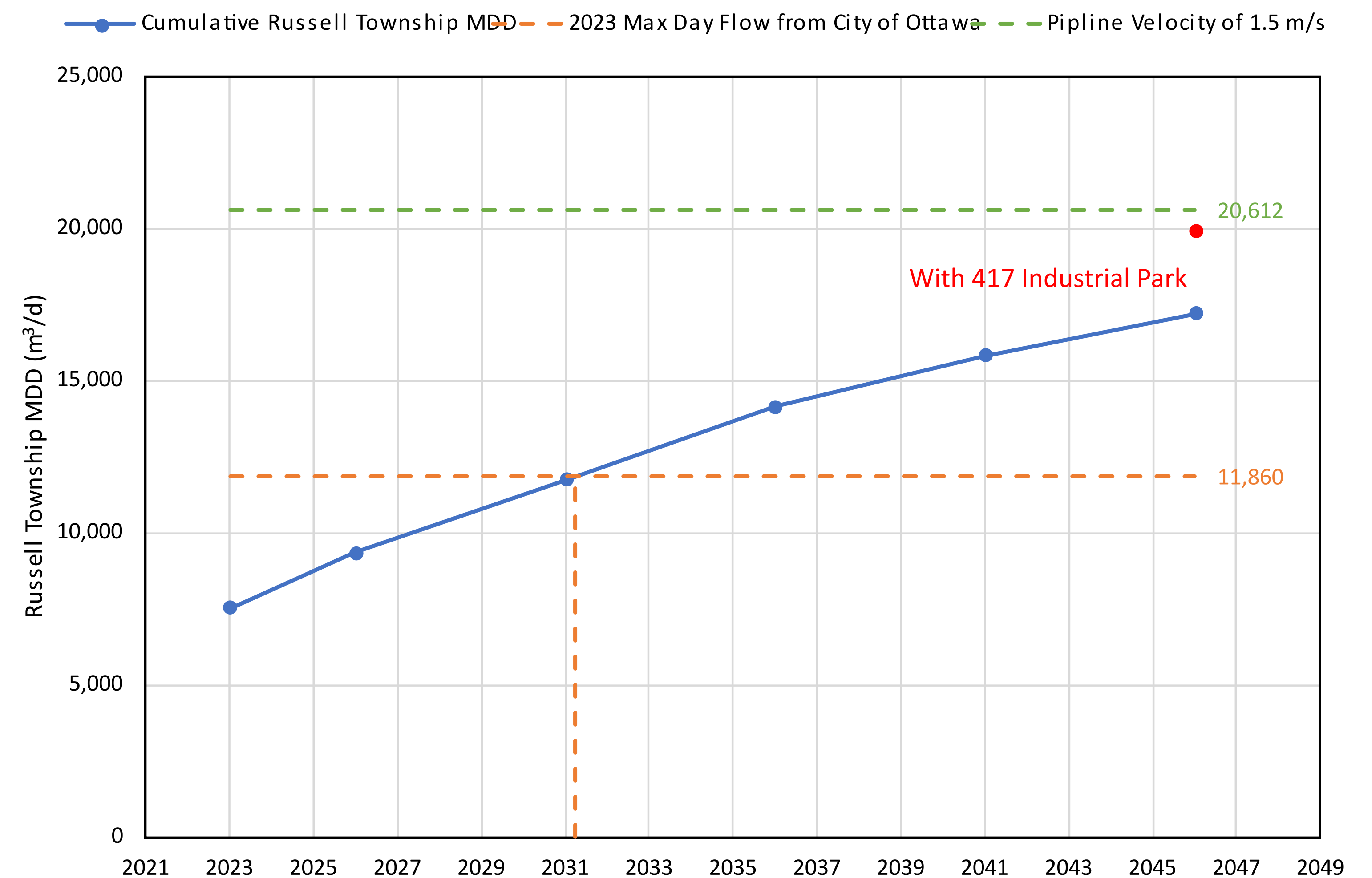
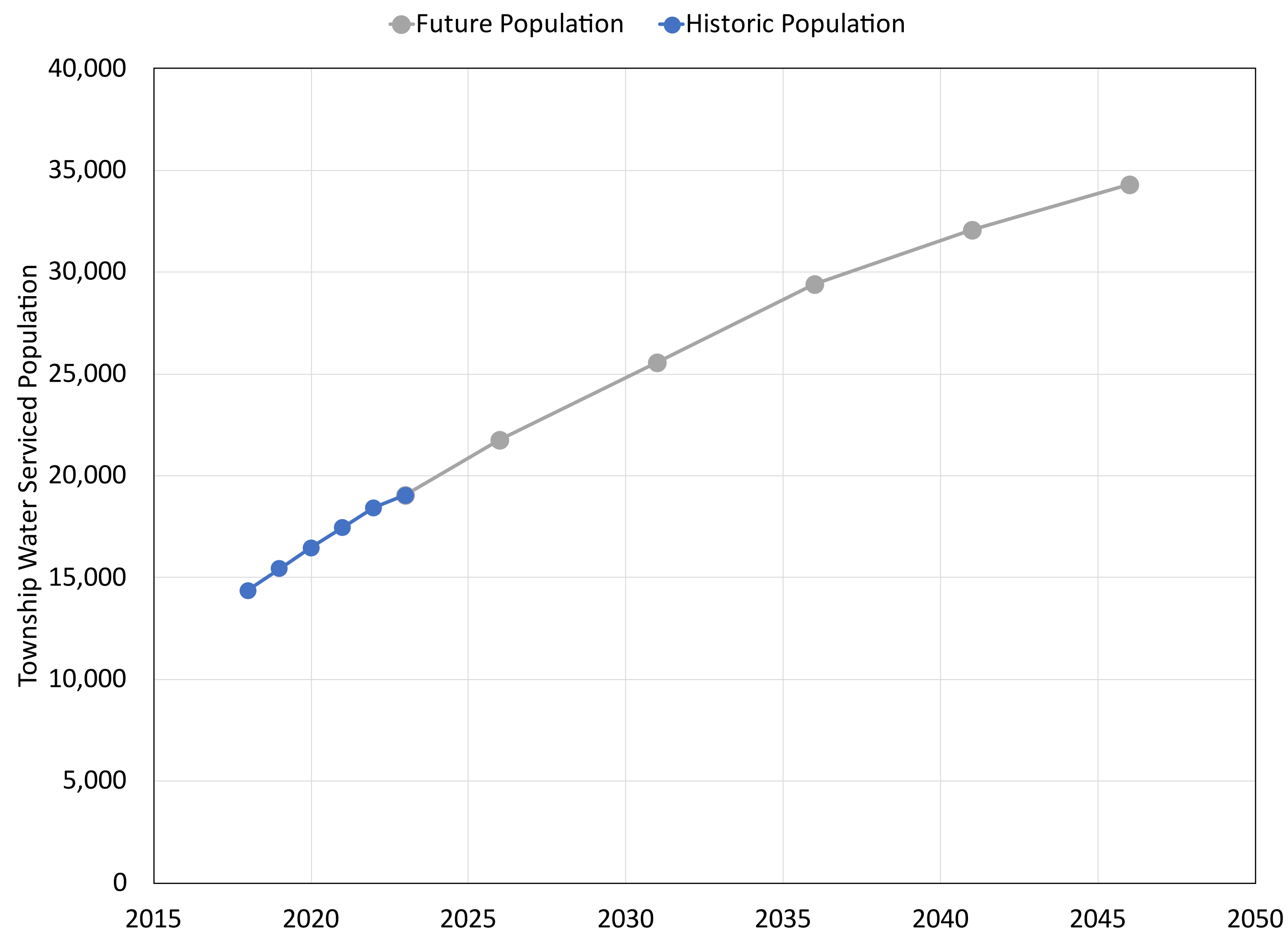
What is the source of our drinking water?

The City of Ottawa supplies drinking water to the Township from the Leitrim Road Pumping Station through an approximately 30 km long, 450 mm diameter feedermain connecting to the Eadie Road Metering Station and extending to the Embrun Reservoir. Given the long distance and residence time in the watermain from Ottawa, the water is rechloraminated at the Embrun Reservoir to achieve the required residual for secondary disinfection before distribution to Russell, Embrun and Marionville.



Water Supply Existing/Future Conditions

Parameter	Existing	Future (2046)
Population (Embrun, Russell & Marionville)	19,050	34,325
Maximum Daily Demand, m ³ /d	7,602	17,197
Existing City of Ottawa Water Supply Agreement, m ³ /d	11,860	11,860 (5,337 shortfall)

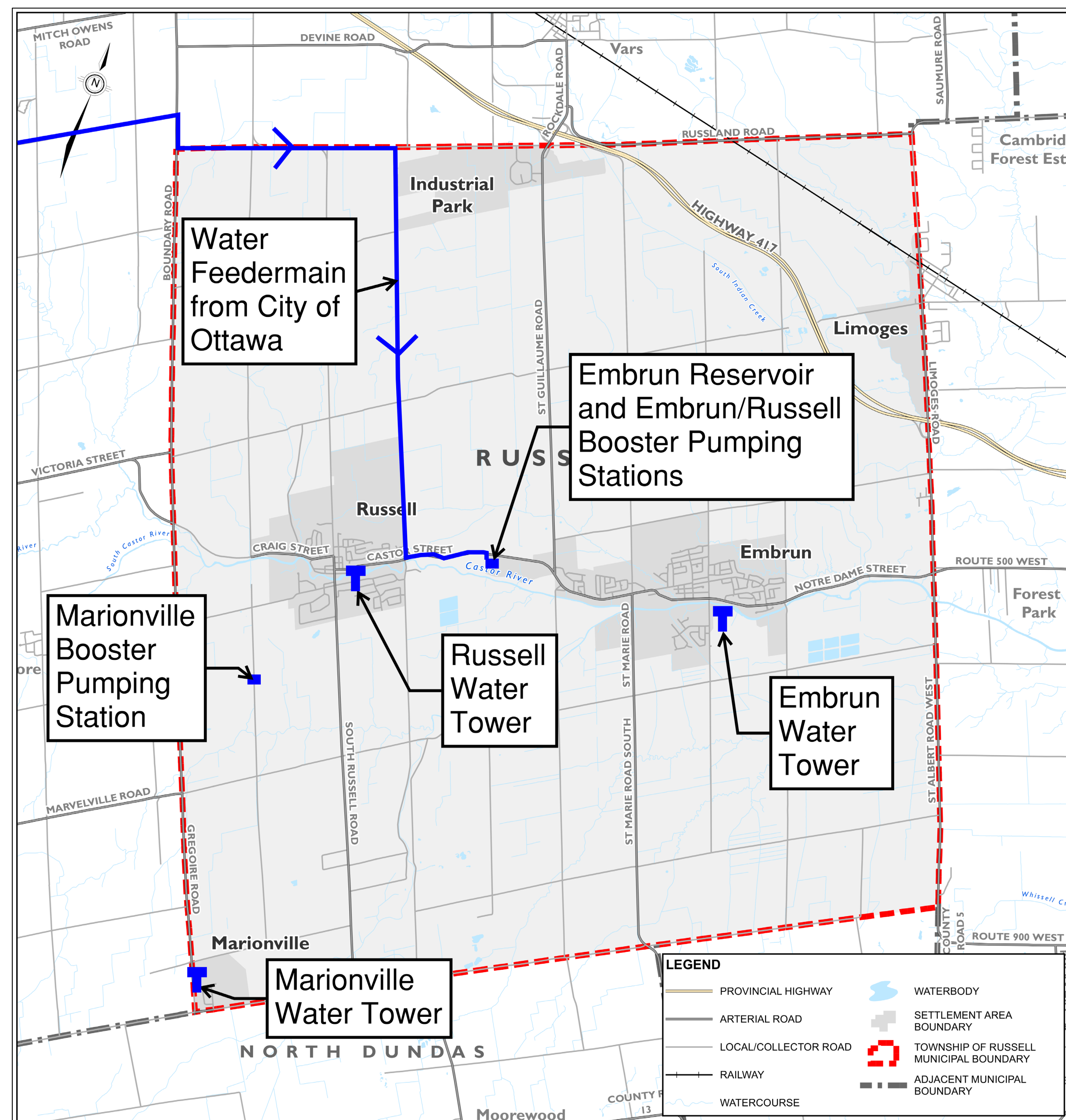



*According to City of Ottawa Design Guidelines, a watermain is designed to operate under normal conditions at a velocity of 1.5 m/s. The current feedermain is able to produce 20,612 m³/d without upgrades to the pipe. Discussions with the City of Ottawa will be required to determine the impacts of the City's infrastructure.

Township Water Supply


Key Infrastructure:

- City of Ottawa supplies drinking water to the Township with a maximum daily supply agreement of 11,860 m³/d
- Water is rechloraminated at the Embrun Reservoir to achieve the required residual for secondary disinfection before distribution to Russell, Embrun and Marionville





- Current water feedermain from the City of Ottawa has sufficient capacity to meet current and future water demands
- Existing water supply system is effective to operate



- Existing water supply agreement with the City of Ottawa is insufficient to meet 2046 water demands
- Additional water supply required by 2031 based on population growth projections

Shortlisted Alternative Servicing Strategies:

1. Expansion of Existing Service from Ottawa
 - Renegotiate water supply agreement with City of Ottawa to increase maximum daily supply to meet 2046 water demands
2. Obtain Water Supply from Clarence-Rockland
 - Construct an additional water feedermain to Limoges to supplement water supply with contributions from City of Clarence-Rockland.

Water Supply Alternatives Evaluation Results

Evaluation Criteria	Alternative 1: Expansion of Existing Service from Ottawa Renegotiate water supply agreement with City of Ottawa to increase maximum daily supply	Rating	Alternative 2: Obtain Water Supply from Clarence-Rockland Construct an additional water feedermain to Limoges to supplement water supply with contributions from City of Clarence-Rockland.	Rating
Social	<ul style="list-style-type: none"> No significant impact on social as no additional feedermain construction required. 	●	<ul style="list-style-type: none"> Moderate impact to social, requires mitigation measures during construction of new feedermain Feedermain can be routed along right-of-ways to mitigate impacts to undisturbed areas Moderate truck traffic and lane closures during construction. 	◐
Technical	<ul style="list-style-type: none"> Similar O&M responsibility to existing conditions with only one feedermain from City of Ottawa No redundancy for feedermain that must be mitigated with adequate water storage in the Township 	◑	<ul style="list-style-type: none"> Increased redundancy with water supply from two sources (Ottawa and Clarence-Rockland). Increased O&M responsibility with an additional feedermain from Limoges with supply from City of Clarence-Rockland. 	◐
Natural Environment	<ul style="list-style-type: none"> No significant impact on natural environment as no additional feedermain construction required. 	●	<ul style="list-style-type: none"> Moderate impact to natural environment, requires mitigation measures during construction of new feedermain. Feedermain can be routed along right-of-ways to mitigate disturbing naturalized areas. 	◐
Financial	<ul style="list-style-type: none"> Minimal capital investment required if the City of Ottawa booster pumping station requires upgrades to accommodate increase water servicing to the Township. Minimal increase in O&M costs. Total Capital Cost: Upgrades to City Booster Station may be required. To be confirmed following discussions with City of Ottawa. 	◑	<ul style="list-style-type: none"> Large capital investment required for new feedermain construction. Moderate increase in O&M costs. Total Capital Cost: High level estimate of \$70M for feedermain to Clarence Rockland, plus any required upgrades to the Clarence Rockland Water Treatment Plant and Booster Pumping 	◑
Overall	Preliminary Preferred Alternative	✓	Alternative Not Recommended	X

Township Water Storage and Booster Pumping

Key Infrastructure:

- Water storage is provided at the Embrun Reservoir, and water towers in Russell, Embrun, and Marionville



- Overall existing total water storage within the Township is sufficient to meet 2046 maximum daily demand per MECP Guidelines.
- Reduce frequency of pumping in peak hydro time of use period (7 AM and 7 PM) to improve booster pumping station energy efficiency



CONSTRAINT

- Deficits in floating (elevated) water storage in Russell/Marionville and Embrun will require additional water booster pumping capacity
- Township must consider water supply blackout period (6:00 pm – 10:00 pm daily) when supply from Ottawa is not available

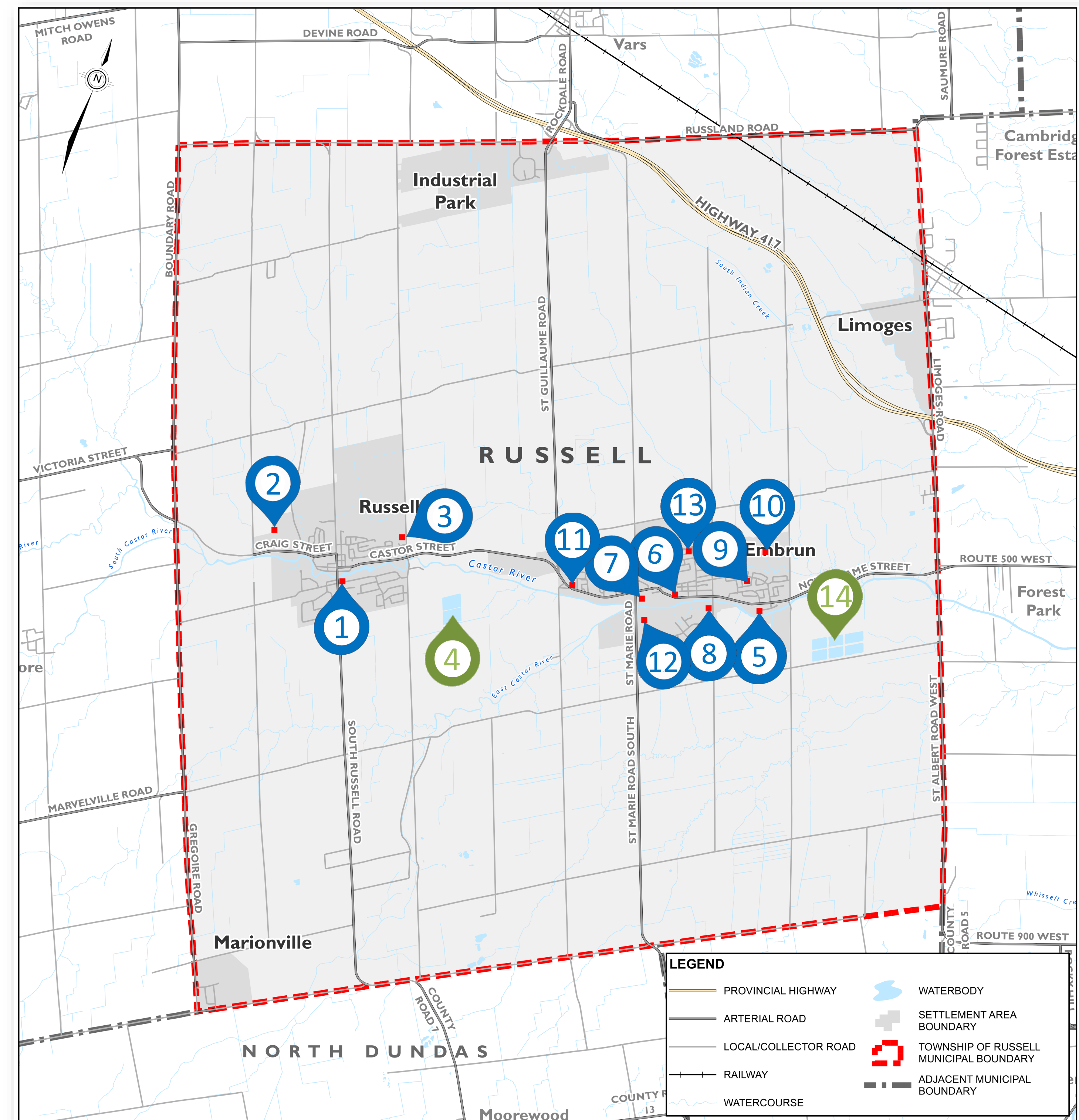
Preferred Alternative Water Storage and Booster Pumping:

1. Expansion of Embrun Reservoir Capacity
 - To provide the required buffer to account for 2046 storage requirements and account for the supply black-out period.
2. Increase Russell and Embrun Booster Pumping Capacities
 - Increase pumping capacity to firm capacity to meet 2046 maximum daily demand and fire flow requirements.

Township Wastewater Infrastructure

The Municipality owns and operates several wastewater infrastructure sites, as shown in the map and below:

1. Russell SPS1
2. Russell SPS2
3. Russell SPS3
4. Russell Wastewater Treatment Plant
5. Embrun SPS1
6. Embrun SPS2
7. Embrun SPS3
8. Embrun SPS4
9. Embrun SPS5
10. Embrun SPS6
11. Embrun SPS7
12. Embrun SPS8
13. Embrun SPS9
14. Embrun Wastewater Treatment Plant

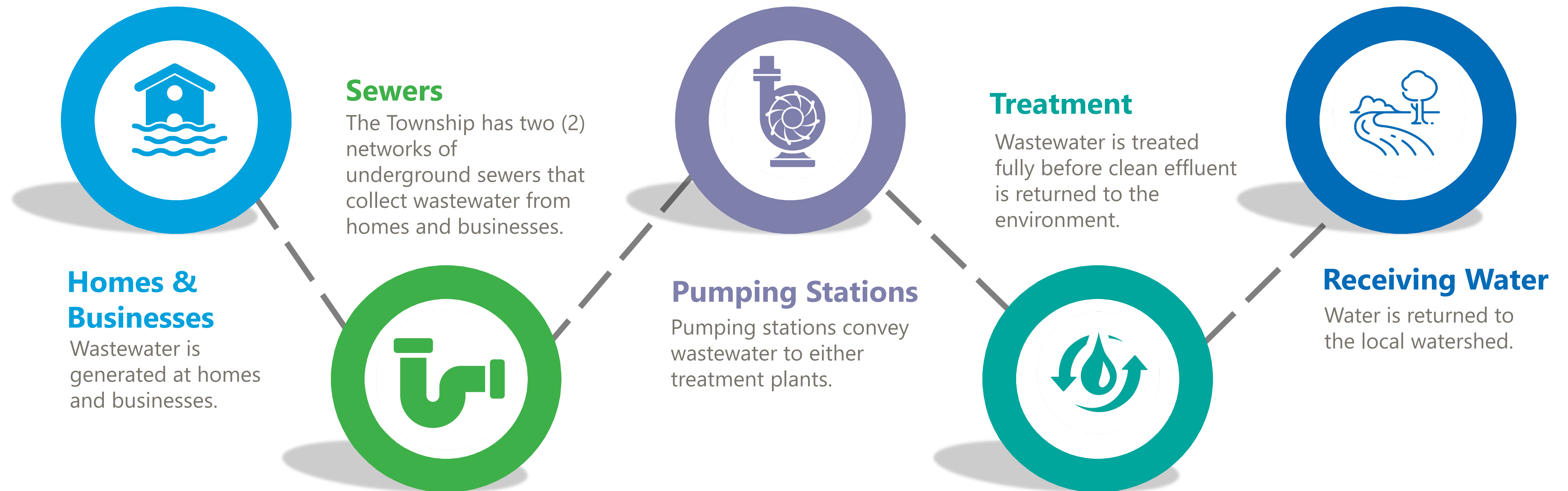


Wastewater Infrastructure in Russell Township

How is Wastewater Managed?

The Township consists two (2) distinct wastewater systems:

- Russell
- Embrun



Wastewater Treatment in the Township

Two (2) Wastewater Treatment Plants (WWTP) are present in the Township of Russell utilizing lagoon technology. The Russell Lagoons consist of five (5) cells while the Embrun Lagoons consist of eight (8) cells.



Russell Wastewater Treatment Plant



Embrun Wastewater Treatment Plant

Wastewater Treatment Plant Upgrades

Both the Russell and Embrun Wastewater Treatment Plants have limitations removing ammonia. Short-term upgrades are required to meet effluent ammonia concentrations regulated by each plant's Environmental Compliance Approval (ECA), while long-term upgrades are required to meet the future capacity from the projected growth demand within Russell and Embrun.

The Township has proactively engaged in an Assimilative Capacity Study (ACS) to protect the long-term aquatic health and water quality of the Castor River. The outcome of the ACS will inform the Township's wastewater effluent regulations and steer capital planning for short/long term upgrades.



The Castor River

Short-Term Upgrade Alternatives



MBBR Media Tank (Above),
MBBR Media (Below)



SAGR Construction



Fixed Media Implemented within a Lagoon



- Achieve compliance and protect Castor River aquatic health and water quality
- A short-term upgrade should allow for adequate treatment up to the current rated capacity and minimize throw away costs when implementing a long-term solution.



CONSTRAINT

- The Russell WWTP was unable to meet effluent ammonia compliance in 2023
- The Embrun WWTP was unable to meet effluent ammonia compliance in 2021, 2022, and 2023
- Unlikely to meet effluent ammonia compliance without process optimization and/or an upgrade

Short-Term Upgrade Alternative Strategies:

1. Implement Effluent Polishing Prior to Discharge
 - Effluent polishing allows for reduce ammonia concentrations during discharge, recycling flowrate during non-discharge months allows for continuous ammonia reduction (Moving Bed Biofilm Reactor or Submerged Attached Growth Reactor)
2. Introduce Fixed Media within Existing the Lagoons
 - Fixed media may allow for prolonged ammonia treatment in the colder months due to microbe growth on the media

Long-Term Upgrade Alternatives



Lagoon Treatment



Mechanical Wastewater Treatment Plant



- The preferred long-term upgrade should allow for effluent quality to meet or exceed stringent regulations from the on-going Assimilative Capacity Study of the Castor River.
- Review a system wide approach for Russell and Embrun where both facilities require expansions or new facilities



CONSTRAINT

- Significant footprint and capital cost required for treatment plants
- The technology selection for a new wastewater treatment plant may be limited depending on effluent regulations

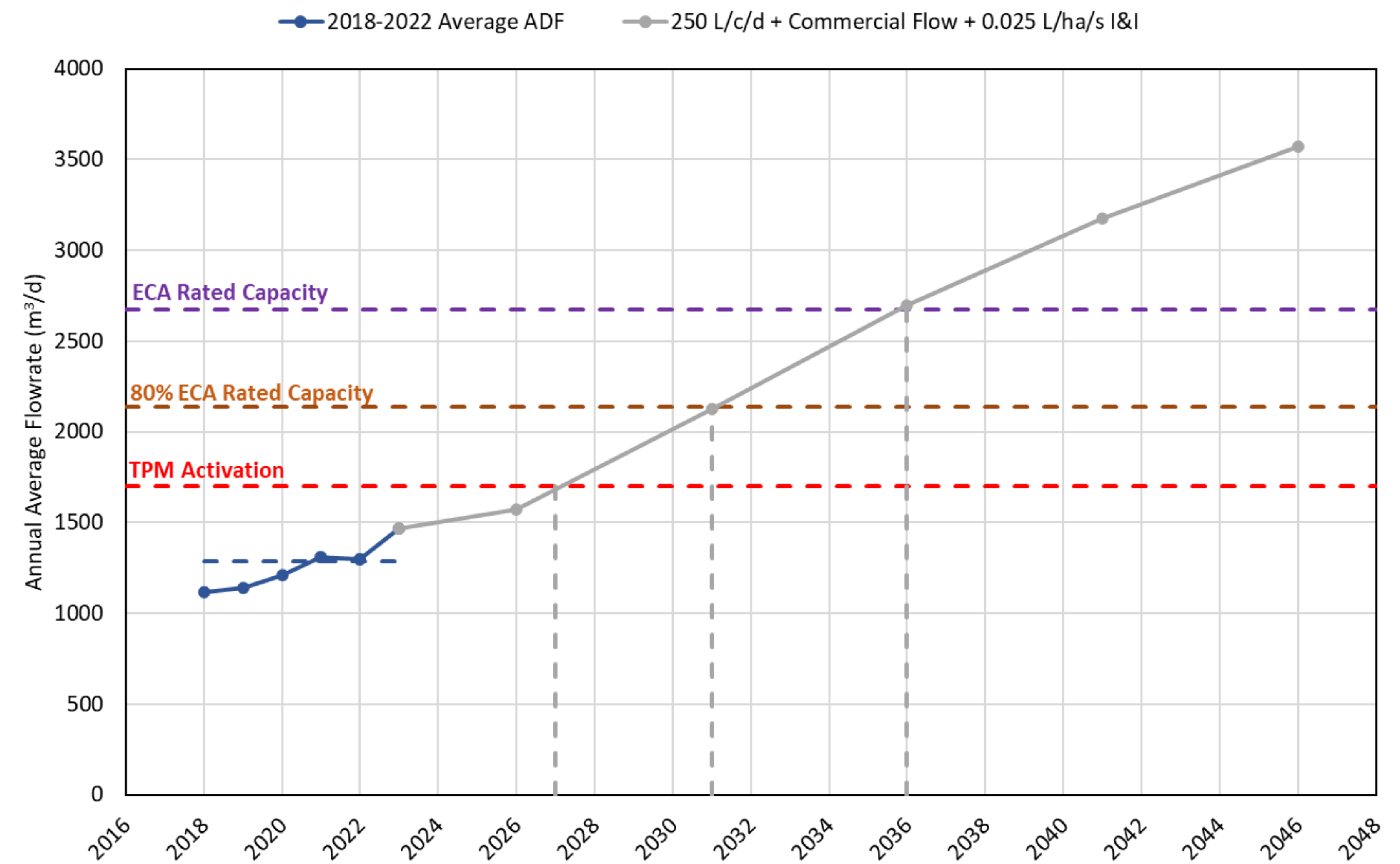
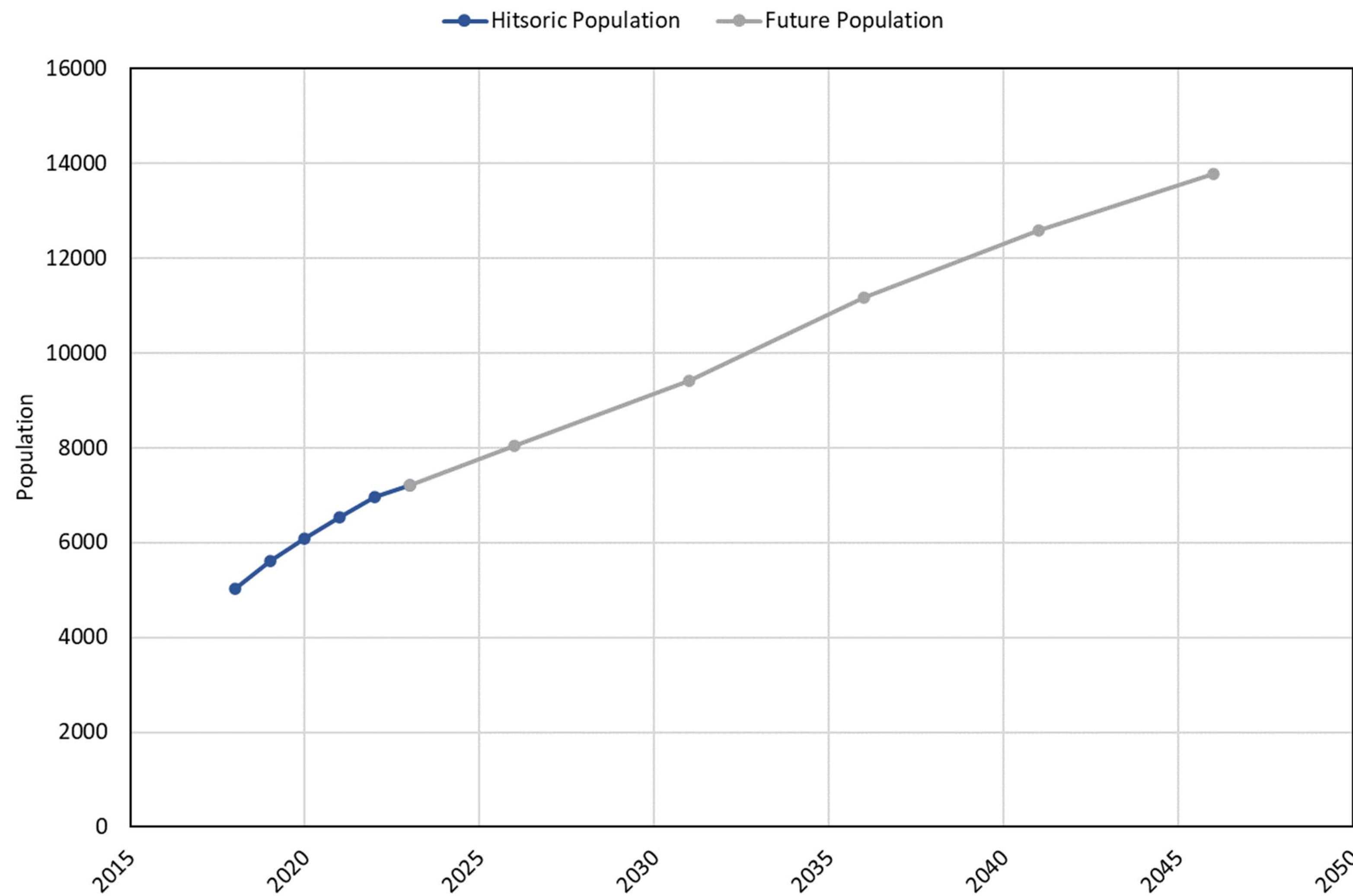
Long-Term Upgrade Alternative Strategies:

1. Expansion of Existing Lagoon Technology
 - Construction of lagoon cells six (6) and seven (7) at the Russell WWTP and cells nine (9), ten (10), and eleven (11) at the Embrun WWTP; plants continue to operate as seasonal discharge and require significant add-on treatment
2. New Wastewater Treatment Plant
 - A mechanical wastewater treatment plant is constructed for Russell and Embrun, and technology is selected based on effluent limits such that the plant can maintain environmental compliance

Russell Existing/Future Conditions

Parameter	Existing	Future (2046)	Buildout*
Population	7,205	13,770	17,323
Average Day Flowrate, m ³ /d	1,287	3,572	4,656
WWTP Rated Capacity, m ³ /d	2,675	2,675 (897 shortfall)	2,675 (1,981 shortfall)

*Buildout refers to the development of the entire Secondary Plan settlement boundary. Buildout population projections were calculated based on development densities specified in the Secondary Plans and Official Plan.



*City of Ottawa stipulates 0.05 L/ha/s for inflow and infiltration (I&I). A midpoint was taken considering the historically low I&I seen Russell. Russell Wastewater Treatment Plant is subject to a phosphorus loading limit prior to agreement with the South Nation Conservation Authority.

Short-Term Russell WWTP Alternatives Evaluation Results

Evaluation Criteria	Alternative 1: SAGR	Rating	Alternative 2: MBBR	Rating	Alternative 3: Fixed Media	Rating
Social	<ul style="list-style-type: none"> No change in site location Land acquisition likely required Low aesthetic impacts to surrounding properties where expansion is built Minor to no odour addition to the WWTP Moderate truck traffic during construction 		<ul style="list-style-type: none"> No change in site location Land likely to be controlled by the Township Low aesthetic impacts to surrounding properties where expansion is built Minor to no odour addition to the WWTP Moderate truck traffic during construction 		<ul style="list-style-type: none"> No change in site location Land controlled by the Township No aesthetic impact to surrounding properties No odour addition to the WWTP Low truck traffic during construction 	
Technical	<ul style="list-style-type: none"> Approvals required (MECP, etc.) Requires Schedule B EA Proven to meet effluent criteria at rated capacity flowrates Large excavation required Moderate compatibility with existing infrastructure No compatibility with any long-term upgrade/ expansion 		<ul style="list-style-type: none"> Approvals required (MECP, etc.) Exempt from additional EA requirements Proven to meet effluent criteria at rated capacity flowrates Moderate excavation required Moderate compatibility with existing infrastructure High compatibility with long-term upgrade/ expansion as tankage could be repurposed 		<ul style="list-style-type: none"> Approvals required (MECP, etc.) Exempt from additional EA requirements Less proven in Ontario to meet effluent criteria at rated capacity flowrates No excavation required High compatibility with existing infrastructure No compatibility with long-term upgrade/ expansion. 	
Natural Environment	<ul style="list-style-type: none"> Moderate impact to natural environment, requires mitigation measures No significant impact on receiving water as effluent limits likely achieved. 		<ul style="list-style-type: none"> Moderate impact to natural environment, requires mitigation measures No significant impact on receiving water as effluent limits likely achieved 		<ul style="list-style-type: none"> Low impact to natural environment, requires some mitigation measures Likely significant impact on receiving water as effluent limits likely not achieved. 	
Financial	<ul style="list-style-type: none"> Large capital investment required All costs are sunk as no reuse for long-term WWTP solution Moderate increase in O&M costs Total CAPEX Costs: \$11M plus land acquisition if required 		<ul style="list-style-type: none"> Large capital investment required Potential for tank reuse, limiting future capital costs Moderate increase in O&M costs Total CAPEX Costs: \$9M 		<ul style="list-style-type: none"> Alternative deemed unlikely to meet technical requirements, no costing performed Total CAPEX Costs: N/A 	N/A
Overall	Alternative Not Recommended	X	Preliminary Preferred Alternative*	✓	Alternative Not Recommended	X

**Russell Lagoons have more capacity than Embrun and process optimization as a short-term solution is recommended to be implemented prior to investing in the large infrastructure project*

Long-Term Russell WWTP Alternatives Evaluation Results

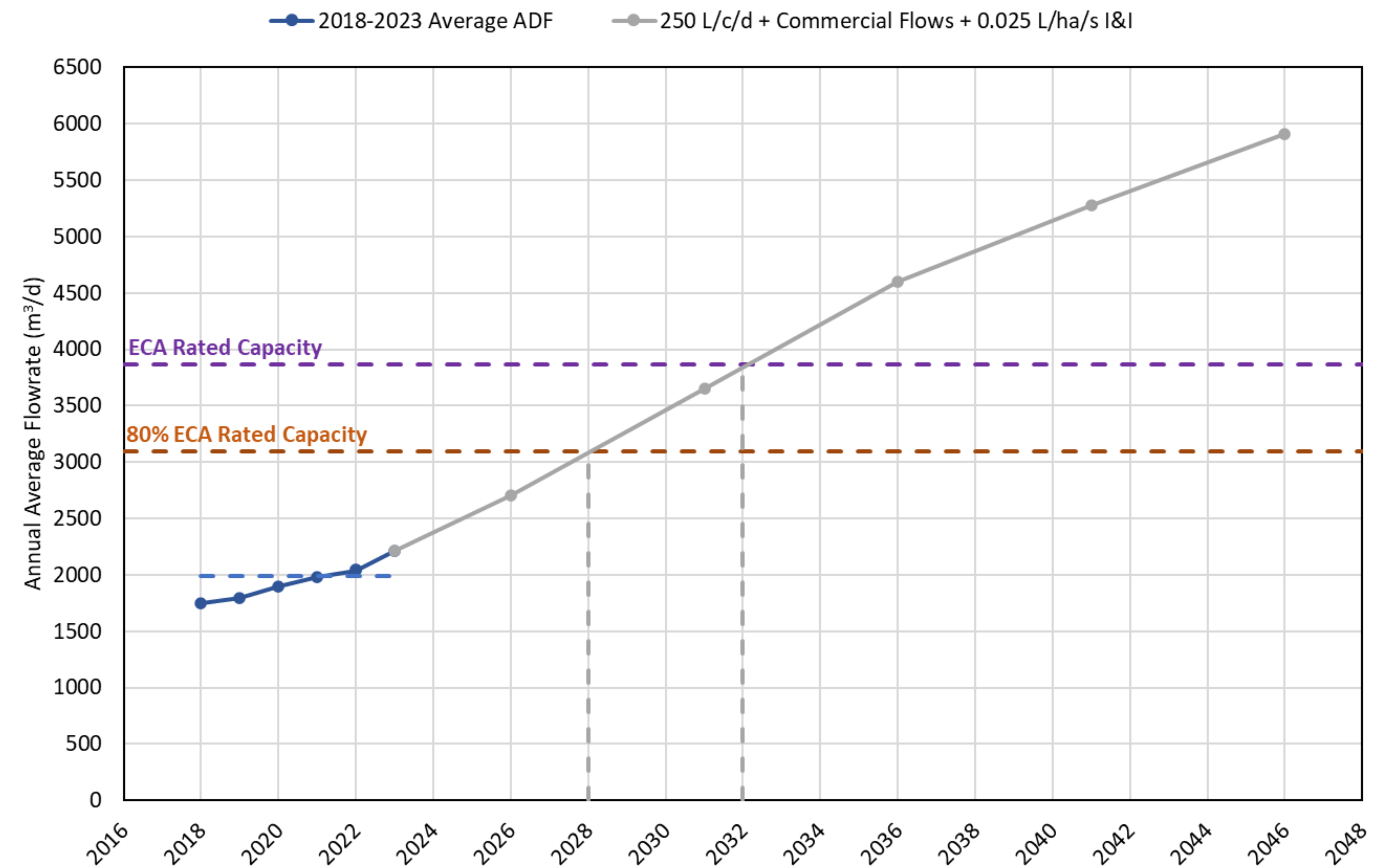
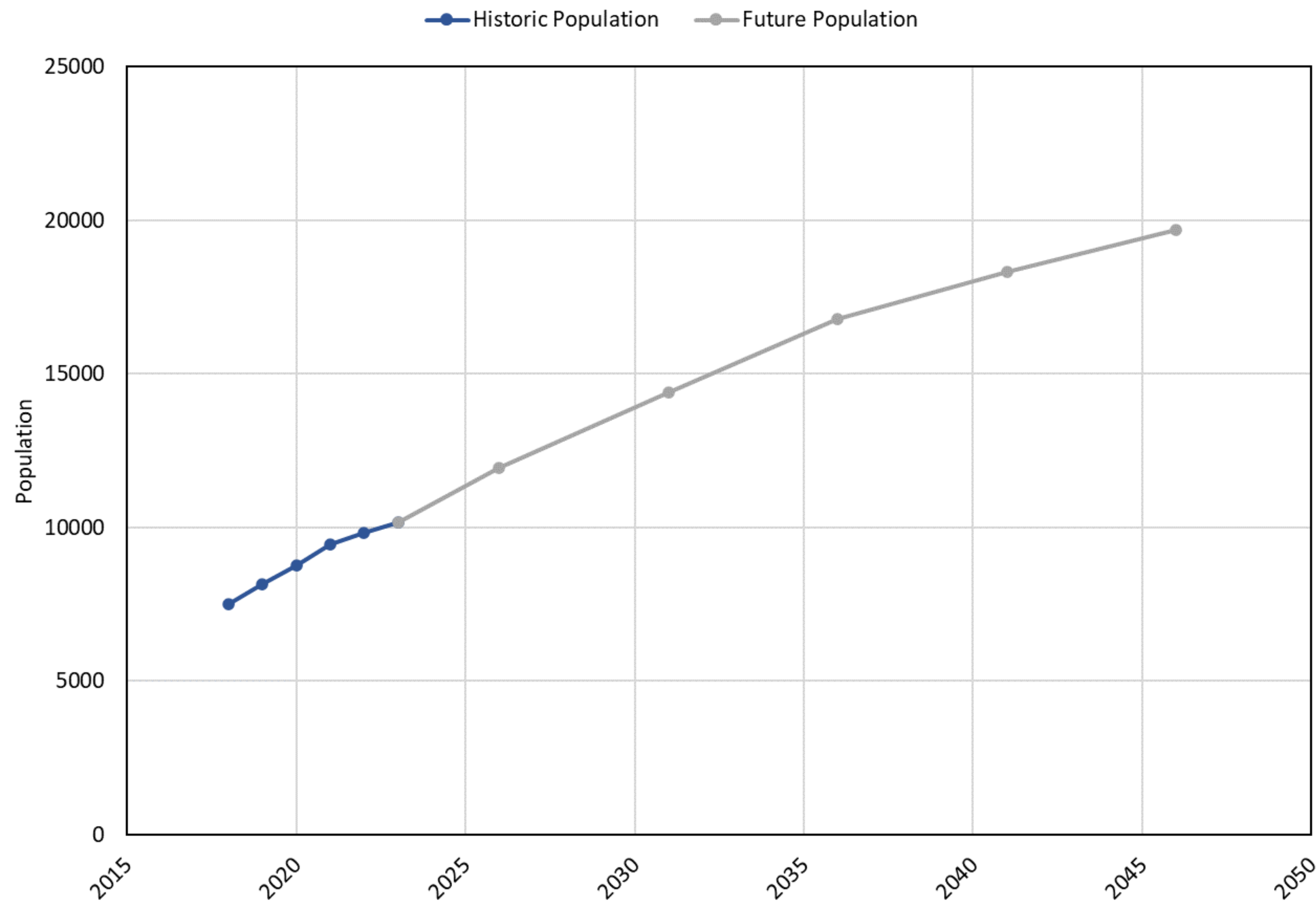
Evaluation Criteria	Alternative 1: Expansion of Existing Lagoon Technology	Rating	Alternative 2: New Wastewater Treatment Plant	Rating
Social	<ul style="list-style-type: none"> No change in site location Likely to limit growth of Russell Requires land for expansion not controlled by the Township High aesthetic impact to surrounding properties Moderate odour addition to the WWTP High truck traffic during construction 		<ul style="list-style-type: none"> No change in site location Will not limit growth of Russell Required land for expansion controlled by the Township Low aesthetic impacts to surrounding properties Minor odour addition to the WWTP High truck traffic during construction 	
Technical	<ul style="list-style-type: none"> Approvals required (MECP, etc.) Will not meet effluent criteria at future flowrates Large excavation required High compatibility with existing infrastructure Limited ability for future expansion and phasing 		<ul style="list-style-type: none"> Approvals required (MECP, etc.) Will meet effluent criteria at future flowrates Moderate excavation required No compatibility with existing infrastructure High ability for future expansion and phasing 	
Natural Environment	<ul style="list-style-type: none"> High impact to natural environment, requires mitigation measures Significant impact on receiving water as effluent limits not achieved 		<ul style="list-style-type: none"> Moderate impact to natural environment, requires mitigation measure No impact on receiving water as effluent limits achieved 	
Financial	<ul style="list-style-type: none"> Alternative deemed unlikely to meet technical requirements, no costing performed Total CAPEX Costs: N/ A 	N/A	<ul style="list-style-type: none"> High capital investment required Moderate future expansion costs Potential for tank reuse of short-term solution High increase in O&M cost Total CAPEX Costs: \$50M 	
Overall	Alternative Not Recommended*	X	Preliminary Preferred Alternative	

**ACS study is indicating effluent limits that are beyond the capability of lagoon technology.*

Embrun Existing/Future Conditions

Parameter	Existing	Future (2046)	Buildout*
Population	10,157	19,697	23,902
Average Day Flowrate, m ³ /d	1,986	5,907	7,144
WWTP Rated Capacity, m ³ /d	3,865	3,865 (2,042 shortfall)	3,865 (3,279 shortfall)

*Buildout refers to the development of the entire Secondary Plan settlement boundary. Buildout population projections were calculated based on development densities specified in the Secondary Plans and Official Plan.

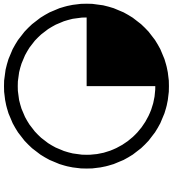
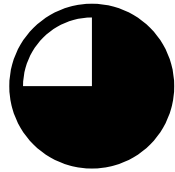
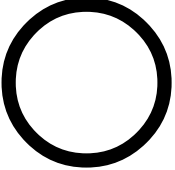
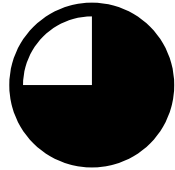
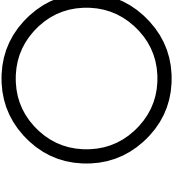
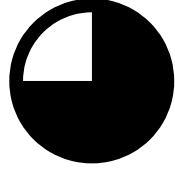
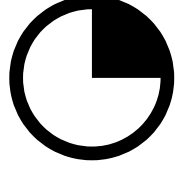



*City of Ottawa stipulates 0.05 L/ha/s for inflow and infiltration (I&I). A midpoint was taken considering the historically low I&I seen Embrun.

Short Term Embrun WWTP Alternatives Evaluation Results

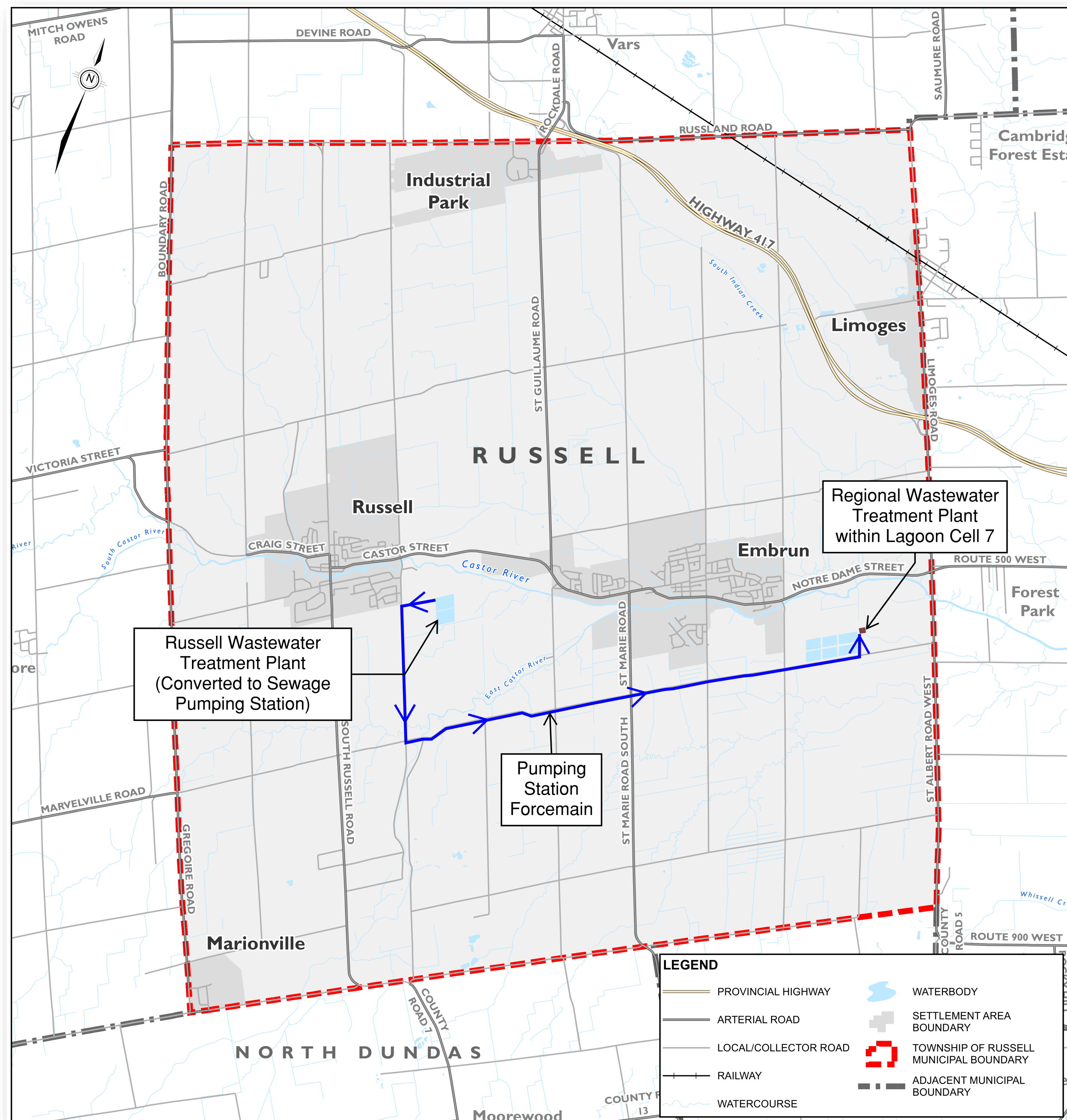
Evaluation Criteria	Alternative 1: SAGR	Rating	Alternative 2: MBBR	Rating	Alternative 3: Fixed Media	Rating
Social	<ul style="list-style-type: none"> No change in site location Land acquisition likely required Low aesthetic impacts to surrounding properties where expansion is built Minor to no odour addition to the WWTP Moderate truck traffic during construction 		<ul style="list-style-type: none"> No change in site location Land likely to be controlled by the Township Low aesthetic impacts to surrounding properties where expansion is built Minor to no odour addition to the WWTP Moderate truck traffic during construction 		<ul style="list-style-type: none"> No change in site location Land controlled by the Township No aesthetic impact to surrounding properties No odour addition to the WWTP Low truck traffic during construction 	
Technical	<ul style="list-style-type: none"> Approvals required (MECP, etc.) Requires Schedule B EA Proven to meet effluent criteria at rated capacity flowrates Large excavation required Moderate compatibility with existing infrastructure No compatibility with any long-term upgrade/ expansion 		<ul style="list-style-type: none"> Approvals required (MECP, etc.) Exempt from additional EA requirements Proven to meet effluent criteria at rated capacity flowrates Moderate excavation required Moderate compatibility with existing infrastructure High compatibility with long-term upgrade/ expansion as tankage could be repurposed 		<ul style="list-style-type: none"> Approvals required (MECP, etc.) Exempt from additional EA requirements Less proven in Ontario to meet effluent criteria at rated capacity flowrates No excavation required High compatibility with existing infrastructure No compatibility with long-term upgrade/ expansion. 	
Natural Environment	<ul style="list-style-type: none"> Moderate impact to natural environment, requires mitigation measures No significant impact on receiving water as effluent limits likely achieved. 		<ul style="list-style-type: none"> Moderate impact to natural environment, requires mitigation measures No significant receiving on course water as effluent limits likely achieved 		<ul style="list-style-type: none"> Low impact to natural environment, requires some mitigation measures Likely significant impact on receiving water as effluent limits likely not achieved. 	
Financial	<ul style="list-style-type: none"> Large capital investment required All costs are sunk as no reuse for long-term WWTP solution Moderate increase in O&M costs Total CAPEX Costs: \$14M plus land acquisition if required 		<ul style="list-style-type: none"> Large capital investment required Potential for tank reuse, limiting future capital costs Moderate increase in O&M costs Total CAPEX Costs: \$10M 		<ul style="list-style-type: none"> Alternative deemed unlikely to meet technical requirements, no costing performed Total CAPEX Costs: N/ A 	N/A
Overall	Alternative Not Recommended	X	Preliminary Preferred Alternative		Alternative Not Recommended	X

Long-Term Embrun WWTP Alternatives Evaluation Results

Evaluation Criteria	Alternative 1: Expansion of Existing Lagoon Technology	Rating	Alternative 2: New Wastewater Treatment Plant	Rating
Social	<ul style="list-style-type: none"> No change in site location Likely to limit growth of Embrun Requires land for expansion not controlled by the Township High aesthetic impact to surrounding properties Moderate odour addition to the WWTP High truck traffic during construction 		<ul style="list-style-type: none"> No change in site location Will not limit growth of Embrun Required land for expansion controlled by the Township Low aesthetic impacts to surrounding properties Minor odour addition to the WWTP High truck traffic during construction 	
Technical	<ul style="list-style-type: none"> Approvals required (MECP, etc.) Will not meet effluent criteria at future flowrates Large excavation required High compatibility with existing infrastructure Limited ability for future expansion and phasing 		<ul style="list-style-type: none"> Approvals required (MECP, etc.) Will meet effluent criteria at future flowrates Moderate excavation required No compatibility with existing infrastructure High ability for future expansion and phasing 	
Natural Environment	<ul style="list-style-type: none"> High impact to natural environment, requires mitigation measures Significant impact on receiving water as effluent limits not achieved 		<ul style="list-style-type: none"> Moderate impact to natural environment, requires mitigation measure No impact on receiving water as effluent limits achieved 	
Financial	<ul style="list-style-type: none"> Alternative deemed unlikely to meet technical requirements, no costing performed Total CAPEX Costs: N/ A 	N/A	<ul style="list-style-type: none"> High capital investment required Moderate future expansion costs Potential for tank reuse of short-term solution High increase in O&M cost Total CAPEX Costs: \$60M 	
Overall	Alternative Not Recommended*	X	Preliminary Preferred Alternative	

**ACS study is indicating effluent limits that are beyond the capability of lagoon technology.*

Regional Wastewater Treatment Plant



Preliminary Forcemain Layout from Russell WWTP to a Regional WWTP



- A Regional Wastewater Treatment Plant could save O&M costs as only one (1) plant would be functional
- Less capital invest required versus constructing new separate wastewater treatment plants for Russell/Embrun
- Reuse of the short-term alternative tankage likely possible to reduce capital costs



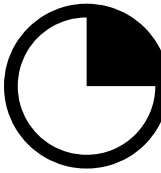
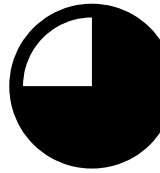
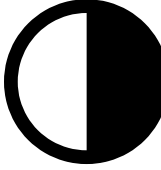
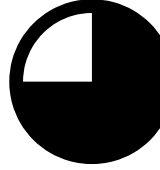
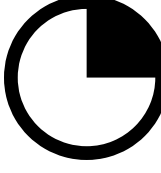
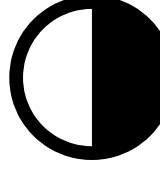
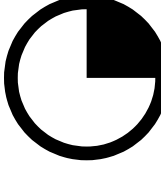
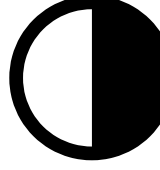

CONSTRAINT

- Pumping station required in Russell as Regional Plant preferred location is in Embrun
- Treatment technology selected largely dependent on the ongoing Assimilative Capacity Study of the Castor River

Regional Wastewater Treatment Plant Location Selection:

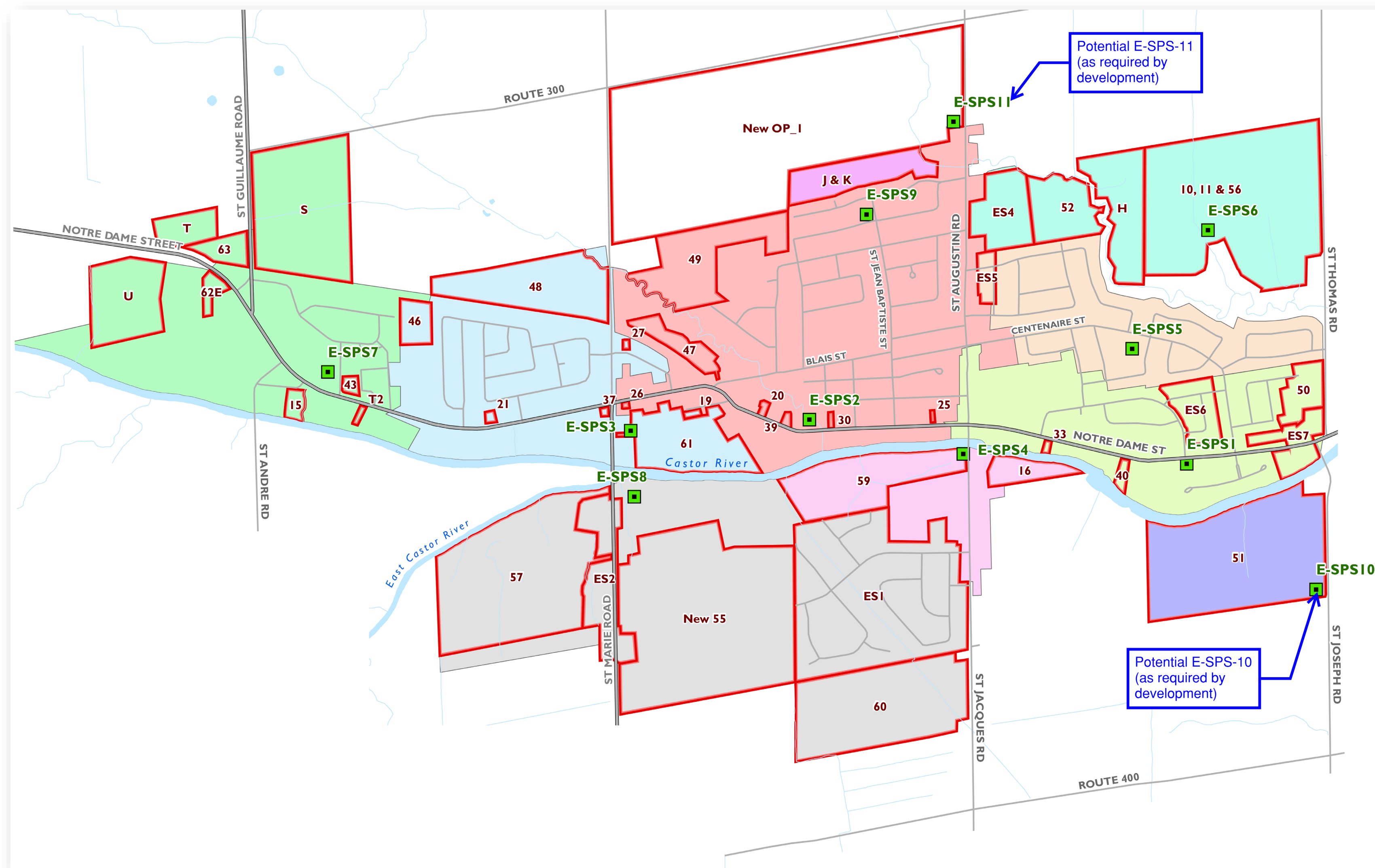
1. Russell Wastewater Treatment Plant
 - Requires pumping a larger flow from Embrun
 - Non-centralized location if Limoges were to send wastewater to be treated
2. Embrun Wastewater Treatment Plant
 - Smaller pump station required to pump flow from Russell to Embrun than vice versa
 - Centralized location if surrounding communities were to send wastewater to be treated
 - Preferred Location

Local WWTPs vs Regional WWTP Evaluation Results

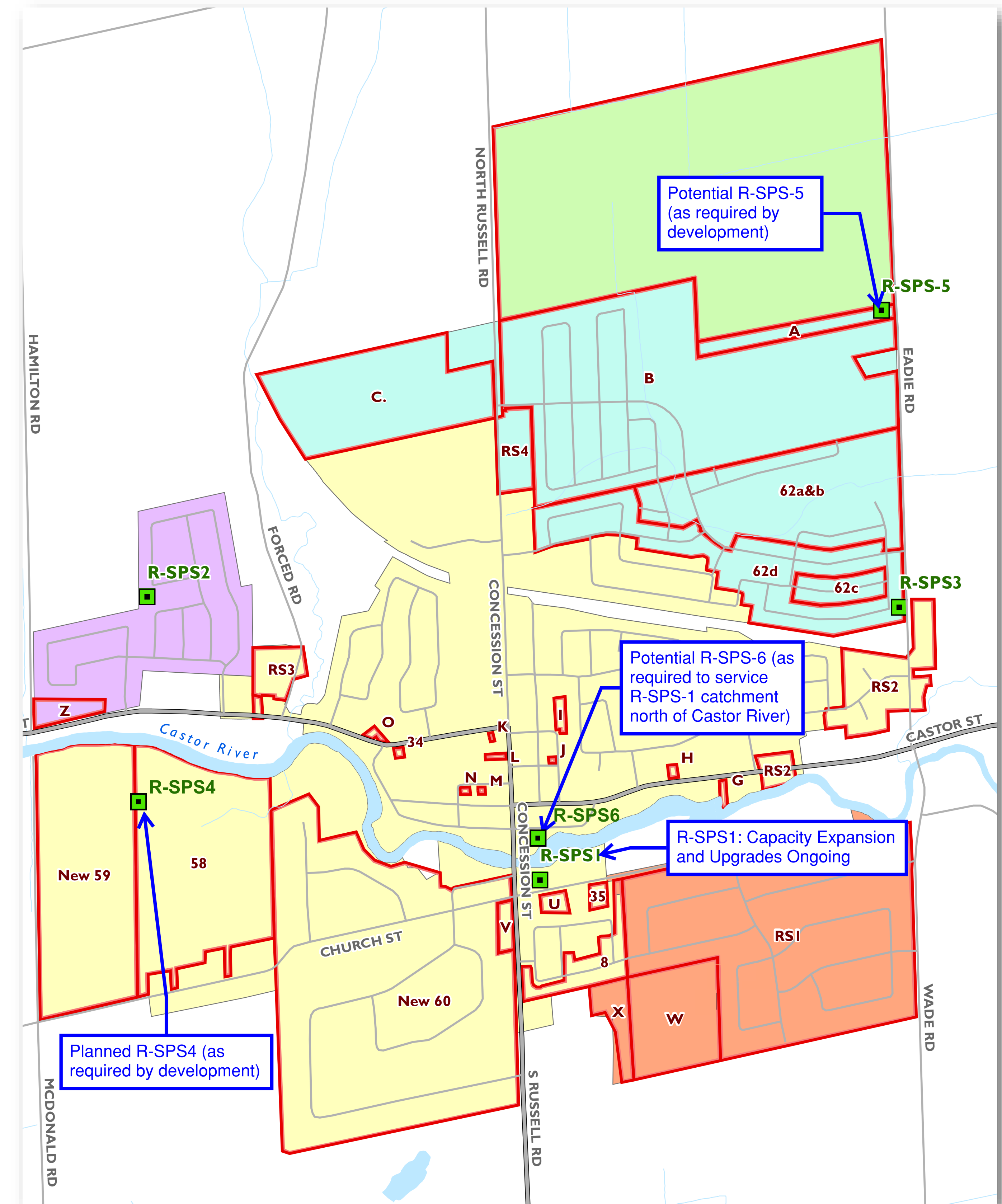
Evaluation Criteria	Alternative 1: Local (Embrun and Russell) Wastewater Treatment Plants	Rating	Alternative 2: Regional Wastewater Treatment Plant	Rating
Social	<ul style="list-style-type: none"> No change in site location Will not limit growth of Russell & Embrun Likely requires several land acquisitions for expansion Moderate aesthetic impacts to both surrounding properties Minor odour addition to both WWTPs High truck traffic in both Russell and Embrun during construction 		<ul style="list-style-type: none"> No change in site location Will not limit growth of Russell & Embrun Likely requires limited land acquisition for expansion Moderate aesthetic impacts to surrounding properties Minor odour addition to the WWTP High localised truck traffic during construction 	
Technical	<ul style="list-style-type: none"> Approvals required for both WWTPs (MECP, etc.) Will meet effluent criteria at future flowrates for both Russell and Embrun Large excavation required for Russell and Embrun Some compatibility with existing infrastructure after short-term upgrades implemented High ability for future expansion and phasing 		<ul style="list-style-type: none"> Approvals required (MECP, etc.) Will meet effluent criteria at future flowrates Moderate excavation required Some compatibility with existing infrastructure after Embrun's short-term upgrade implemented High ability for future expansion and phasing 	
Natural Environment	<ul style="list-style-type: none"> High impact to natural environment for both WWTPs, requires mitigation measures Increased GHG emissions with two (2) WWTPs No impact on receiving water as effluent limits achieved 		<ul style="list-style-type: none"> High impact to natural environment but localised, requires mitigation measure Reduced GHG emissions with one (1) WWTP No impact on receiving water as effluent limits achieved 	
Financial	<ul style="list-style-type: none"> High capital investment required High future expansion costs Potential for tank reuse of short-term solution Total Capital Costs: \$110M Net Present Value: \$140M 		<ul style="list-style-type: none"> Moderate capital investment required Moderate future expansion costs Potential for tank reuse of short-term solution Total Capital Costs: \$95M Net Present Value: \$115M 	
Overall	Alternative Not Recommended	X	Preliminary Preferred Alternative	

Sanitary Collection System Upgrades

- Existing pumping stations, sewers and forcemains may need to be upgraded to accommodate new development (development led funding).
- New pumping stations could be built in existing areas to free -up and reallocate pumping capacity in a more efficient manner (development led funding).
- New pumping stations to be added as required in new development areas (development led funding).



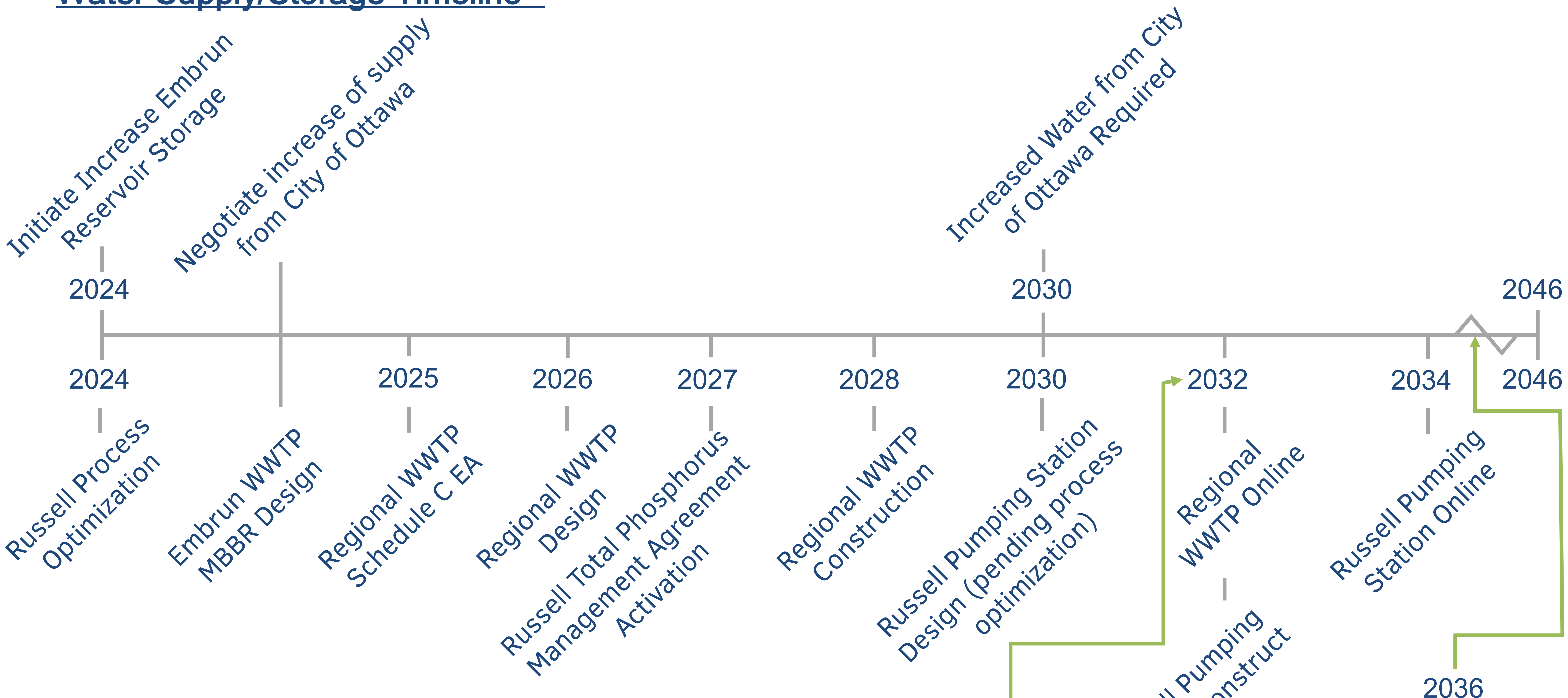
Embrun Sewage Pumping Station
Catchment Areas



Russell Sewage Pumping Station
Catchment Areas

Township of Russell Timeline

Water Supply/Storage Timeline*



Major Wastewater Infrastructure Timeline*

**Watermain and wastewater sewerage updated as required to accommodate projected future flowrates*



Embrun WWTP Existing Rated Capacity Reached

Russell WWTP Existing Rated Capacity Reached

Preliminary Preferred Water and Wastewater Servicing Alternatives

Summary of preliminary preferred alternatives:

Servicing Area	Preliminary Preferred Servicing Alternatives
Water Supply	Expansion of Existing Service from the City of Ottawa
Water Storage and Booster Pumping	Expansion of Embrun Reservoir and Russell/Embrun Booster Pumping Station Capacities
Russell Wastewater Treatment Plant	<p>Short Term Alternative: Process optimization, if unsuccessful review timeline to Regional plant or MBBR to reduce ammonia</p> <p>Long Term Alternative: Convert to pumping station to convey wastewater to Regional WWTP in Embrun</p>
Embrun Wastewater Treatment Plant	<p>Short Term Alternative: MBBR to reduce ammonia concentrations</p> <p>Long Term Alternative: New Regional Wastewater Treatment Plant to service Russell and Embrun</p>

Municipal Class EA Requirements

Summary of Municipal Class Environmental Assessment requirements for each project identified in this Master Plan.

No further Class EA Requirements

- Expansion of Existing Water Service from Ottawa
 - Pending discussions with City of Ottawa

Schedule C

- New Regional Wastewater Treatment Plant

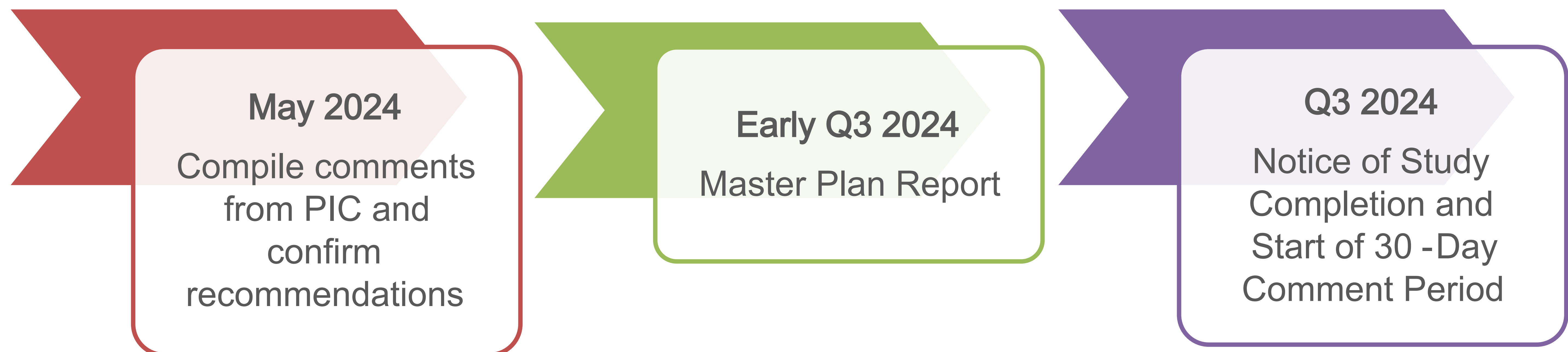
Exempt

- Russell Wastewater Treatment Plant Short Term Upgrades
- Embrun Wastewater Treatment Plant Short Term Upgrades
- Expansion of Embrun Water Reservoir
- Pumping Capacity Increase of Russell and Embrun Water Booster Pumping Station

What are the Next Steps?

After this Public Information Centre, the project team will:

- Review and consider input received during this meeting.
- Confirm the preliminary recommendations presented tonight for the Township's water and wastewater servicing alternatives.
- Prepare a Master Plan Report summarizing the study findings.
- Notice of Study Completion and Master Plan Report on the public record for comments during a 30 -day comment period.



Next Steps & Comments

Questions or comments?

Should you have any questions about this presentation or the project, please fill out a comment sheet tonight or contact:



Municipalité de
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Township

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**Please provide your comments and questions
by May 29, 2024**