



South Huron Water and Wastewater Master Plan Public Information Centre

**April 16th, 2024 – 6:00 p.m. to 8:00 p.m.
South Huron Recreation Centre
94 Victoria Street East, Exeter ON**

Public Information Centre (PIC) Objectives



Present the Master Plan objectives and recommendations.



Present the environmental assessment process.



Present technical background relevant to the development of servicing recommendations.



Receive feedback on the study process, and recommendations.

Key Dates

- Notice of Study Commencement – Oct 2, 2023
- **PIC – April 16, 2024**
- Notice of Completion – May 2024

PIC Materials are available on the project website:
<https://www.southhuron.ca/en/government/south-huron-water-and-wastewater-master-plan-update.aspx>



Stay Engaged!

- ✓ Please sign in and take a comment sheet.
- ✓ Have a look at the project information on display and chat with the Project Team.
- ✓ Provide your feedback regarding the information presented.

What is Driving the South Huron Water and Wastewater Master Plan?



Responsible Management

- Essential to Revisit Needs Periodically
- Support Other Needs (Capital Program, Utility Rates, Development Charges, Etc.)
- Long-Term Plan for a Water Distribution System is a Regulatory Requirement (DWQMS) to Own/ Operate a Drinking Water System

Planning for Buildout

- Support Responsible Development
- Supply and Treatment Capacity
- Flexibility in Servicing Strategy

Capital Program Development

- Coordination and Consolidation of Renewal and Growth Needs
- Long-Term Visioning of System Needs

Long-Term Financial Planning

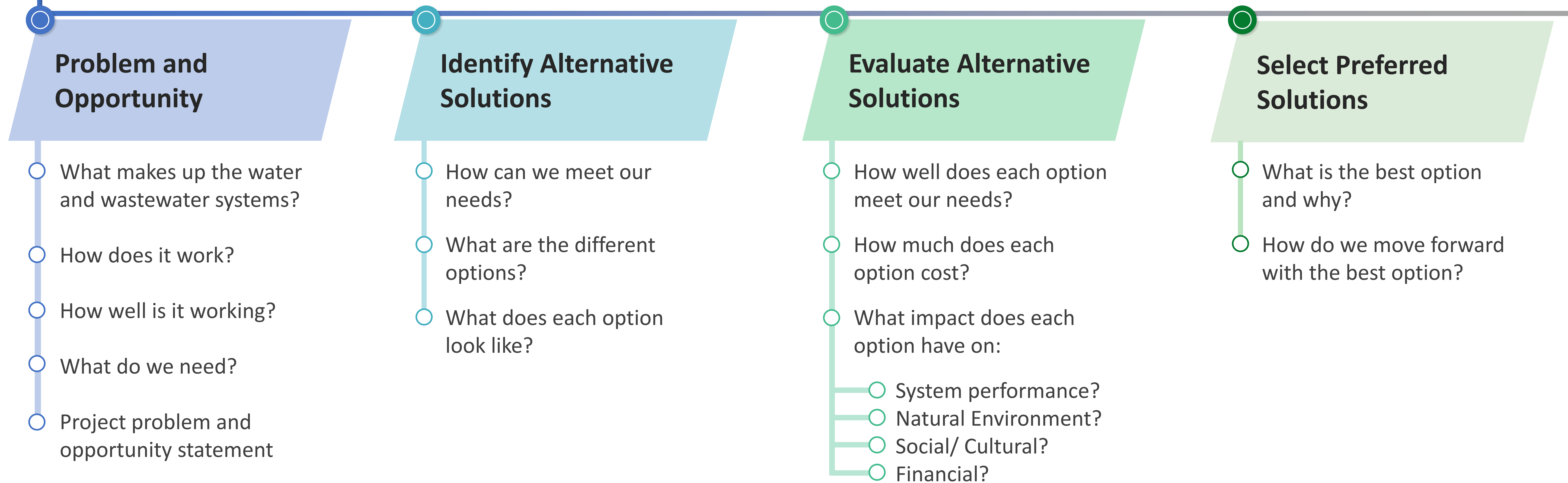
- Understanding of Servicing Impacts and Costs
- Capital Forecast to Service Existing and Support Future Growth

South Huron Master Plan Water and Wastewater Objectives

- Review and integrate the servicing needs to support existing system needs and support the buildout of the settlement area boundary; including allowances for future expansion of the existing settlement area boundaries;
- Review planning forecasts and determine the impacts on servicing needs for the Municipality's water and wastewater infrastructure;
- Re-evaluate growth needs and water supply and wastewater treatment capacities;
- Develop water and wastewater servicing solutions that include flexibility in servicing strategy and understanding of servicing impacts and costs; and,
- Update the long-term financial planning that includes a capital forecast to service existing and support growth and can be used as basis for development charges and water, wastewater utility rate updates, and DWQMS.

The South Huron Water and Wastewater Master Servicing Plan involves the completion of Phases 1 and 2 of the MEA Municipal Class EA process.

Environmental Assessment Process



The study follows the Master Plan process as outlined in Section A.2.7 of the Municipal Engineers Association (MEA) Municipal Class Environmental Assessment (Oct 2000, as amended in 2007, 2011 and 2015).

Growth Uncertainty

- Location of growth – What infrastructure is needed?
- Rate of growth – When is infrastructure needed?
- Servicing outside existing Settlement Area Boundaries

Draft Plans and Concepts

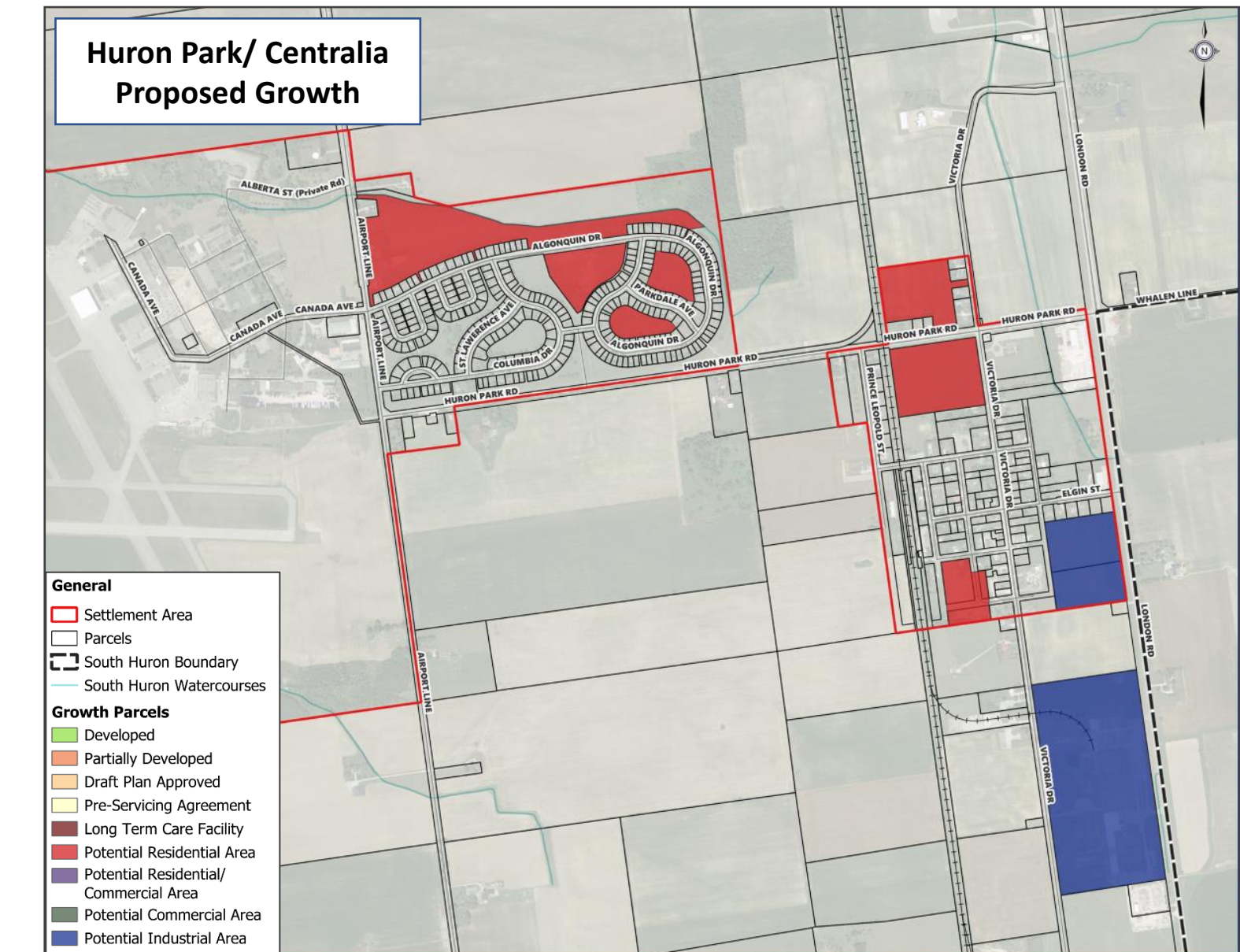
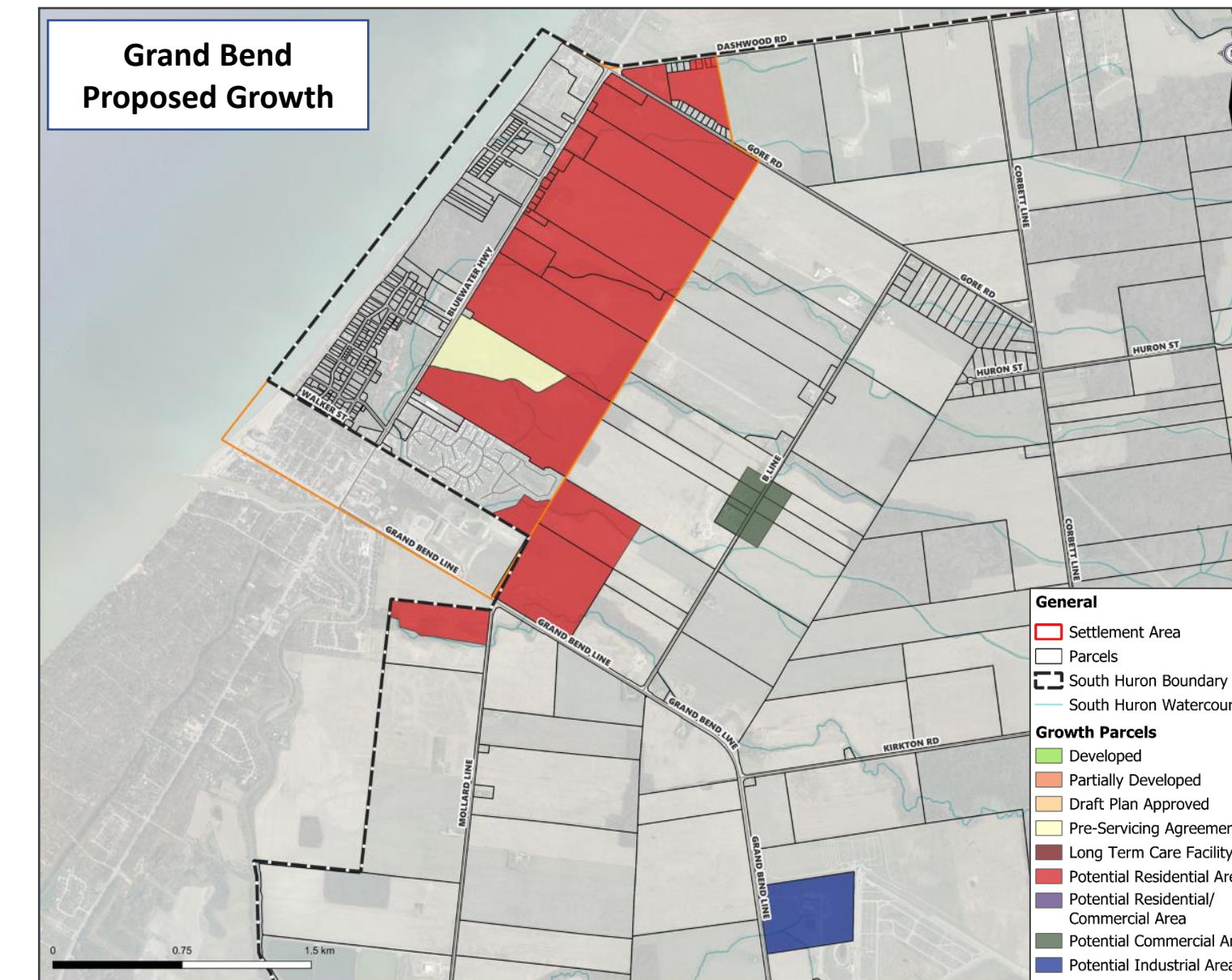
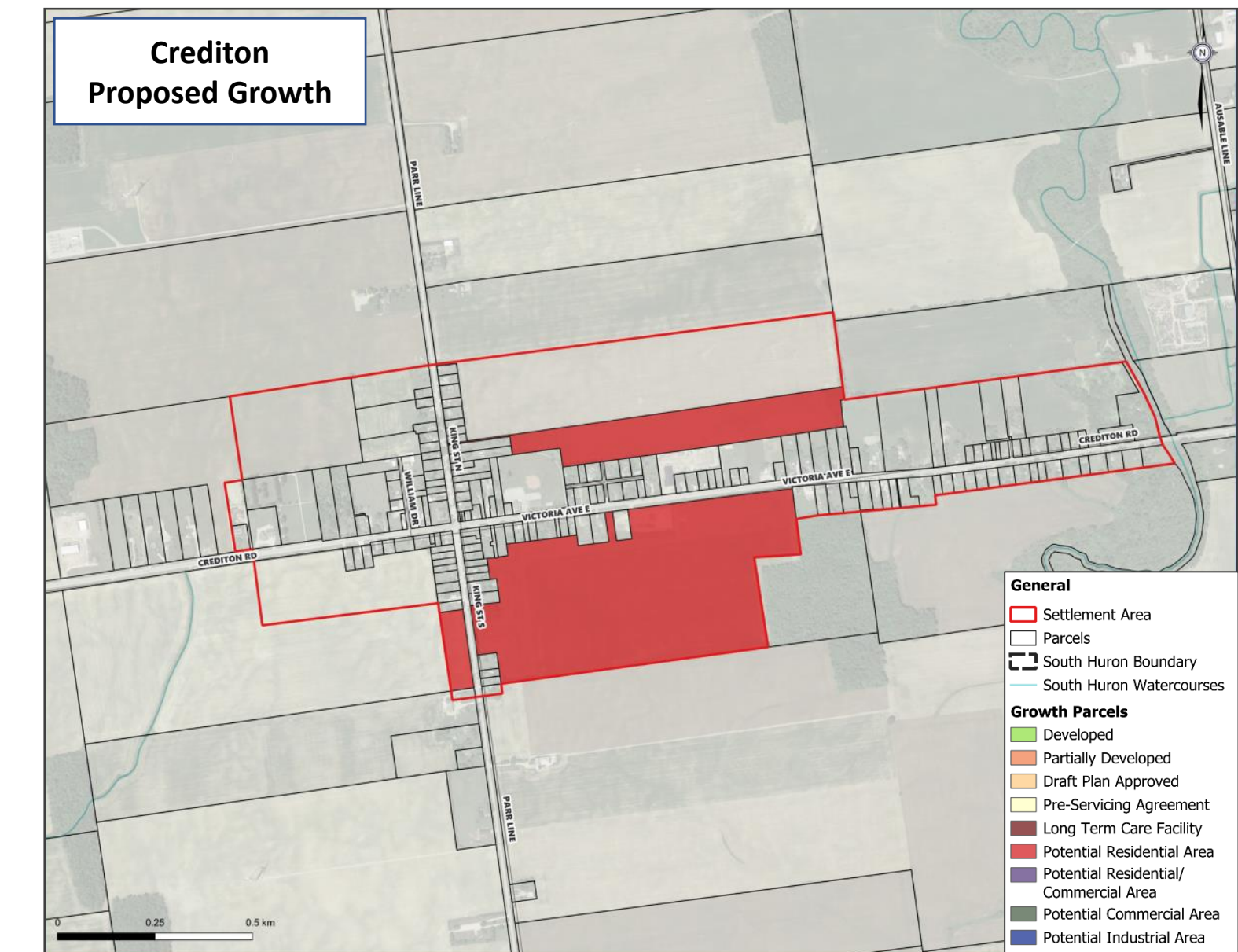
- Where available approved draft plans or Developer’s concept plans were used to project growth

Remaining Development Lands

- For potential development lands, growth has been projected based on:
 - Where development units were known: 2.3 people per unit
 - Where units were unknown: 40 people per hectare

South Huron Master Servicing Plan Focuses on Buildout Potential

- Clarity in long-term needs
- Flexibility to respond to changes
- Helps to guide and manage growth



Location	Area (ha)	Units	Potential Population
Centralia	33.6	13	1,236
Exeter	180.7	1,620	6,181
Grand Bend	317.5	2,105	6,684
Crediton	42.3	345	1,091
Huron Park	16.3	146	445
Total	590.5	4,229	15,639

Criteria Scoring and Selection

For each individual project, the evaluation of each criteria will be completed using the following ranking approach:

- “High” Solution generates beneficial impacts and/or has no substantial technical challenges
- “Medium” Solution to a mix of positive and negative elements with some impacts
- “Low” Solution presents permanent negative impacts and/or presents significant technical challenges

Selection will be guided by the **Reasoned Argument Approach**

Clear and thorough rationale of the tradeoffs among the various criteria

Highlights the reasons why one alternative is the best alternative



Environmental Factors

- Protects environmental features.
- Protects wildlife and species-at-risk.
- Minimizes climate change impacts.



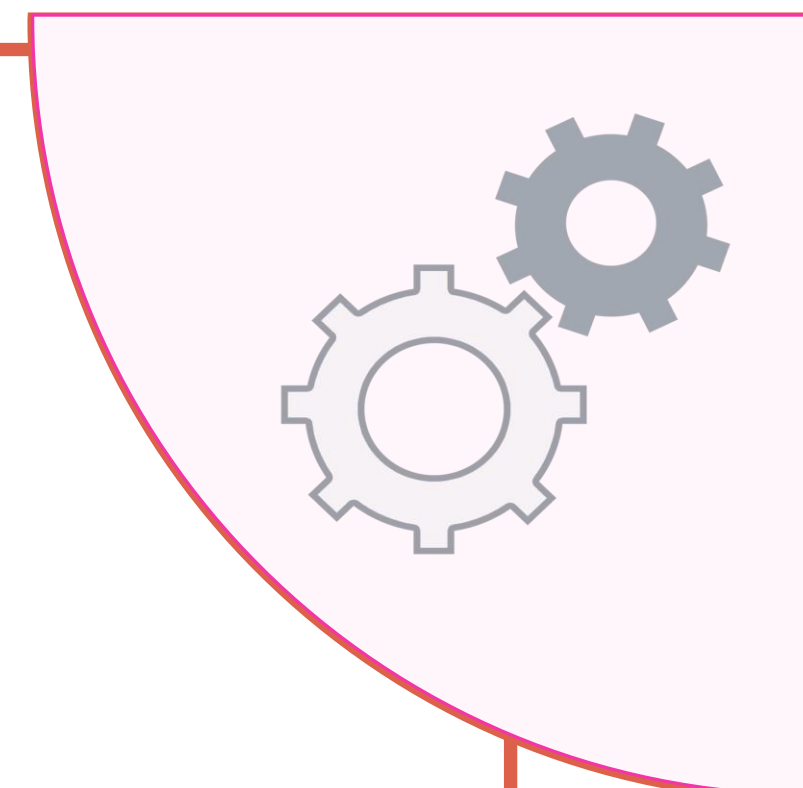
Financial Viability

- Capital and life-cycle costs.
- Operation and maintenance costs.



Technical Factors

- Meets existing and future servicing needs.
- Supports phased expansion of the system.
- Provides a reliable service.
- Minimizes and manages construction risk.
- Aligns with approval and permitting process.
- Ability to adapt to climate change.



Social and Cultural Factors

- Protects resident quality of life.
- Manages and minimizes construction impacts.
- Protects cultural heritage features.
- Protects archaeological features.



Existing Water System



Supply

- Water supply originates from Lake Huron and is treated at the Lake Huron Primary Water Supply System (LHPWSS). The LHPWSS delivers water to five connection points in the Municipality's water system which typically divide the pressure zones

Pressure Zones

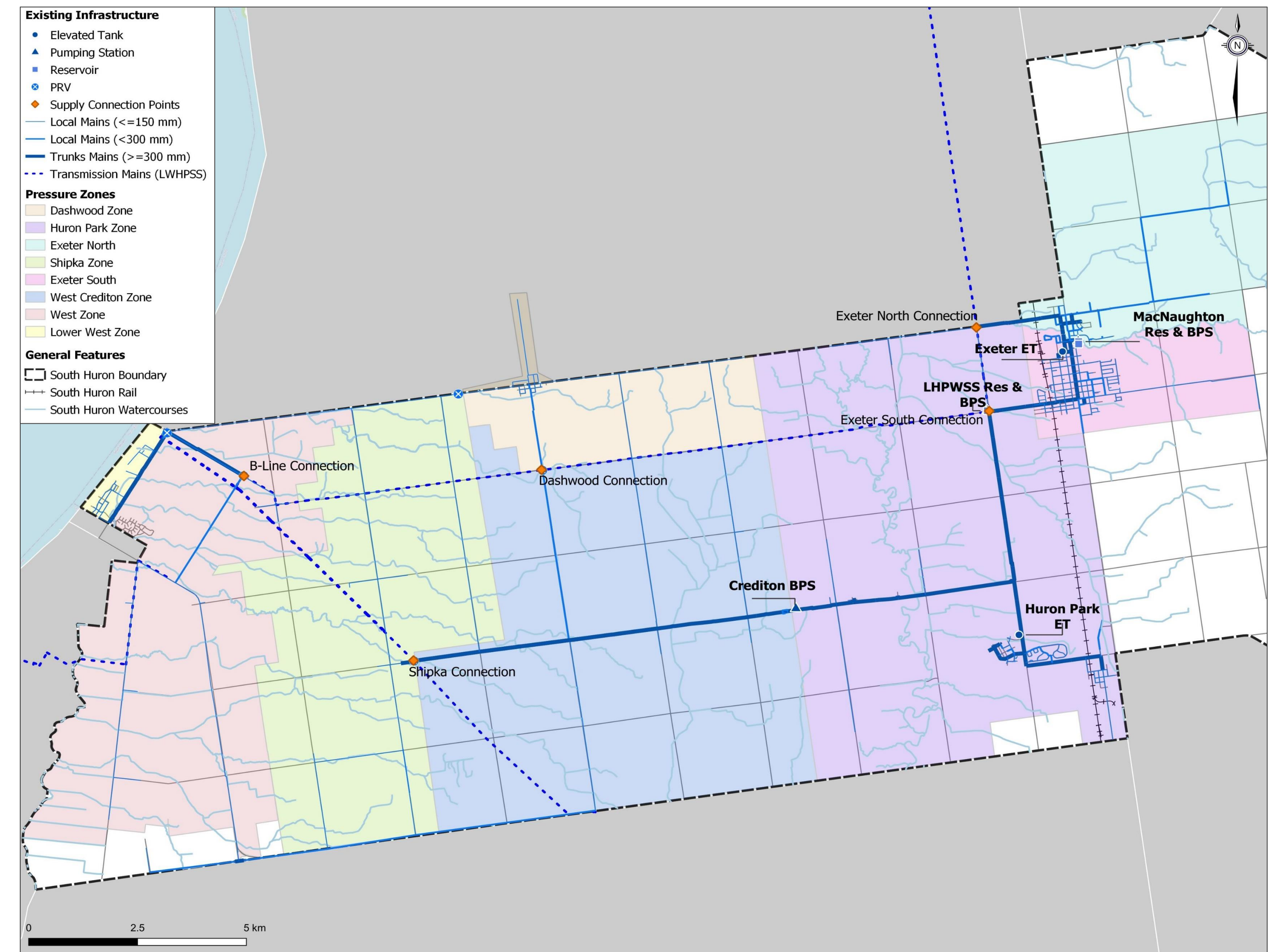
- Eight (8) Pressure Zones
- Boundaries typically consist of closed valves and pipes, and pressure reducing valves to decrease the pressure to the acceptance range of level of service

Storage

- Two (2) Elevated Tanks (ET); Huron Park ET, Exeter ET, and one (1) Reservoir (Res); MacNaughton Res operated by the Municipality
- One (1) Reservoir; Airport Line and Huron Street Res owned and operated by the LHPWSS

Pumping

- Two (2) Booster Pumping Station (BPS); Crediton BPS and MacNaughton BPS



South Huron Existing Demands	
Pressure Zone	Average Day Demand (L/s)
Lower West & West	12.6
Shipka	1.7
Dashwood	4.0
West Crediton	0.9
Huron Park	5.5
Exeter South	11.3
Exeter North	8.9
Total	44.9

Water Servicing – Exeter Pressure Zones



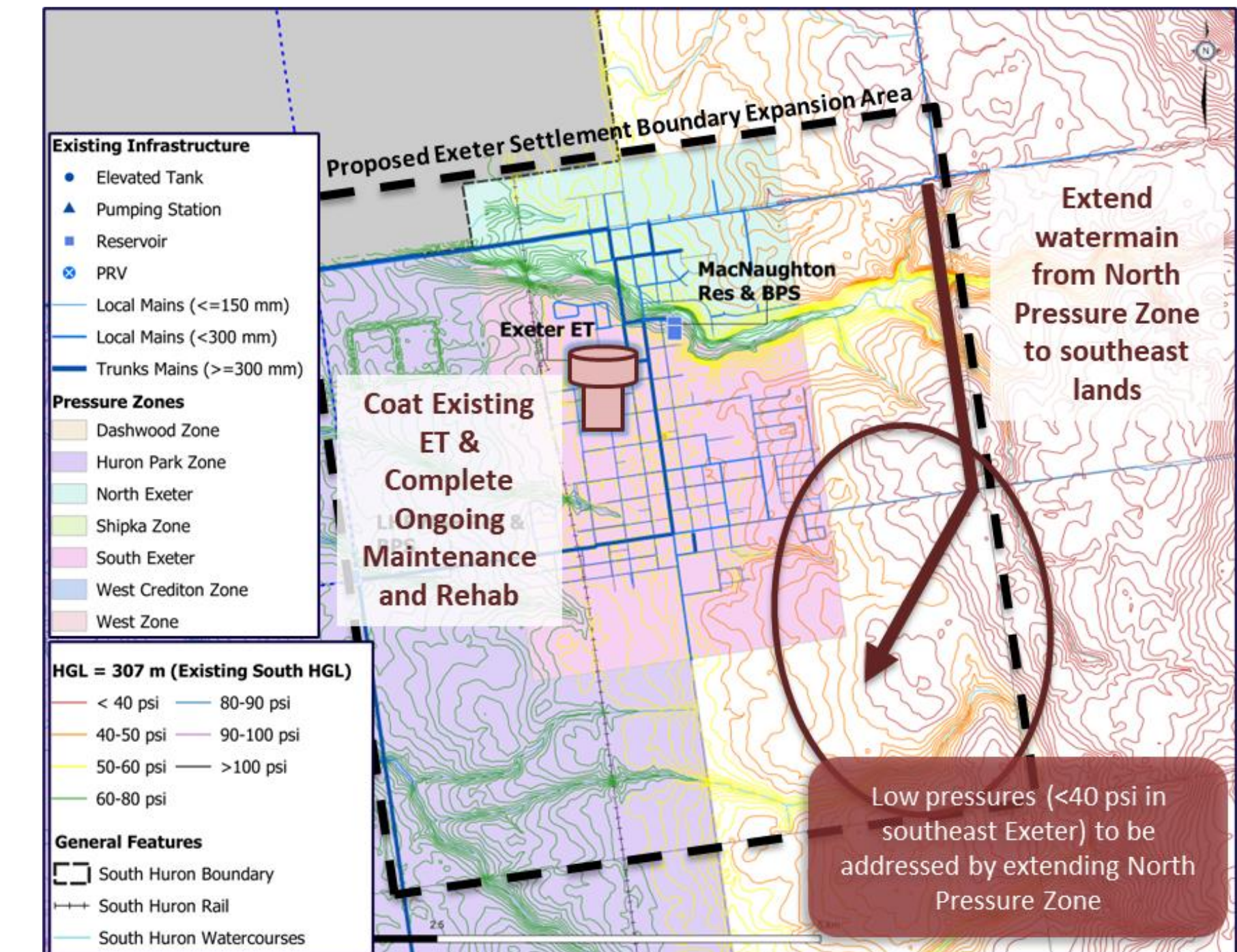
Alternative 1: Maintain Two Pressure Zones

Advantages:

- Existing storage within Exeter is sufficient to service existing and proposed growth; utilizes existing storage capacity
- No significant construction challenges
- Operate Exeter ET in parallel with Huron Park ET
- Maximizes use of existing pumping and storage facilities

Disadvantages:

- Existing Exeter ET will require ongoing upgrades including recoating the interior which will be cost prohibitive
- No operational improvements or additional system flexibility
- Low pressures in southeast Exeter due to existing topography
- Dependence on longer conveyance for growth in southeast Exeter
- Additional O&M to operate two pressure zones and maintain reliability of existing Exeter ET



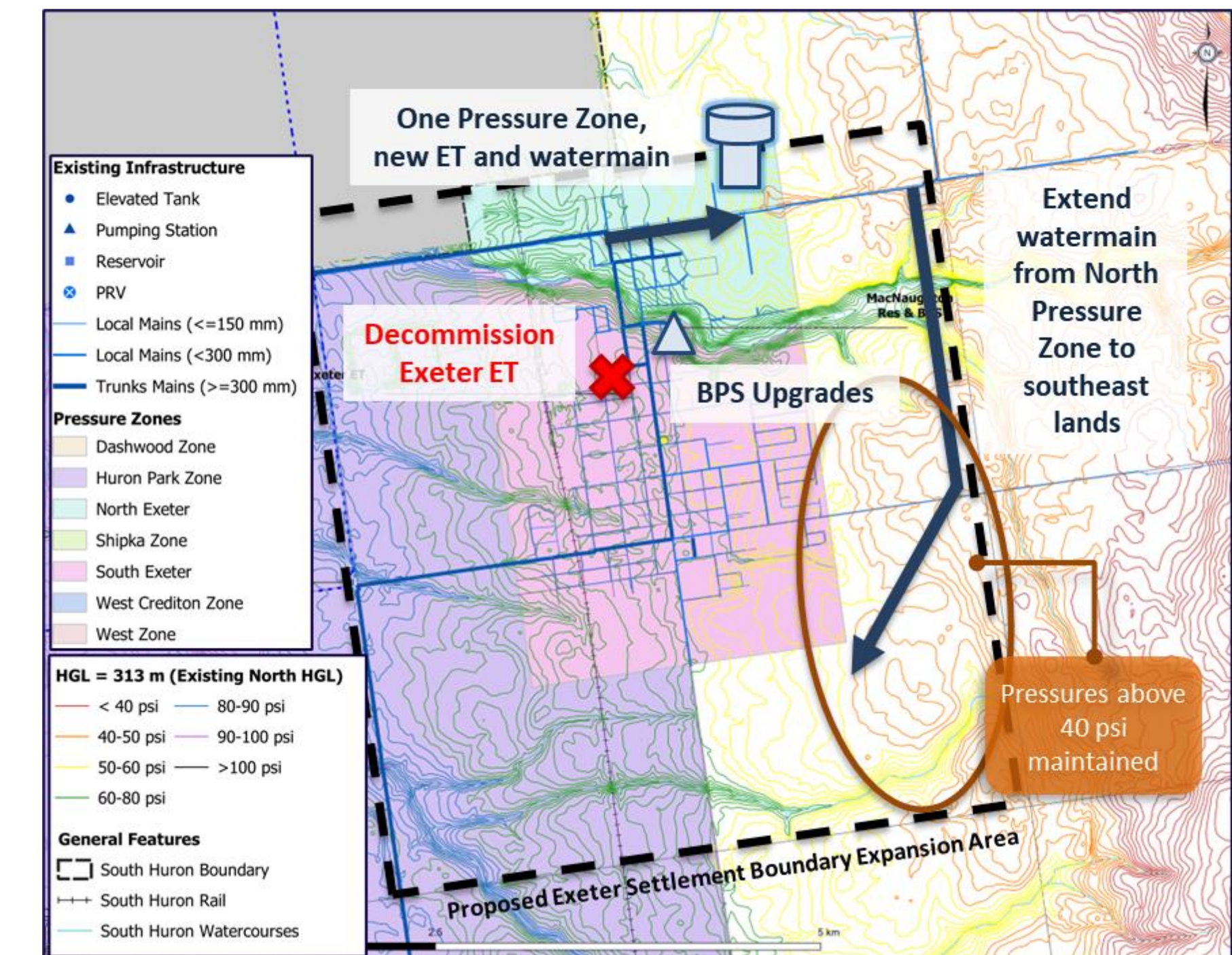
Alternative 2: Operate Exeter as One Pressure Zone at a Higher HGL

Advantages:

- Pressures can be optimized
- Location of new ET can be optimized to reduce infrastructure required Provides greater hydraulic benefit and system looping
- Reduced O&M costs due to new ET

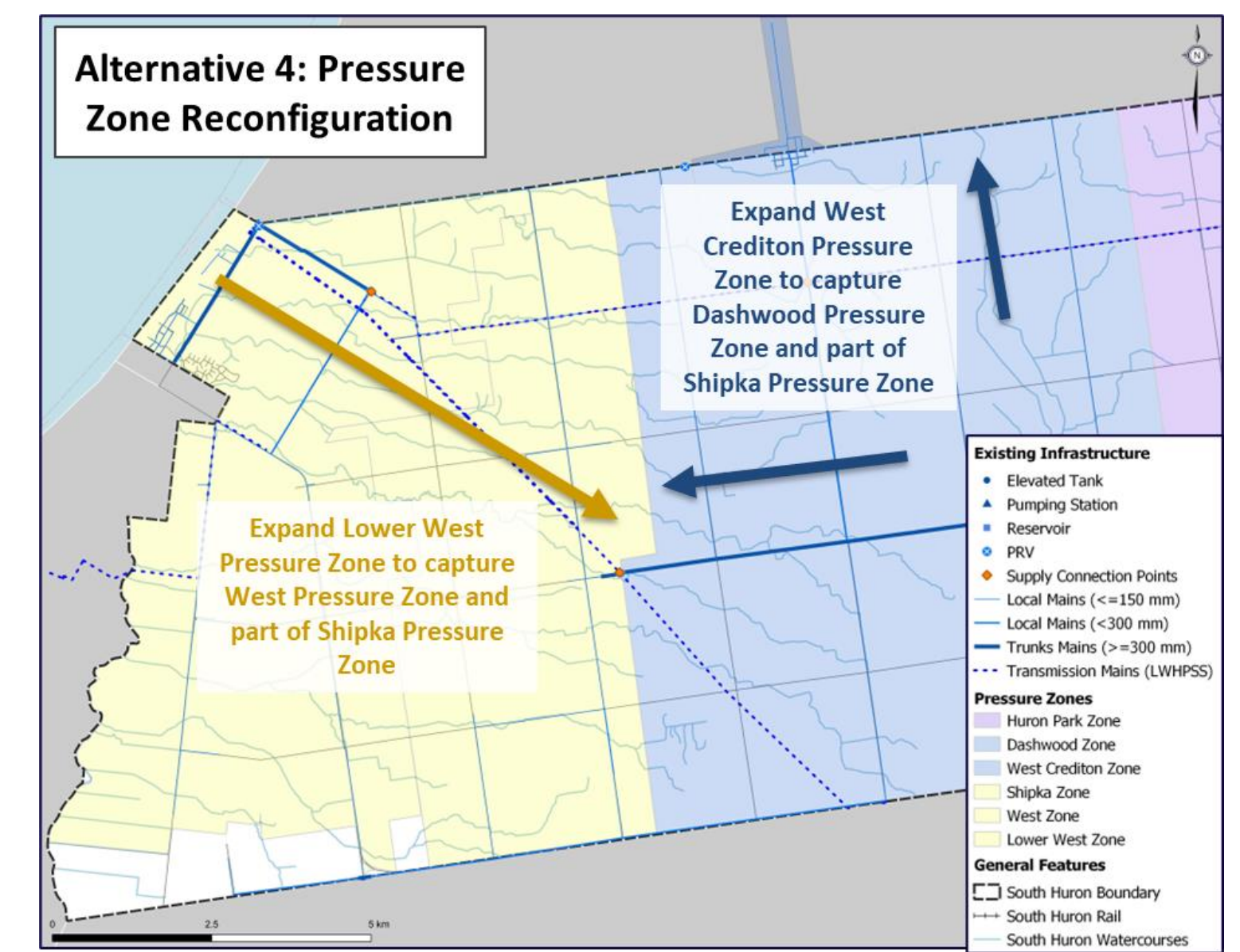
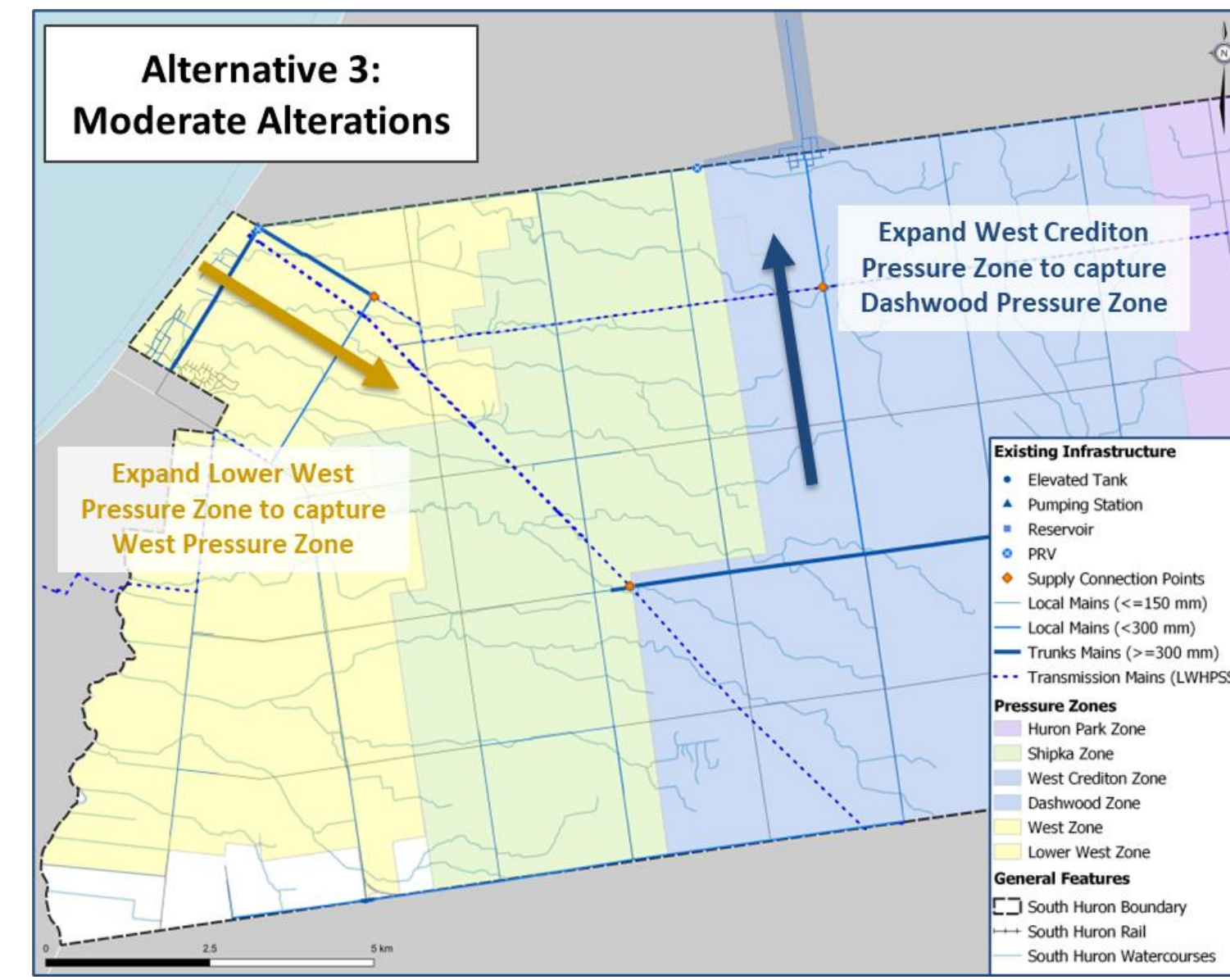
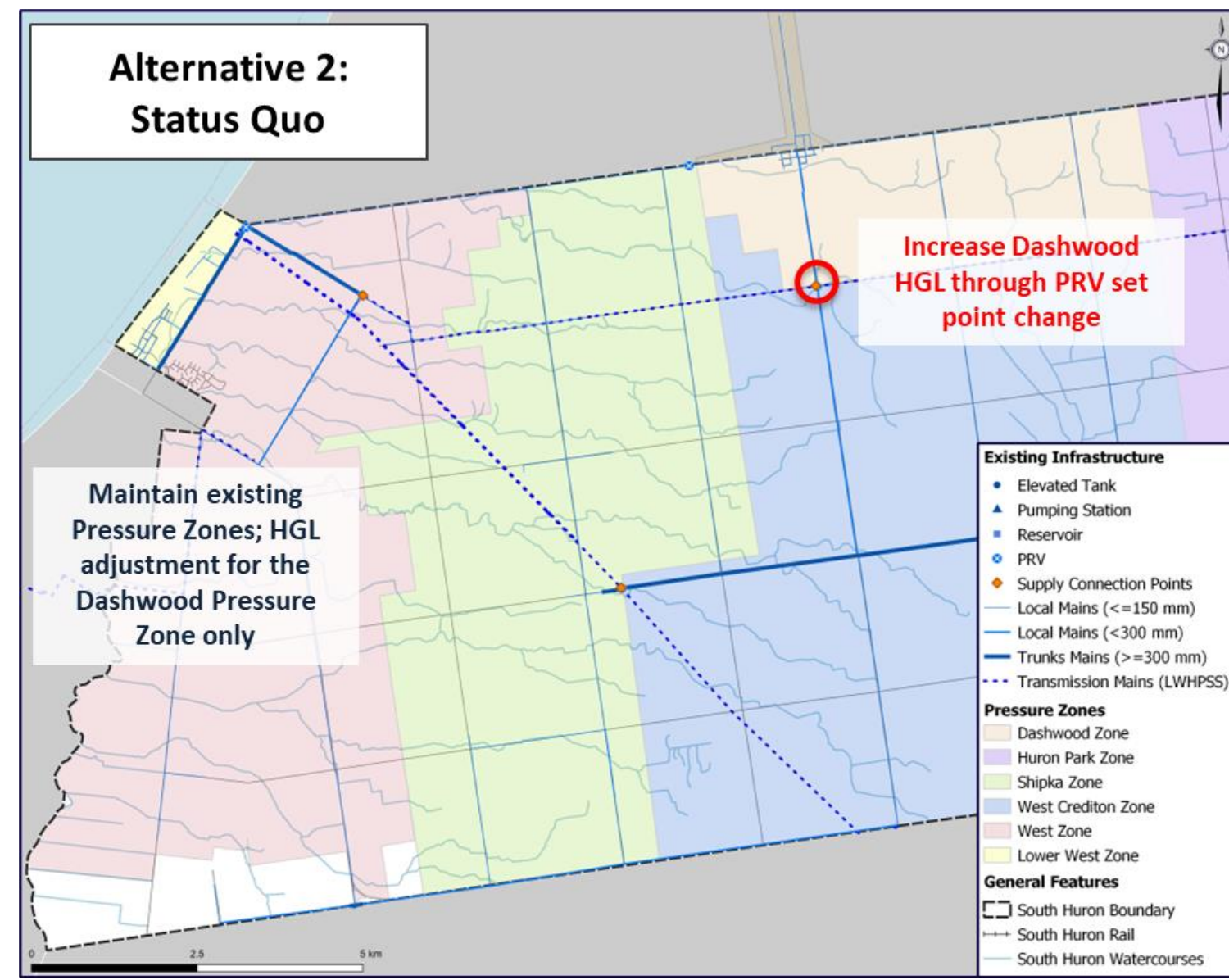
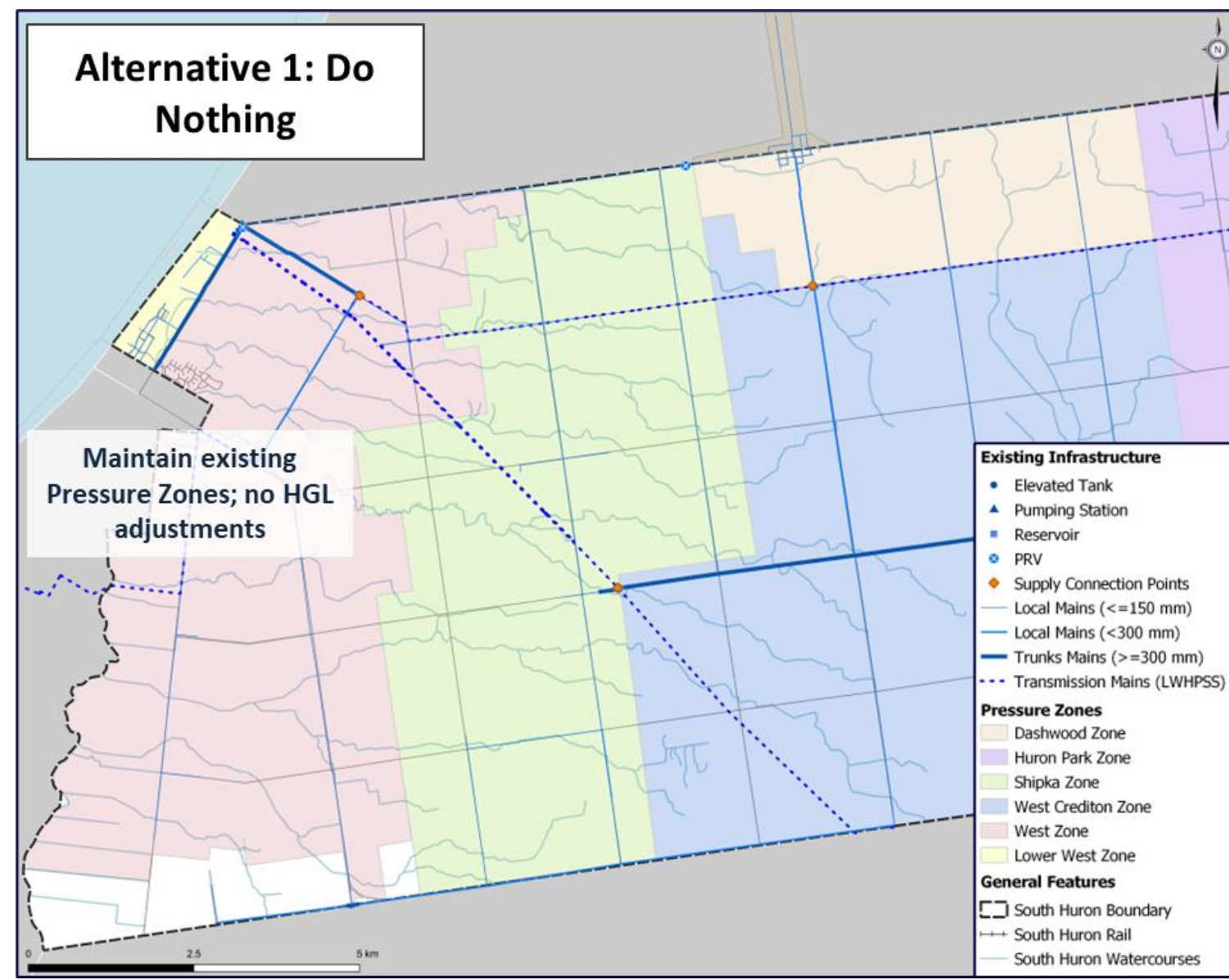
Disadvantages:

- Land acquisition could result in potential delays for new ET
- ET will be oversized until growth lands are constructed
- Construction of storage facilities (especially highly visible elevated tanks) are historically opposed by area residents and businesses
- Increase in HGL for the new ET may require minor upgrades at the MacNaughton BPS and can no longer operate the Exeter ET in parallel with the Huron Park ET



Alternative	Technical Ranking	Environmental Ranking	Social and Cultural Ranking	Financial Ranking	Recommended Alternative
Alternative 1: Maintain Two Pressure Zones	Med	High	High	Low	Not Recommended: No improvements to system under existing or growth conditions
Alternative 2: Operate Exeter as One Pressure Zone	High	High	Med	Med	Recommended: Hydraulically, more beneficial and allows for future accommodation of growth lands

Water Servicing – Stephen Pressure Zones



Alternative 1: Do Nothing

Advantages:

- No new infrastructure
- Optimized system pressures with multiple pressure zones

Disadvantages:

- Level of service not met for all areas; low pressures eastern extent of Dashwood Pressure Zone
- No operational improvements

Alternative 2: Status Quo

Advantages:

- Minimal system operation updates
- Improvements for existing low-pressure areas in eastern Dashwood Pressure Zone

Disadvantages:

- Pressures at both ends of the Level of Service criteria within Dashwood; high pressure at western extent and low pressure at eastern extent

Alternative 3: Moderate Alterations

Advantages:

- Minimal to moderate system operation updates required
- Lower number of pressure zones to operate; operational improvements

Disadvantages:

- Some improved pressures for eastern Dashwood Pressure Zone
- Level of service still not met for eastern Dashwood Pressure Zone

Alternative 4: Pressure Zone Reconfiguration

Advantages:

- Lowest number of pressure zones to operate
- Some improved pressures for eastern Dashwood Pressure Zone

Disadvantages:

- Low and high pressures observed at new pressure zone boundaries due to large elevation change over pressure zone

Alternative	Technical Ranking	Environmental Ranking	Social and Cultural Ranking	Financial Ranking	Recommended Alternative
Alternative 1: Do Nothing	Med	Med	Low	High	Not Recommended: Does not improve system pressures
Alternative 2: Status Quo	High	Med	Med	Med	Not Recommended: Improves Level of Service in Dashwood Pressure Zone; however, also increases risk of watermain breaks and issues from high pressures
Alternative 3: Moderate Alterations	High	High	Med	Med	Recommended: Moderate improvements to Level of Service and highest improvement for system operations
Alternative 4: Pressure Zone Reconfiguration	High	High	Low	Med	Not Recommended: Highest system risk for watermain breaks due to high pressures needed to achieve Level of Service across entire Pressure Zone

Water Servicing – LHPWSS Shut Down Resiliency



Alternative 1: Backfeed from Huron Park ET

Advantages:

- No major infrastructure required or substantial changes to existing operations

Disadvantages:

- System only has 34 hours under existing Average Day Demand without maintaining fire storage (excluding Huron Park Pressure Zone)
- Heavily reliant on conveyance watermains

Alternative 2: Install a New ET in Stephen Pressure Zone

Advantages:

- ET location can be optimized to reduce infrastructure requirements
- Reduces risk by providing redundancy and increasing operational flexibility

Disadvantages:

- Potential negative public perception with new ET
- EA and land acquisition required

Alternative 3A: Backfeed from Airport Reservoir: No Additional Storage

Advantages:

- Utilize existing storage facilities
- System has 89 hours under existing Average Day Demand without maintaining fire storage
- Upgrades and piping localized to existing site

Disadvantages:

- Dependent on pumps at Airport Reservoir
- Higher energy usage
- High importance on watermain conveyance, specifically Airport Line watermain

Alternative 3B: Backfeed from Airport Reservoir: Twin Airport Reservoir

Advantages:

- Space is available for twinning
- Increased redundancy with additional 63 hours of storage compared to Alternative 3A

Disadvantages:

- Higher costs to twin reservoir
- Dependent on pumps at Airport Reservoir
- High importance on watermain conveyance, specifically Airport Line watermain

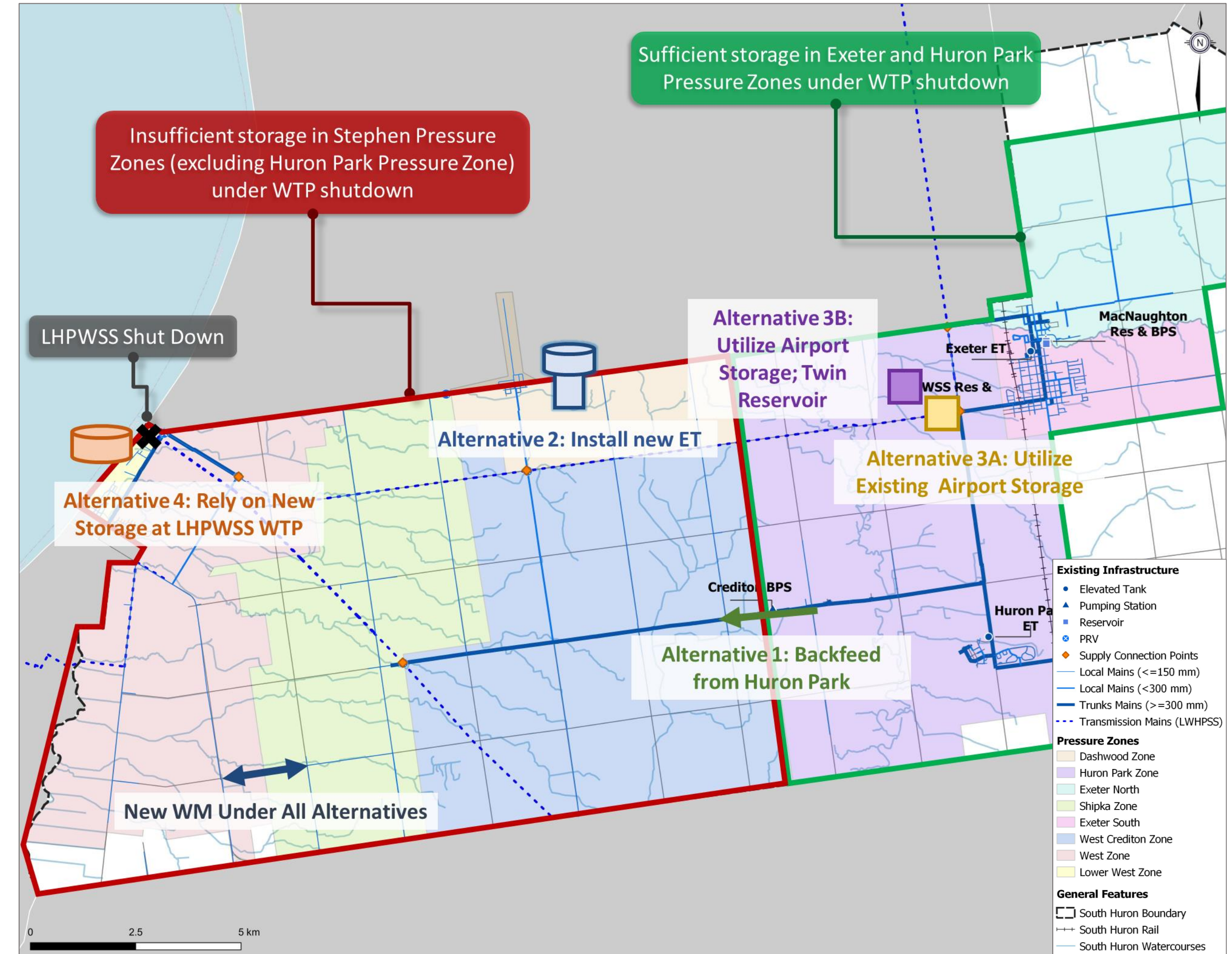
Alternative 4: Rely on New Storage at the LHPWSS WTP

Advantages:

- No municipal infrastructure required
- No substantial changes to current operations

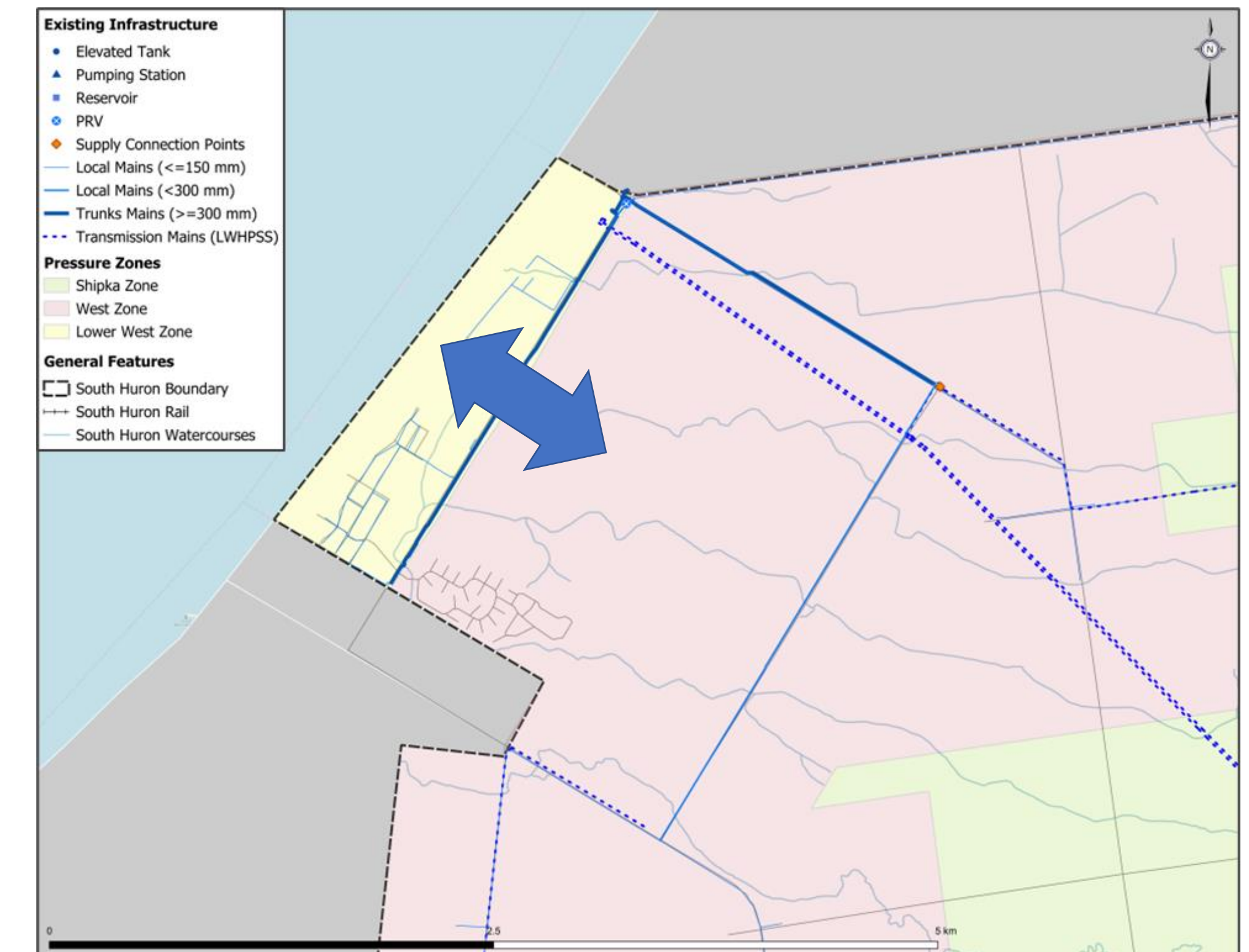
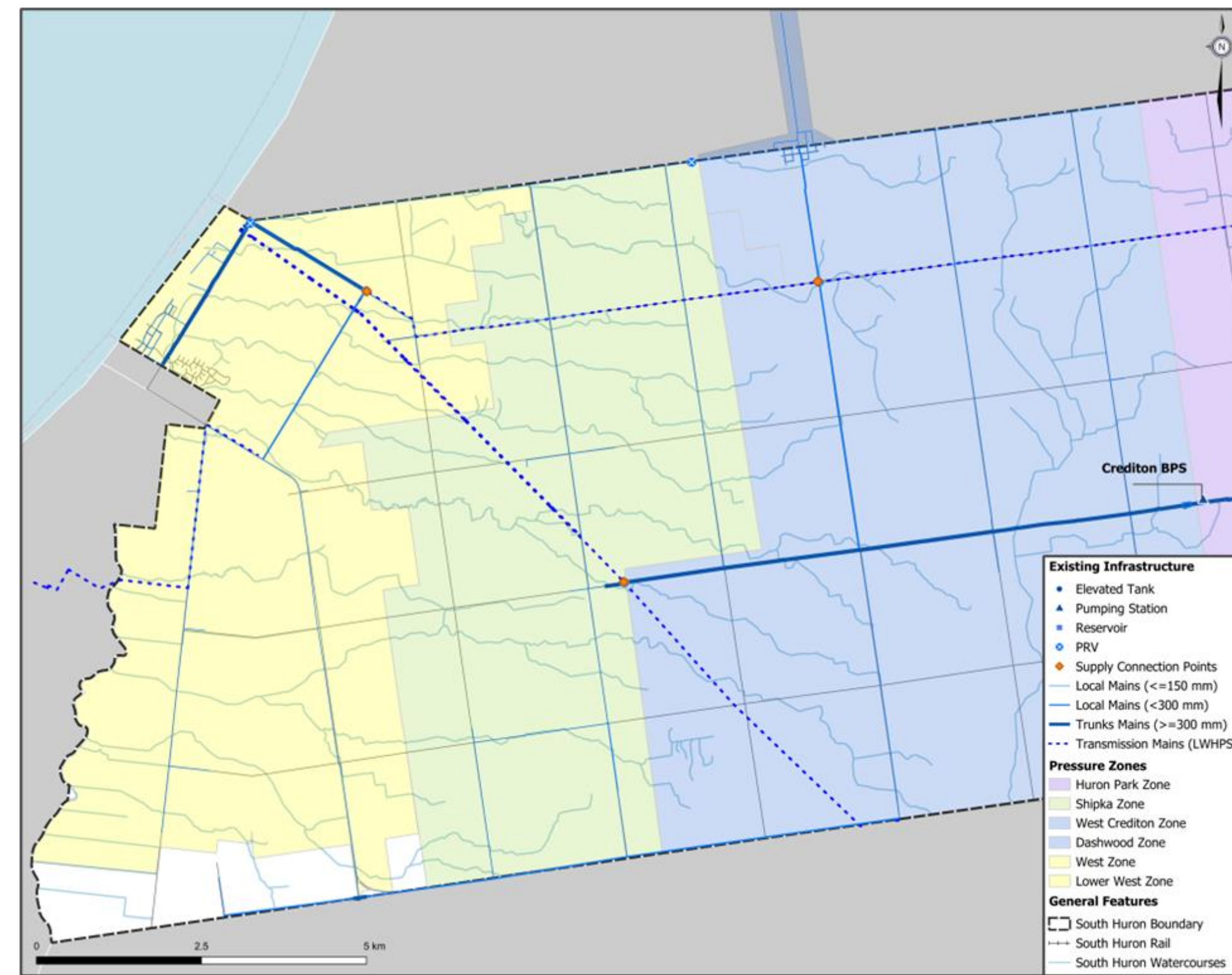
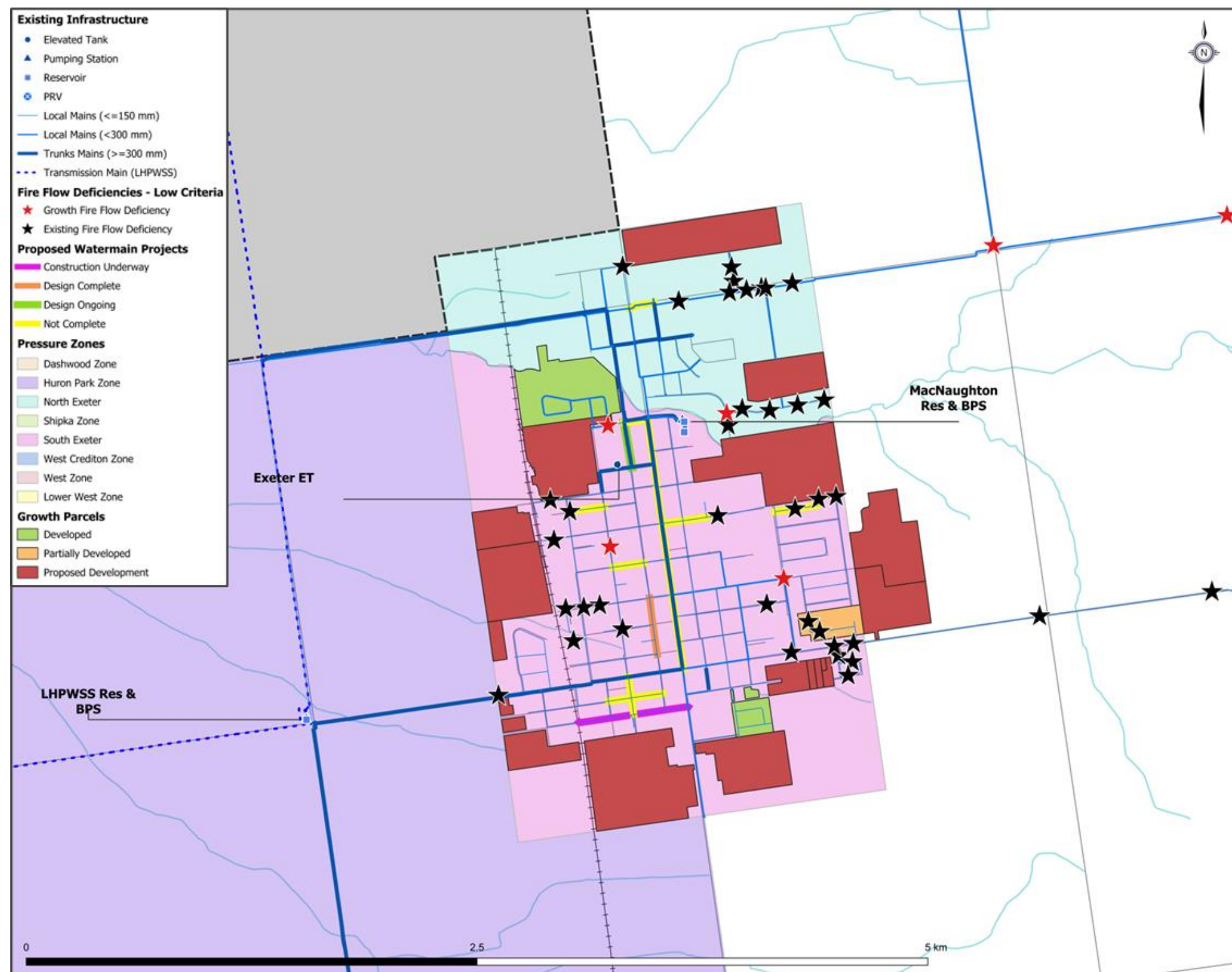
Disadvantages:

- Increased communications and partnership with LHPWSS
- Will not work under high-lift pump shutdown, unless additional backup pumps are installed



Alternative	Technical Ranking	Environmental Ranking	Social and Cultural Ranking	Financial Ranking	Recommended Alternative
Alternative 1: Backfeed from Huron Park ET	Low	High	Med	High	Not Recommended: Does not provide highest system resiliency with existing infrastructure
Alternative 2: Install a New ET in Stephen Pressure Zone	High	Med	Low	Low	Not Recommended: High costs and oversized storage infrastructure
Alternative 3A: Backfeed from Airport Reservoir: No Additional Storage	High	Med	High	High	Recommended: Provides greatest redundancy while utilizing existing infrastructure
Alternative 3B: Backfeed from Airport Reservoir: Twin Airport Res	Med	Med	High	Low	Not Recommended: High costs and oversized storage infrastructure
Alternative 4: Rely on New Storage at the LHPWSS WTP	Low	High	Med	High	Not Recommended: Not a reliable solution; dependent on extent of LHPWSS shutdown

Water Servicing – Localized Upgrades



Local Watermain Needs

- Local watermains connect to the strengthened trunk watermain network
- Adjustments to the Municipality's local watermain network, to improve local fire flows, are typically needed along dead ends, along cast iron watermains, or for higher fire flow criteria areas
- The replacement process to improve these fire flows is:
 - Creating loops through proposed development where feasible
 - Replacement of watermain at the same time as planned road reconstruction
 - Replacement of aging or small diameter watermains

Non-Revenue Water (NRW) Program

- There are areas within the Stephen water system that have been identified as having significant water leakage issues.
- To reduce the NRW, it is recommended that the Municipality implement a targeted Non-Revenue Water Reduction Program including the following:
 - Leak detection program for watermains
 - Watermain replacement program
 - Improved tracking of unbilled authorized users and development of demand reduction strategies:
 - Boundary Water Meter Program
 - Improved monitoring and enforcement of new construction water uses

Lower West and West Pressure Zone Merging

- High water pressure in the West Pressure Zone due to the high pressures currently used to supply the Municipality of Bluewater from the LHPWSS.
- Installing a new separate feed to Bluewater will reduce water pressure within South Huron and also reduce costs associated with potential water loss due to these high pressures
- Will have a pressure reducing valve (PRV) in the water meter and Bluewater will have their own meter

Water Servicing – Capital Program

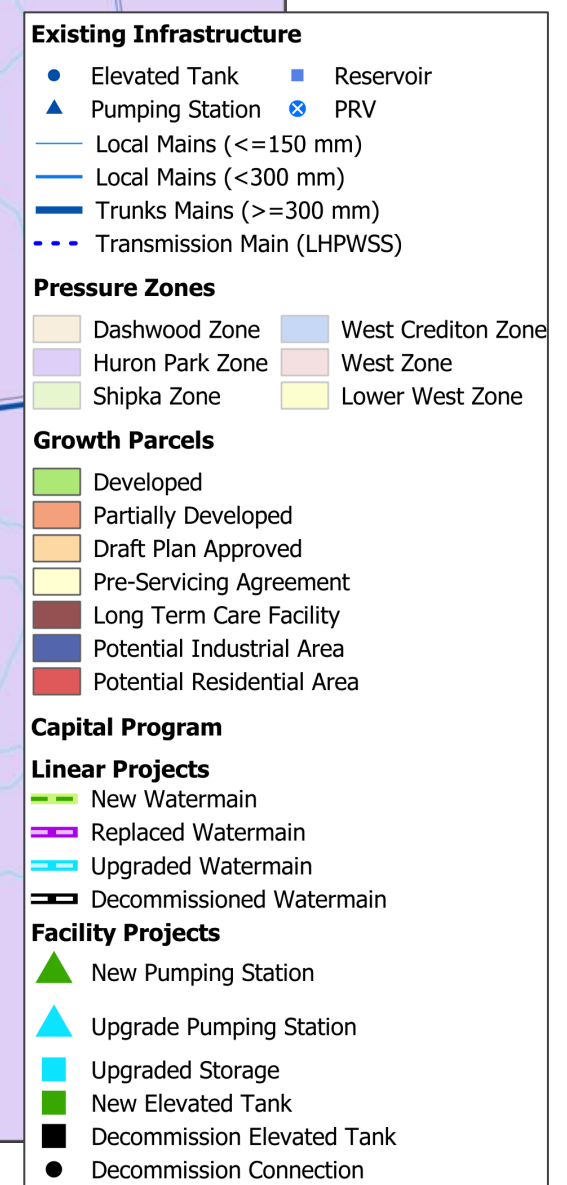
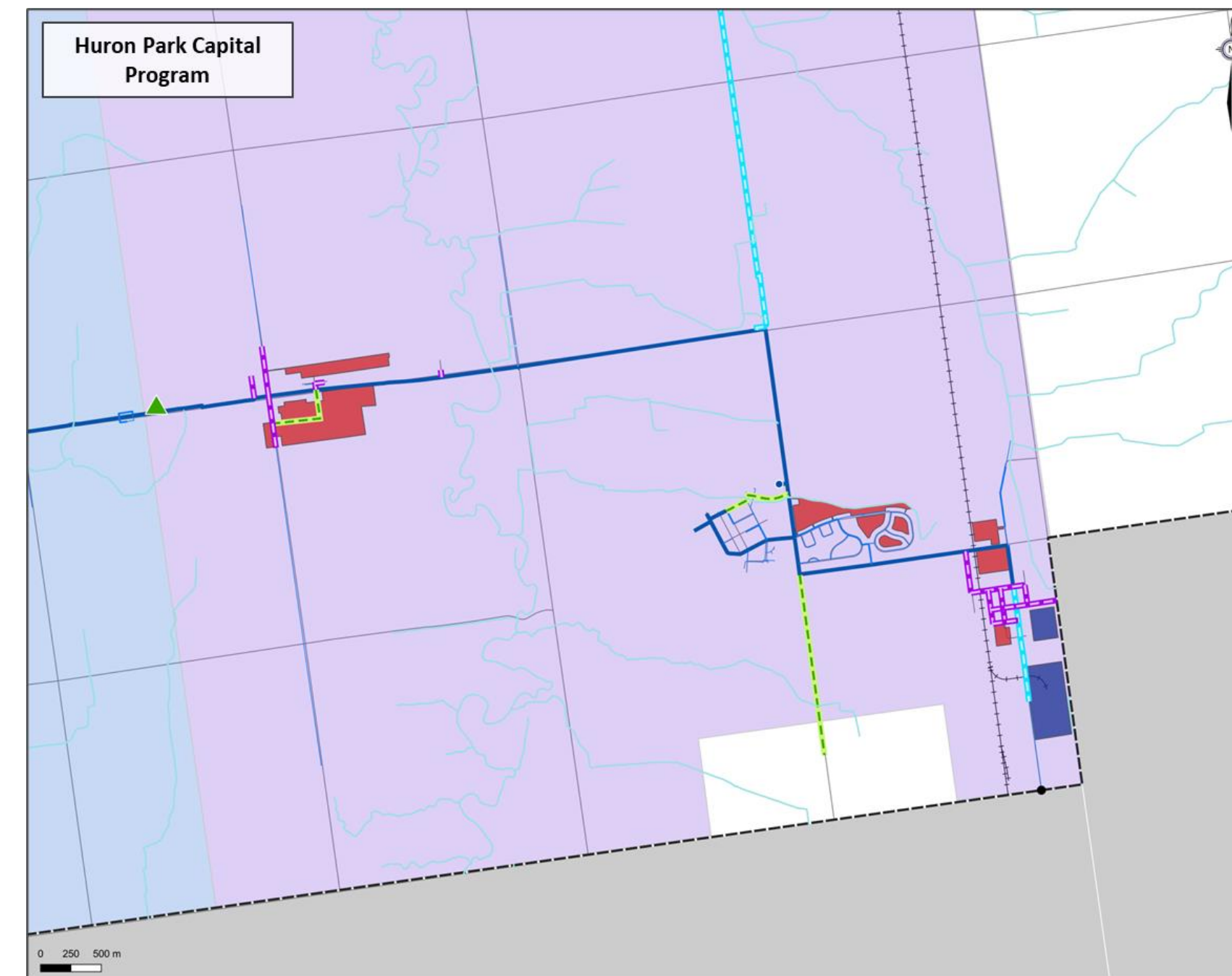
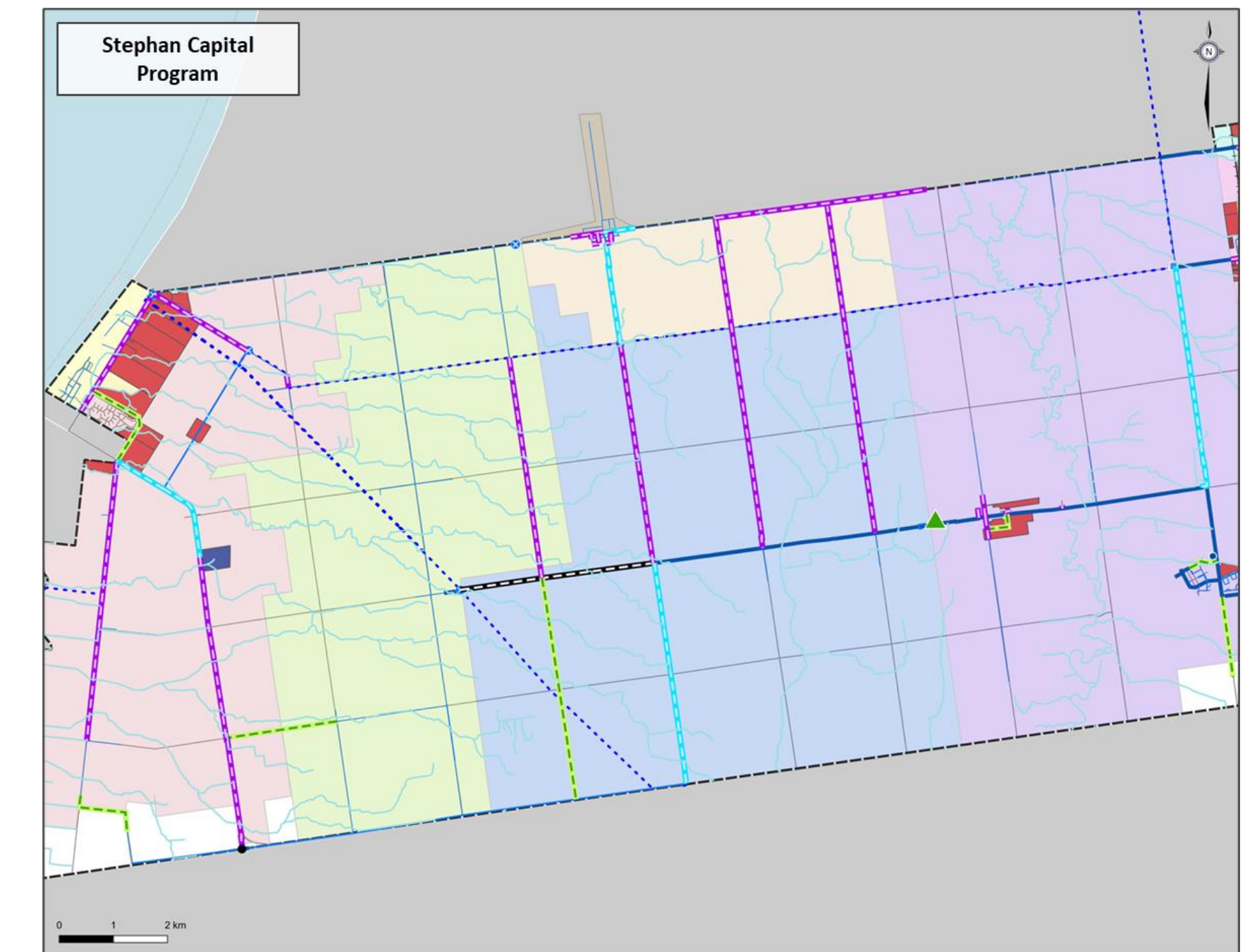
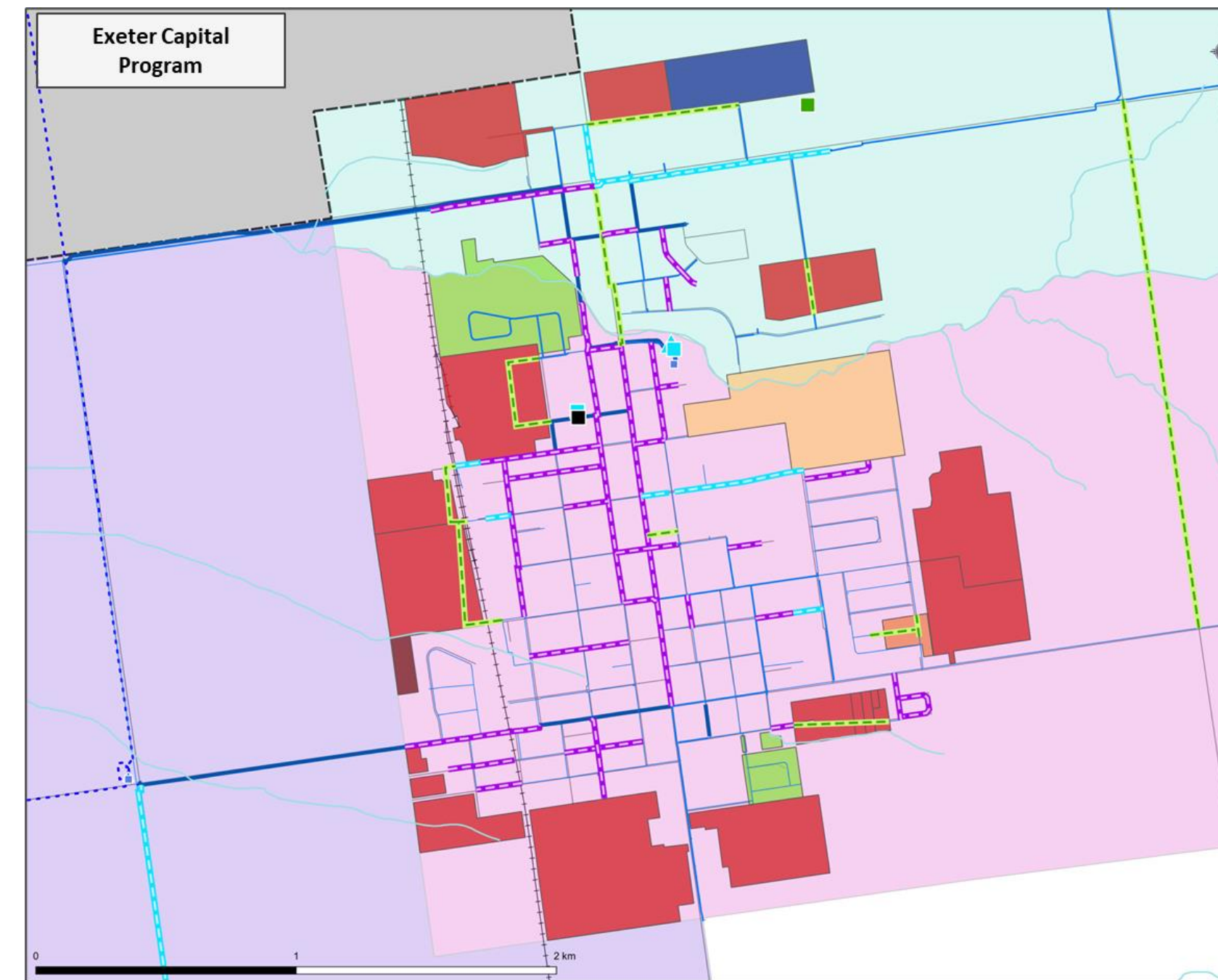


Preferred Water Capital Program - Exeter

- Align growth strategy and watermain looping with the ongoing road reconstruction projects to improve fire flows for existing and growth demand
- Install a new ET in North Exeter and operating Exeter as one Pressure Zone at a higher HGL
- New trunk watermain along Morrison Line from North Exeter to southeast Exeter for additional system flexibility and looping and improved pressures

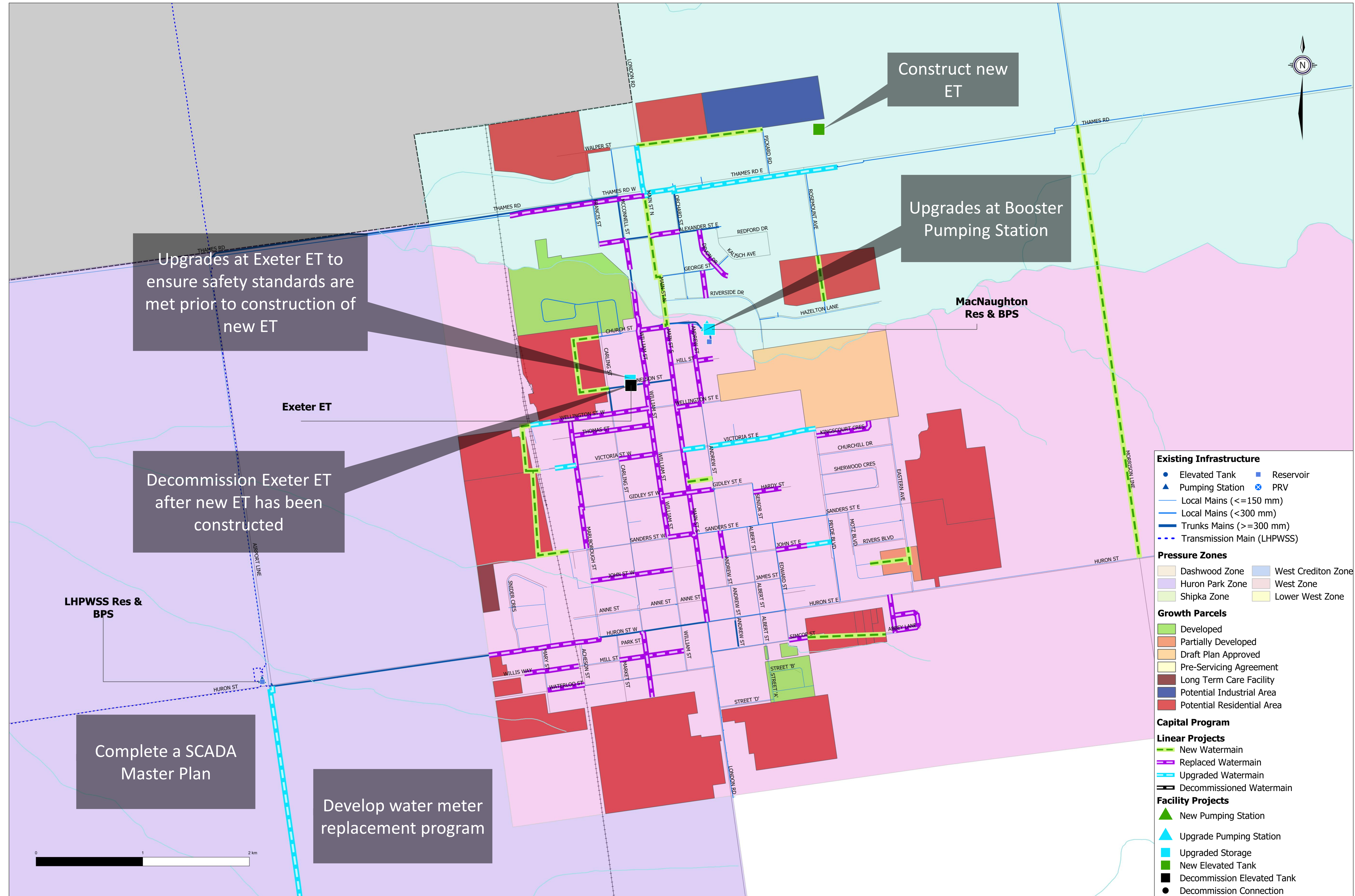
Preferred Water Capital Program - Stephen

- Stephen includes Stephen, Huron Park, and Crediton Capital Programs
- Moderate alterations to the existing Stephen Pressure Zones including expanding the Lower West Pressure Zone to capture the West Pressure Zone and expanding the West Crediton Pressure Zone to capture the Dashwood Pressure Zone
- Maximize existing storage infrastructure
- Increase system resiliency and water transfer in the Stephen southwest rural lands by installing a new watermain along South Road between Corbett Line and Grand Bend Line
- Investigation of the Airport Line watermain to determine existing condition and cause for frequent breaks
- Ensure logical watermain looping occurs in line with development pressures to address fire flow deficiencies
- Upsize conveyance watermain to Dashwood to achieve fire flow requirements throughout village
- Extend servicing to customers currently being serviced by North Middlesex and abandon current North Middlesex connections to reduce billing for South Huron customers
- Targeted NRW reduction program including:
 - Implement boundary water metering program of private and semi-private water systems
 - Leak detection program for watermains Water Metering Program in select areas to reduce high NRW currently experienced



Capital Project	Exeter Project Costs	Stephen Project Costs	Total Project Costs
Linear Projects	\$ 42,220,000	\$ 105,021,000	\$ 147,241,000
Facility Projects	\$ 13,981,000	\$ 500,000	\$ 14,481,000
Studies	\$ 560,000	\$ 850,000	\$ 1,410,000
Total Water Capital Project Costs	\$ 56,761,000	\$ 106,371,000	\$ 163,132,000

Water Servicing – Capital Program (Exeter)



Water Servicing – Capital Program (Stephen)



Water Servicing – Capital Program (Huron Park, Centralia, and Crediton)



Existing Wastewater System



Exeter Wastewater Treatment Facility (WWTF)

- The Exeter WWTF is a sewage lagoon that services the Town of Exeter, and villages of CREDITON, Huron Park and Centralia

Exeter Sanitary Pumping Stations (SPS)

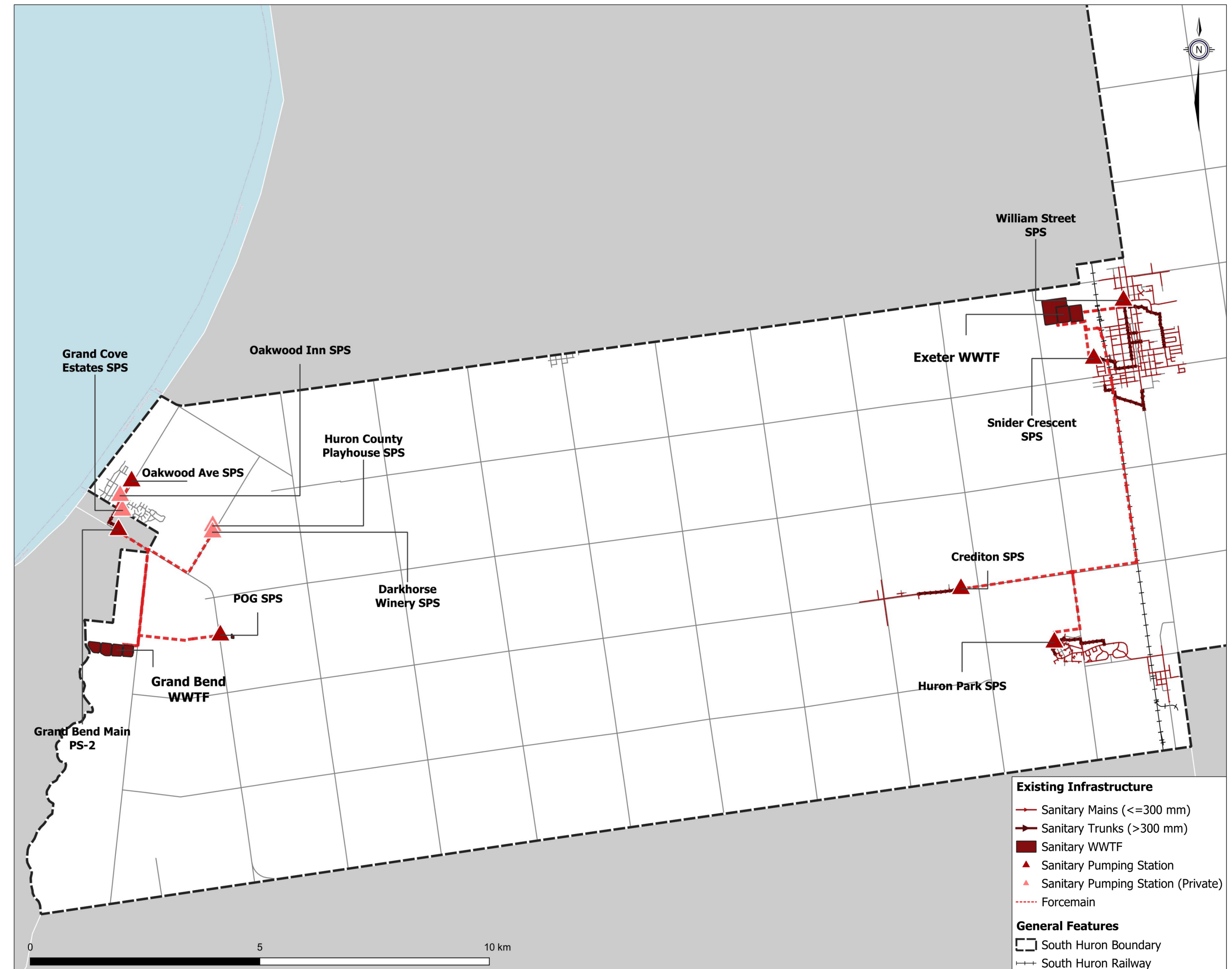
- Four (4) Sanitary Pumping Stations (SPS); William Street SPS and Snider Crescent SPS in Exeter, CREDITON SPS and Huron Park SPS that all pump wastewater to the Exeter WWTF

Grand Bend Wastewater Treatment Facility

- The Grand Bend WWTF is a mechanical treatment plant
- Jointly owned and administered by Lambton Shores and operated by Jacobs Engineering Group
- South Huron is allocated 35.7% of the plant capacity

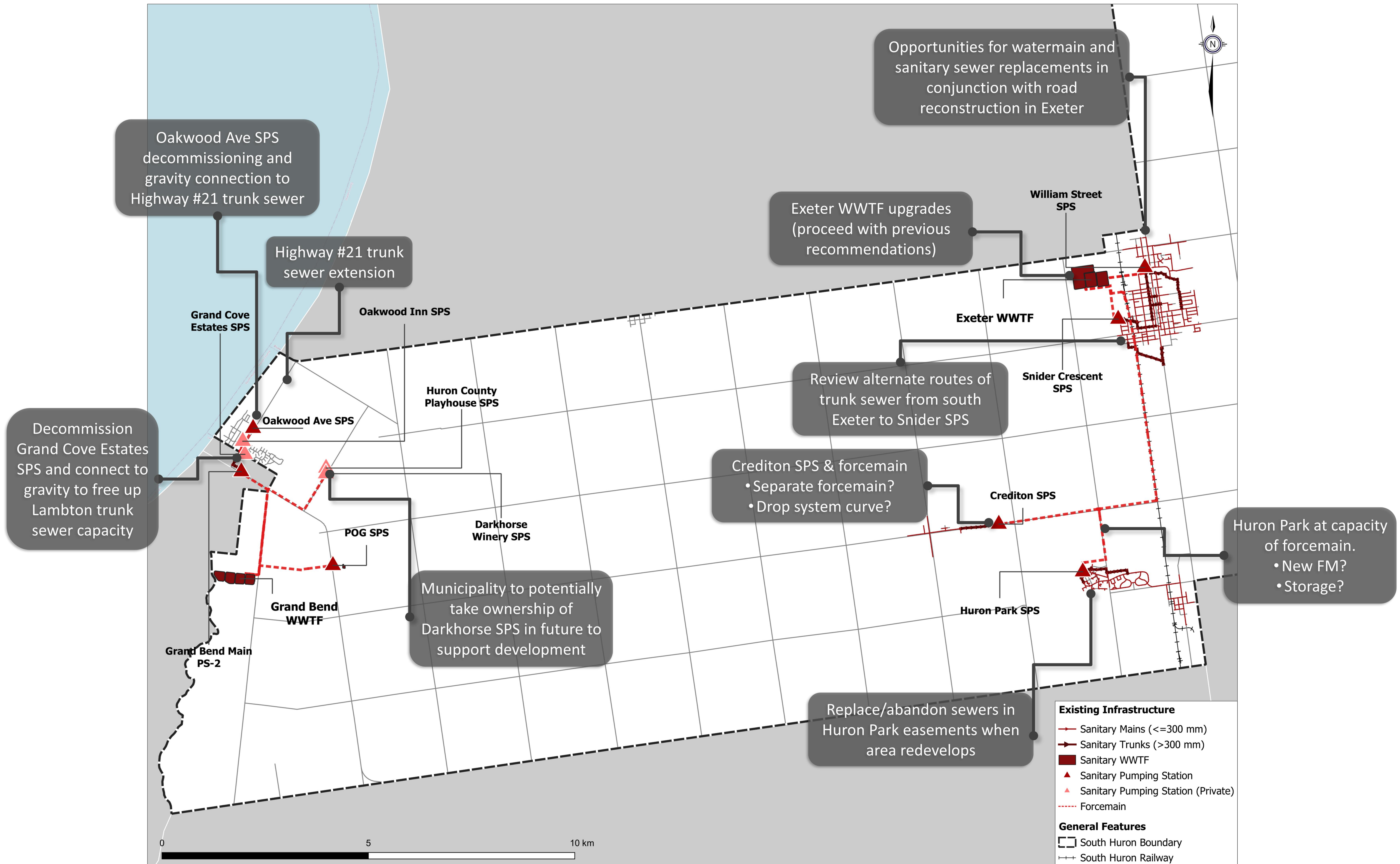
Grand Bend Sanitary Pumping Stations

- Three (3) Municipal owned SPS; Oakwood Area SPS, POG SPS, and Grand Bend Main PS-2
- Grand Bend Main PS-2 is jointly owned with the Municipality of Lambton Shores. South Huron is allocated 50% of station capacity
- Four (4) Privately owned SPS; Oakwood Inn SPS, Darkhorse Winery SPS, Huron County Playhouse SPS and Grand Cove Estates SPS
- All SPS outlet at the Grand Bend WWTF



South Huron Existing Wastewater System Flows		
WWTF	SPS	Average Dry Weather Flow (L/s)
Exeter	William Street SPS	10.3
	Snider Crescent SPS	6.4
	CREDITON SPS	9.1
	Huron Park SPS	3.6
Exeter WWTF Total		36.8
Grand Bend	Grand Bend Main PS2	8.6
	POG SPS	No existing data
Grand Bend WWTF Total		8.6

Wastewater Opportunities and Constraints



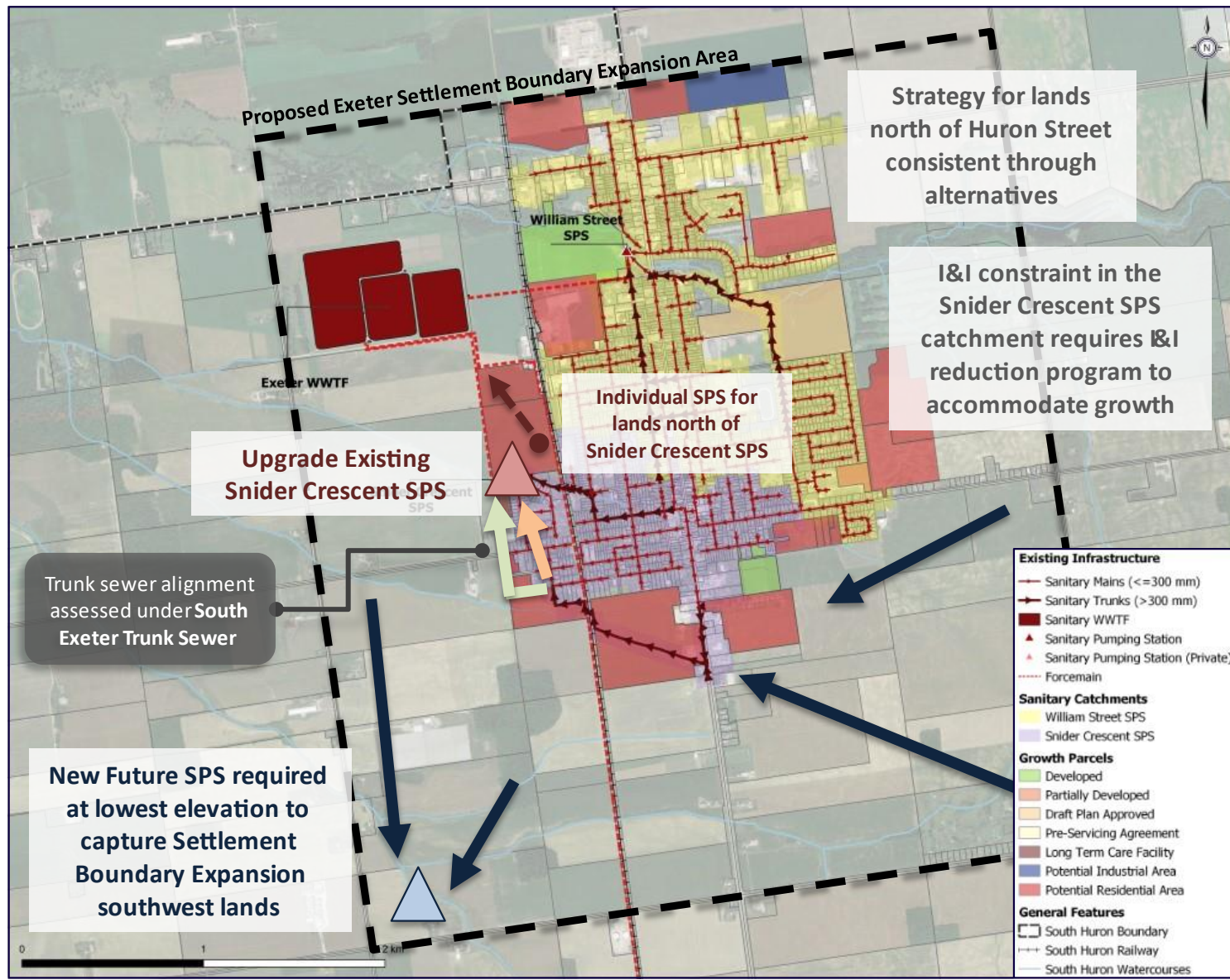
Wastewater Servicing – Exeter Wastewater Treatment Facility



Alternative 1: Do Nothing		Alternative 2: Add Ultraviolet Disinfection (UV) Treatment		Alternative 3: Mechanical Filter		Alternative 4: Full Mechanical Plant	
Advantages: <ul style="list-style-type: none"> No upgrades required 	Disadvantages: <ul style="list-style-type: none"> Does not accommodate all growth flows No capacity redundancy to allow for regular maintenance Maintenance remains an issue as sand filters have declining performance and are approaching maximum capacity Hydraulic capacity will continue to decline Effluent quality may deteriorate and result in more MECP exceedances 	Advantages: <ul style="list-style-type: none"> Minimal upgrades required Interim solution to support existing and growth flows with phased expansion of the plant. Can consider future integration with a mechanical treatment plant Summer discharge would be further improved, and winter season discharge could be disinfected 	Disadvantages: <ul style="list-style-type: none"> Does not accommodate all growth No additional capacity redundancy for regular maintenance Constructability issues Additional future O&M costs 	Advantages: <ul style="list-style-type: none"> Moderate process upgrades required Supports phased expansion of the plant Streamlines upgrades with Mechanical Filter supporting future Full Mechanical Plant Provides more flexibility for processes to be taken offline for maintenance 	Disadvantages: <ul style="list-style-type: none"> More extensive upgrades will be required for existing systems such as pumping station Does not provide removal of bacteria within the mechanical system. UV filtration may be required. More reliance on lagoon performance Additional future O&M costs Higher capital costs 	Advantages: <ul style="list-style-type: none"> Provides redundancy for major processes Allows growth flexibility Phased upgrades including UV Treatment and Mechanical Filter support future new mechanical plant 	Disadvantages: <ul style="list-style-type: none"> Requires major and costly process upgrades System would be oversized for existing flows Additional future O&M costs Highest capital cost support future new EA required

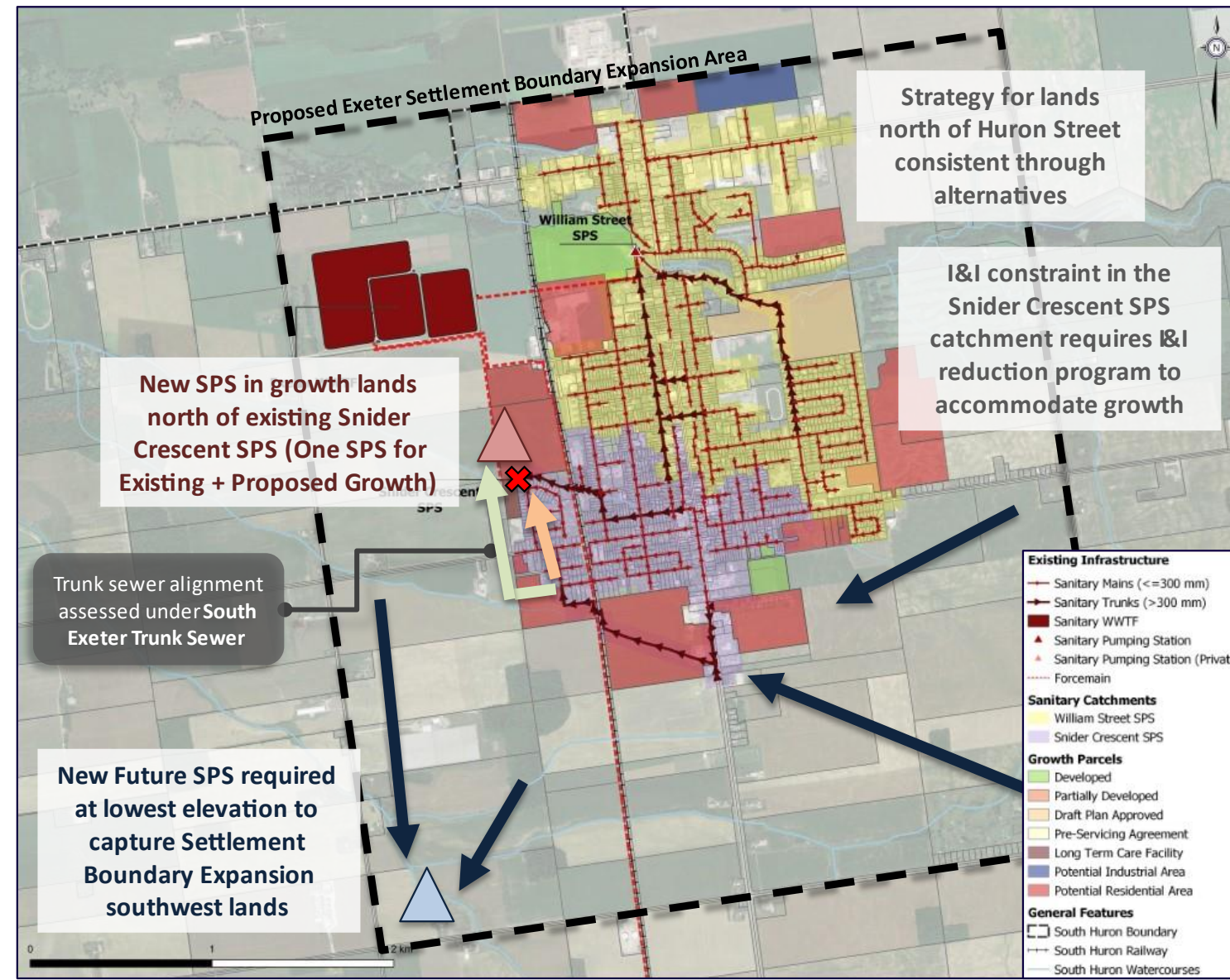
Alternative	Technical Ranking	Environmental Ranking	Social and Cultural Ranking	Financial Ranking	Recommended Alternative
Alternative 1: Do Nothing	Low	High	High	High	Not Recommended: Existing flows reach capacity and do not accommodate growth flows
Alternative 2: Add Ultraviolet Disinfection (UV) Treatment	Med	High	High	Med	Recommended (Short-Term): Improves existing effluent quality and can be implemented as phased approach as the first step
Alternative 3: Mechanical Filter	Med	High	High	Low	Recommended (Intermediate Term): To be implemented as part of phased approach, following UV treatment.
Alternative 4: Full Mechanical Plant	High	Med	Med	Low	Recommended (Long-Term): Long-term recommendation for the WWTF, as the Municipality works towards transitioning to a fully conventional mechanical treatment plant.

Wastewater Servicing – South Exeter SPS



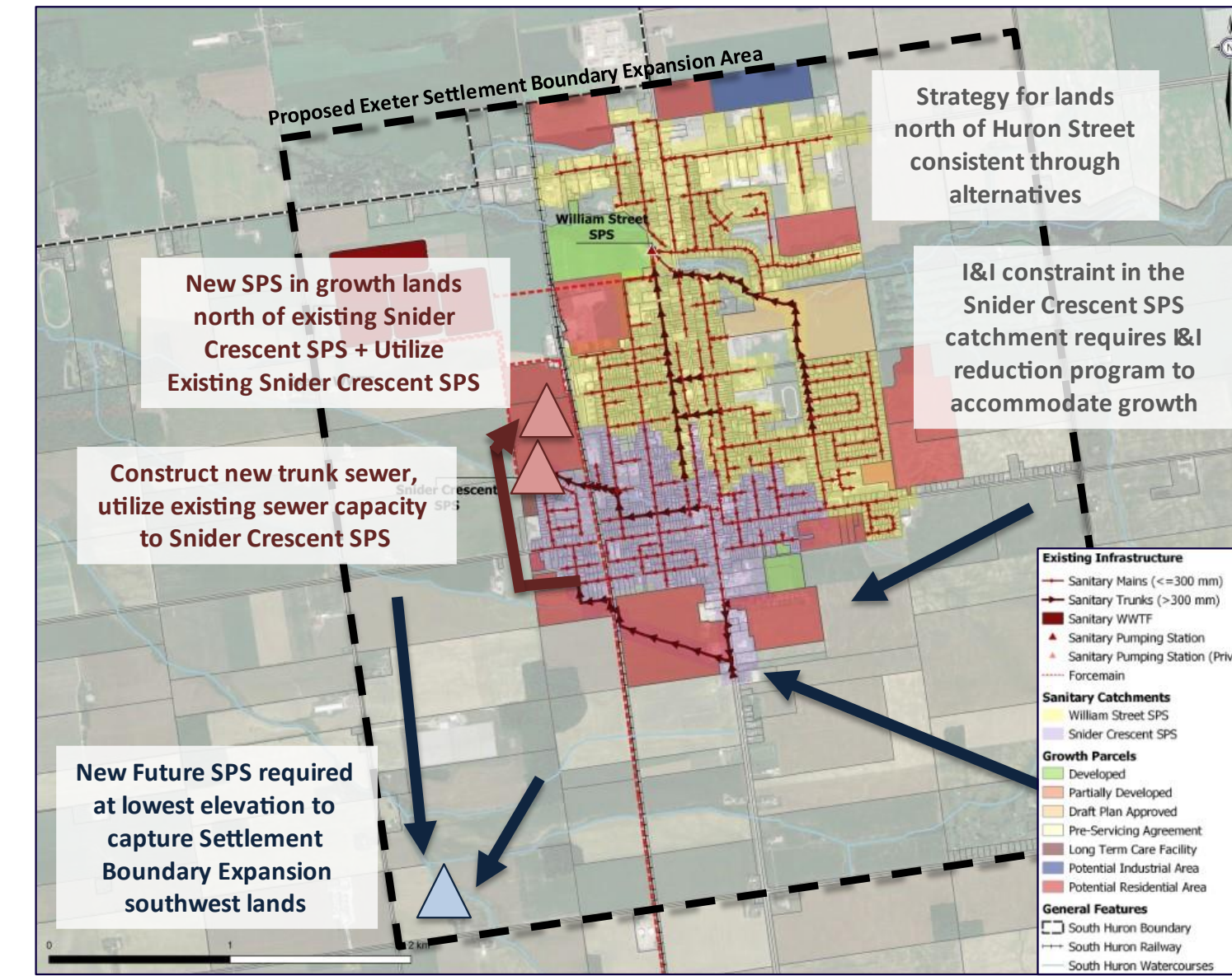
Alternative 1: Upgrade existing Snider Crescent SPS (One SPS)

- Advantages:**
- Utilizes existing infrastructure
 - Operations and maintenance costs significantly less to operate one SPS
- Disadvantages:**
- Snider Crescent SPS at capacity with limited to no space for expansion
 - Focuses on proposed growth
 - Growth north of Snider Crescent SPS will need a separate strategy



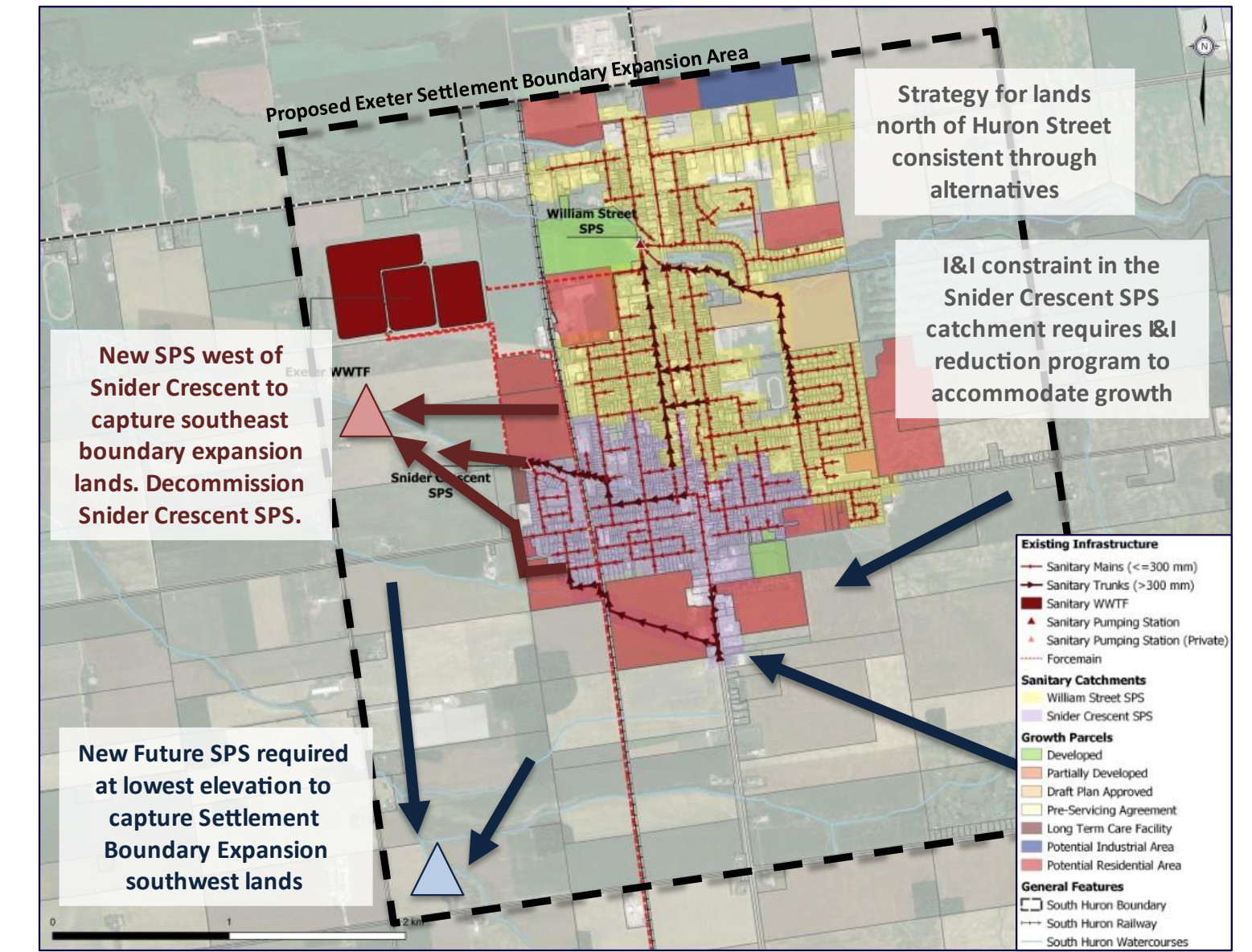
Alternative 2: One new SPS north of existing Snider Crescent SPS (One SPS)

- Advantages:**
- One SPS for existing and proposed growth in southeast Exeter
 - Operations and maintenance costs significantly less to operate one SPS
- Disadvantages:**
- Does not utilize Snider Crescent SPS
 - Focuses on proposed growth and does not account for potential expansion of boundary lands to the west



Alternative 3: New SPS north of existing Snider Crescent SPS and utilize existing Snider Crescent SPS (Two SPS's)

- Advantages:**
- All costs related to development; minimizes construction to existing residents
 - Utilizes existing infrastructure to capacity
 - Allows for phased expansion
- Disadvantages:**
- Operations and maintenance costs significantly higher to operate two SPS's
 - More infrastructure to maintain



Alternative 4: One new SPS northwest of Snider Crescent SPS in Expansion of SAB (One SPS)

- Advantages:**
- Focuses on servicing expansion of SAB, resulting in the least amount of infrastructure if lands to the west develop
 - O&M costs significantly less for one SPS
- Disadvantages:**
- Location not ideal if growth does not happen
 - Longer length of sewer and forcemain required

Alternative	Technical Ranking	Environmental Ranking	Social and Cultural Ranking	Financial Ranking	Recommended Alternative
Alternative 1: Upgrade existing Snider Crescent SPS (One SPS)	High	High	Low	High	Not Recommended: Does not meet needs for planned growth
Alternative 2: One new SPS north of existing Snider Crescent SPS (One SPS)	High	High	Med	High	Recommended: Lowers long-term cost for existing and proposed growth
Alternative 3: New SPS north of existing Snider Crescent SPS and utilize existing Snider Crescent SPS (Two SPS's)	Low	High	Low	Low	Not Recommended: High operations and maintenance costs to operate two SPS's
Alternative 4: One new SPS northwest of Snider Crescent SPS in Expansion of SAB Lands (One SPS)	Med	High	Med	High	Not Recommended: Uncertainty in long-term strategy of expansion of SAB lands may result in poor placement of infrastructure

Wastewater Servicing – William Street SPS



Alternative 1: William Street SPS Capacity Upgrades

Advantages:

- Provides immediate growth related capacity
- Reduces risks of overflows to the environment

Disadvantages:

- High risk of basement flooding as sewer constraints are not addressed
- Increased pumping and treatment costs for continued wet weather flows
- High O&M costs
- Wet weather flows will continue to increase as sewers deteriorate and existing problem areas remain

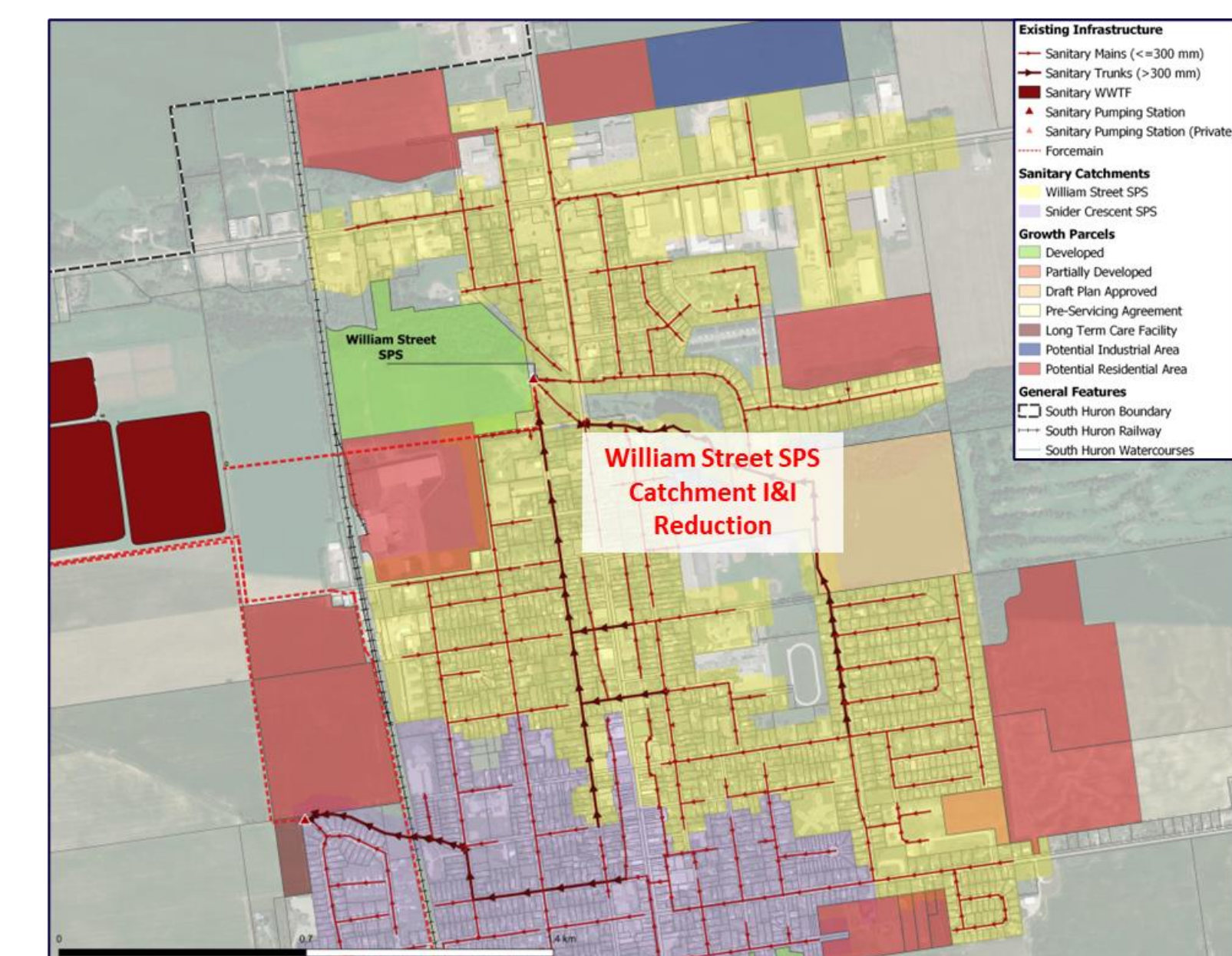
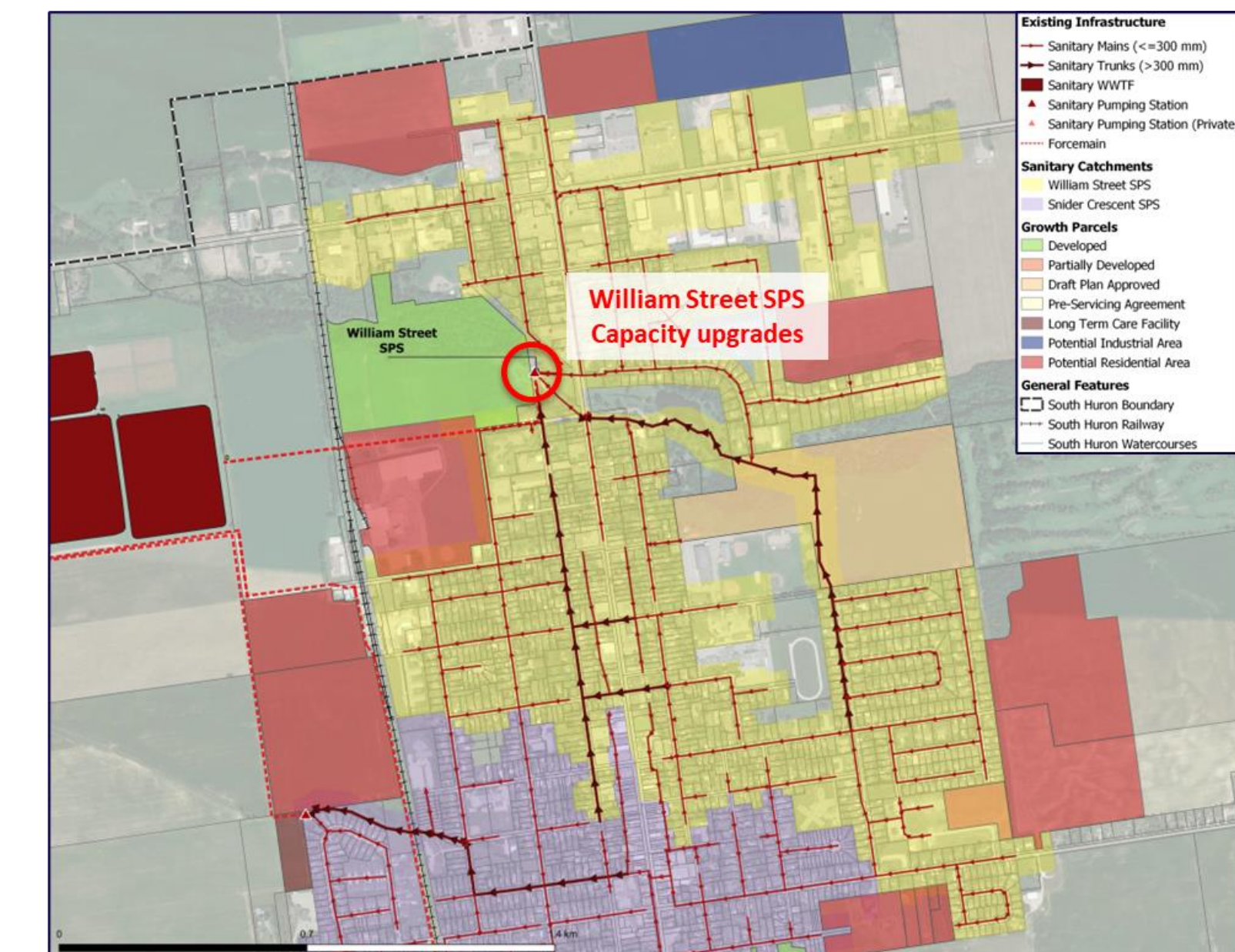
Alternative 2: William Street SPS Catchment I&I Reduction

Advantages:

- Reduces pumping and treatment costs
- Least amount of new infrastructure
- Provides resilience to local system and to reduce total system baseflows helping to manage available growth capacity at the WWTF
- Lowest capital and O&M costs
- Reduced risks of overflows to the environment

Disadvantages:

- May be difficult to isolate and repair
- Could be a long time before seeing benefits
- Additional upgrades may be required if I&I reduction efforts are unsuccessful



Alternative	Technical Ranking	Environmental Ranking	Social and Cultural Ranking	Financial Ranking	Recommended Alternative
Alternative 1: William Street SPS Capacity Upgrades	High	High	Low	Low	Not Recommended: High capital costs and O&M costs by upsizing infrastructure as opposed to reducing existing flows. No resiliency in existing sewers.
Alternative 2: William Street SPS Catchment I&I Reduction	High	High	Med	High	Recommended: Provides the greatest overall benefit with some capital costs while reducing wet weather flow. If I&I reduction efforts are unsuccessful, station upgrades at the William Street SPS may be required.

Wastewater Servicing – South Exeter Trunk Sewer



Alternative 1: Upsize Sewer Following Existing Alignment

Advantages:

- Optimize trunk sewer capacity with potential oversizing to support all southeast growth
- No land acquisition required; alignment to follow existing right-of-way
- No EA required
- Utilizes existing trunk sewer upstream of Mary Street at Waterloo Street

Disadvantages:

- Increased construction impacts to existing residents
- Increased construction complexity in existing road right-of-way

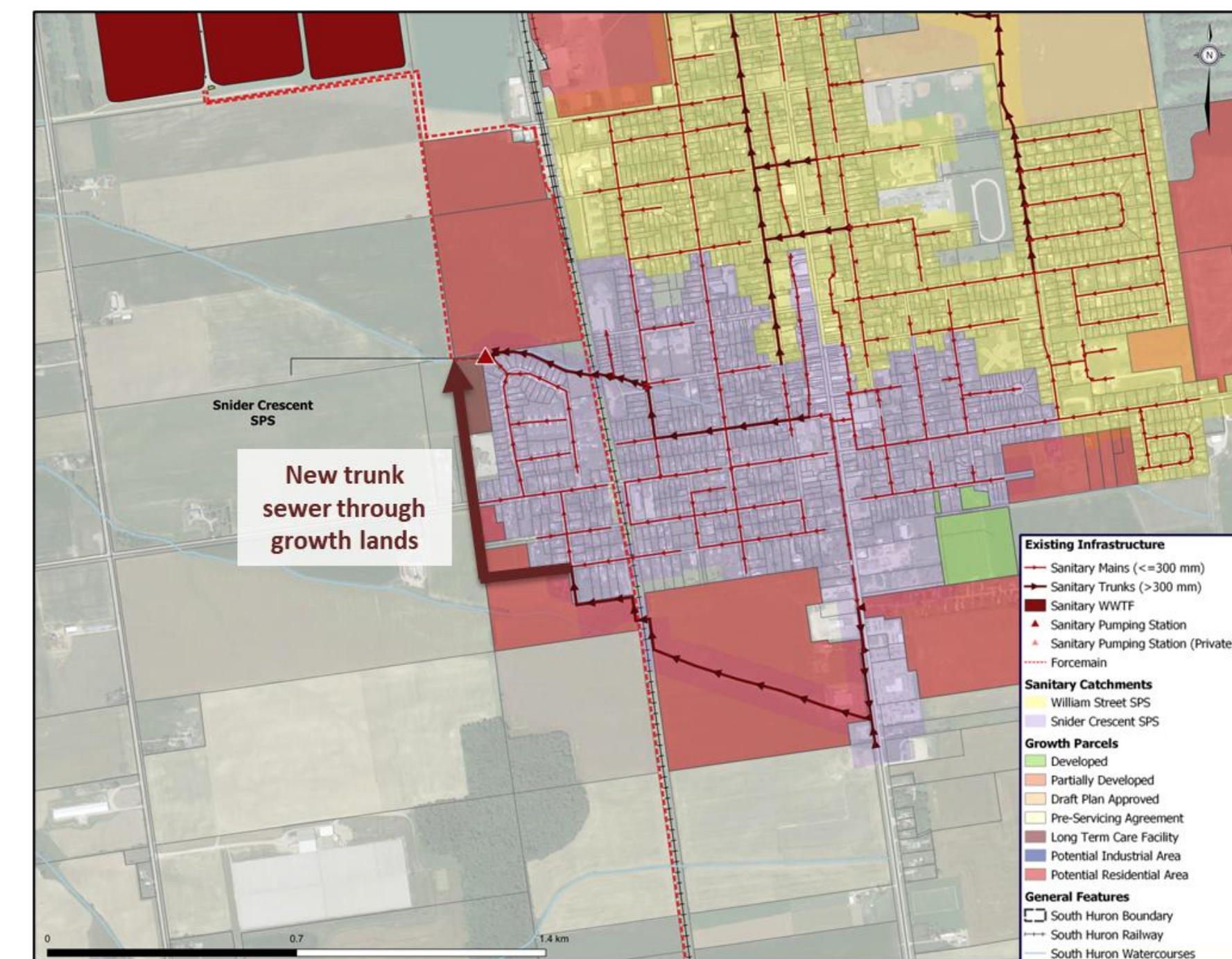
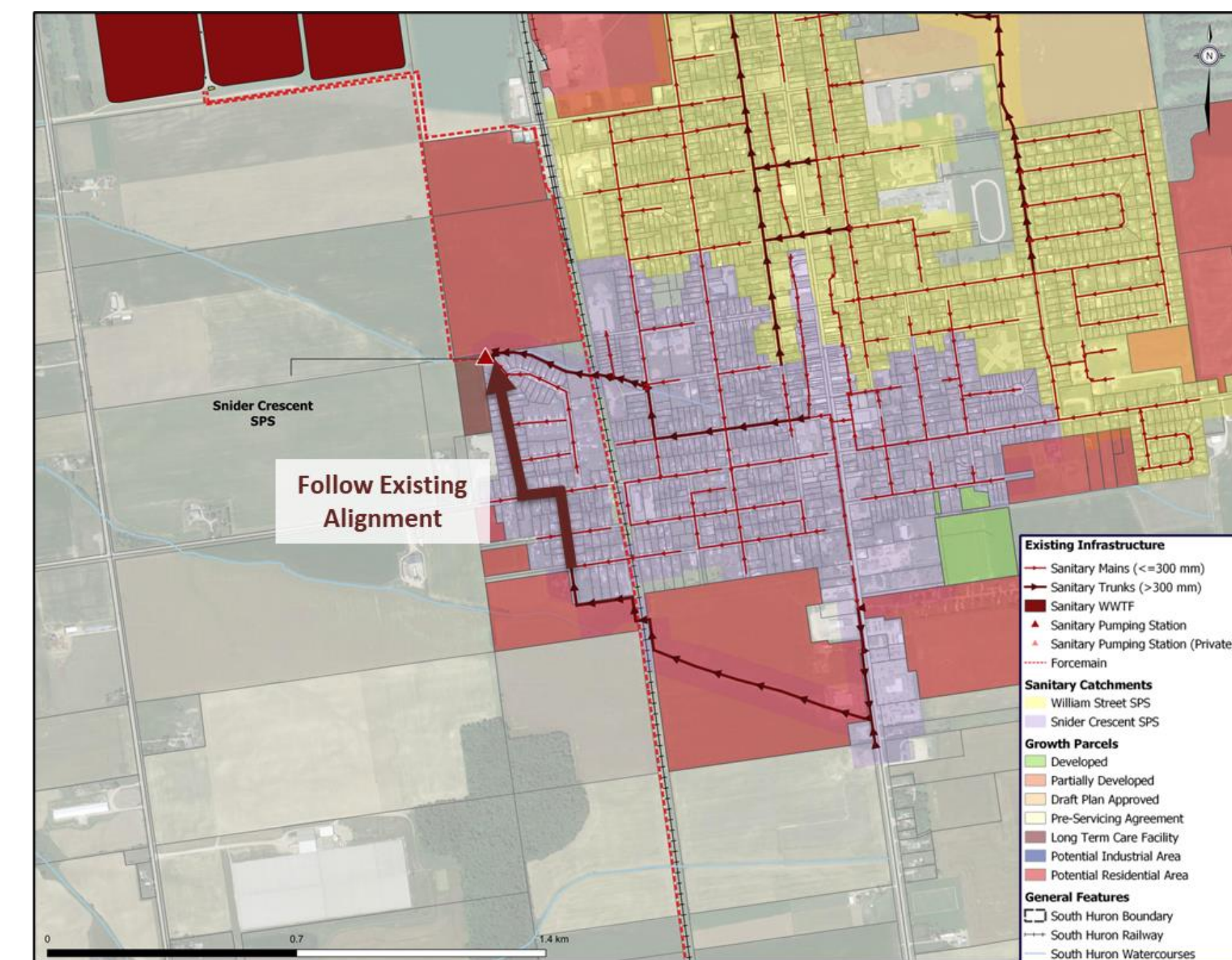
Alternative 2: Construct New Trunk Sewer

Advantages:

- Optimize trunk sewer capacity with potential oversizing to support all southeast growth
- Minimal impact to local traffic with majority of construction to be in undeveloped/farmland
- May be opportunity to optimize alignment with development draft plans
- Utilizes existing trunk sewer upstream of Mary Street at Waterloo Street

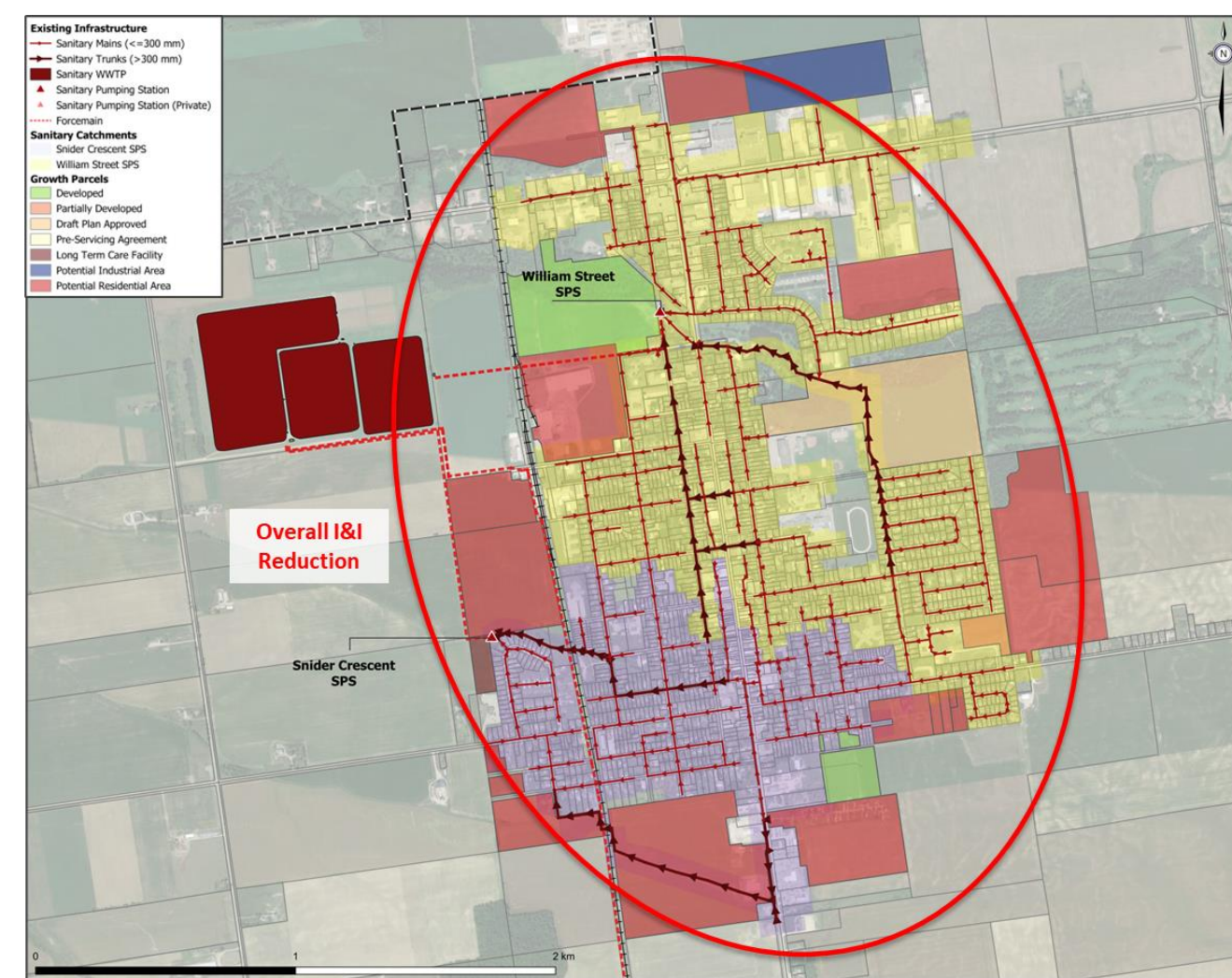
Disadvantages:

- Land acquisition required which may be difficult and costly
- Schedule 'B' EA required to determine the full extents of impacts
- Timing restrictions to complete EA and all associated studies, and acquire land if necessary



Alternative	Technical Ranking	Environmental Ranking	Social and Cultural Ranking	Financial Ranking	Recommended Alternative
Alternative 1: Upsize Sewer Following Existing Alignment	High	High	High	Med	Recommended: Can be initiated immediately as it does not require an EA or land acquisition
Alternative 2: Construct New Trunk Sewer	High	Med	High	Med	Not Recommended: Timing restriction of an EA puts limitation on potential growth servicing in south Exeter

Wastewater Servicing – Exeter Sewer System Upgrades



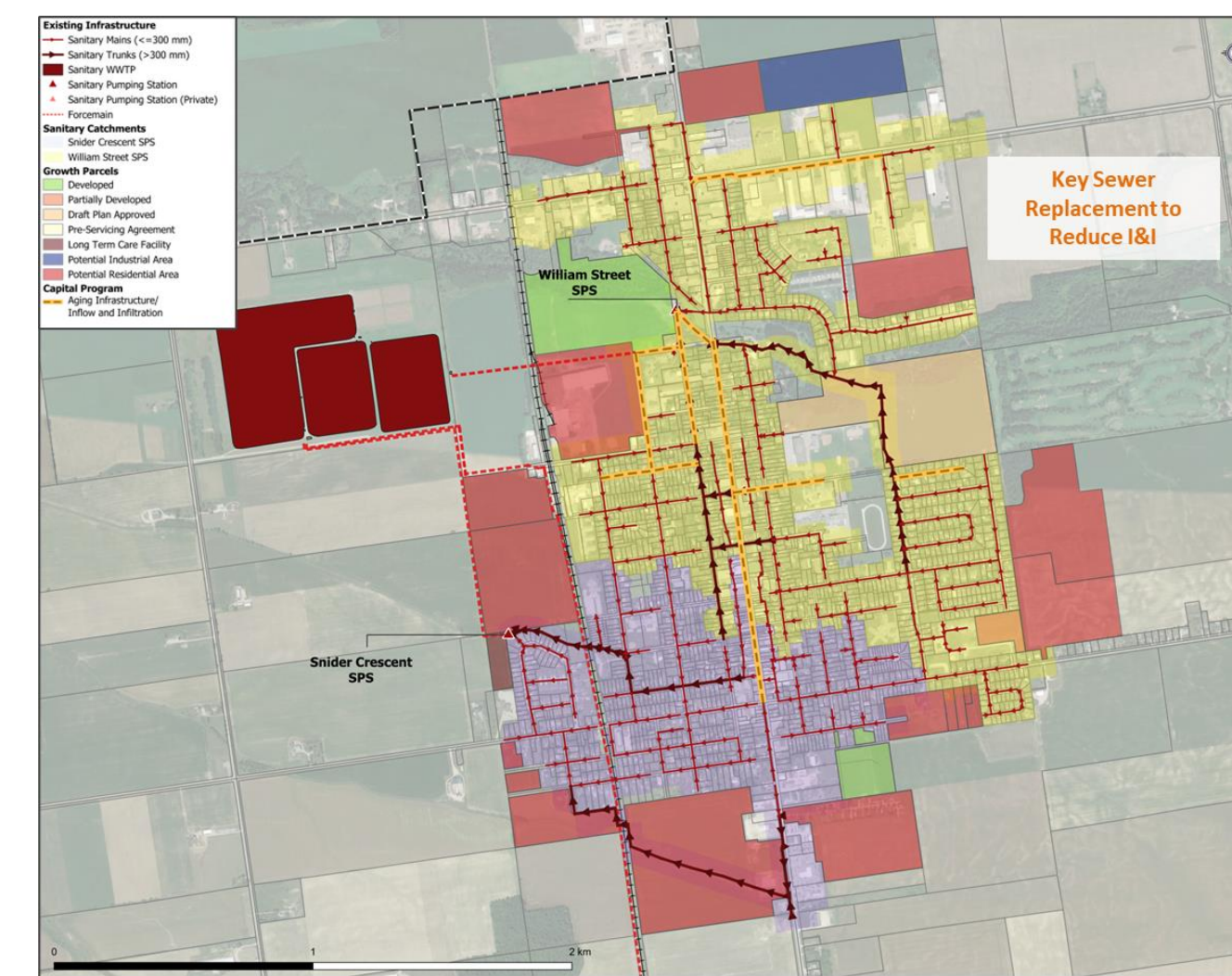
Alternative 1: I&I Reduction Only

Advantages:

- Reduces pumping and treatment costs
- Least amount of new infrastructure
- Provides resilience to local system and to reduce total system baseflows helping to manage available growth capacity at the WWTF
- Lowest capital and O&M costs

Disadvantages:

- May be difficult to isolate and repair
- Could be a long time before seeing benefits
- Additional upgrades may be required if I&I reduction efforts are unsuccessful



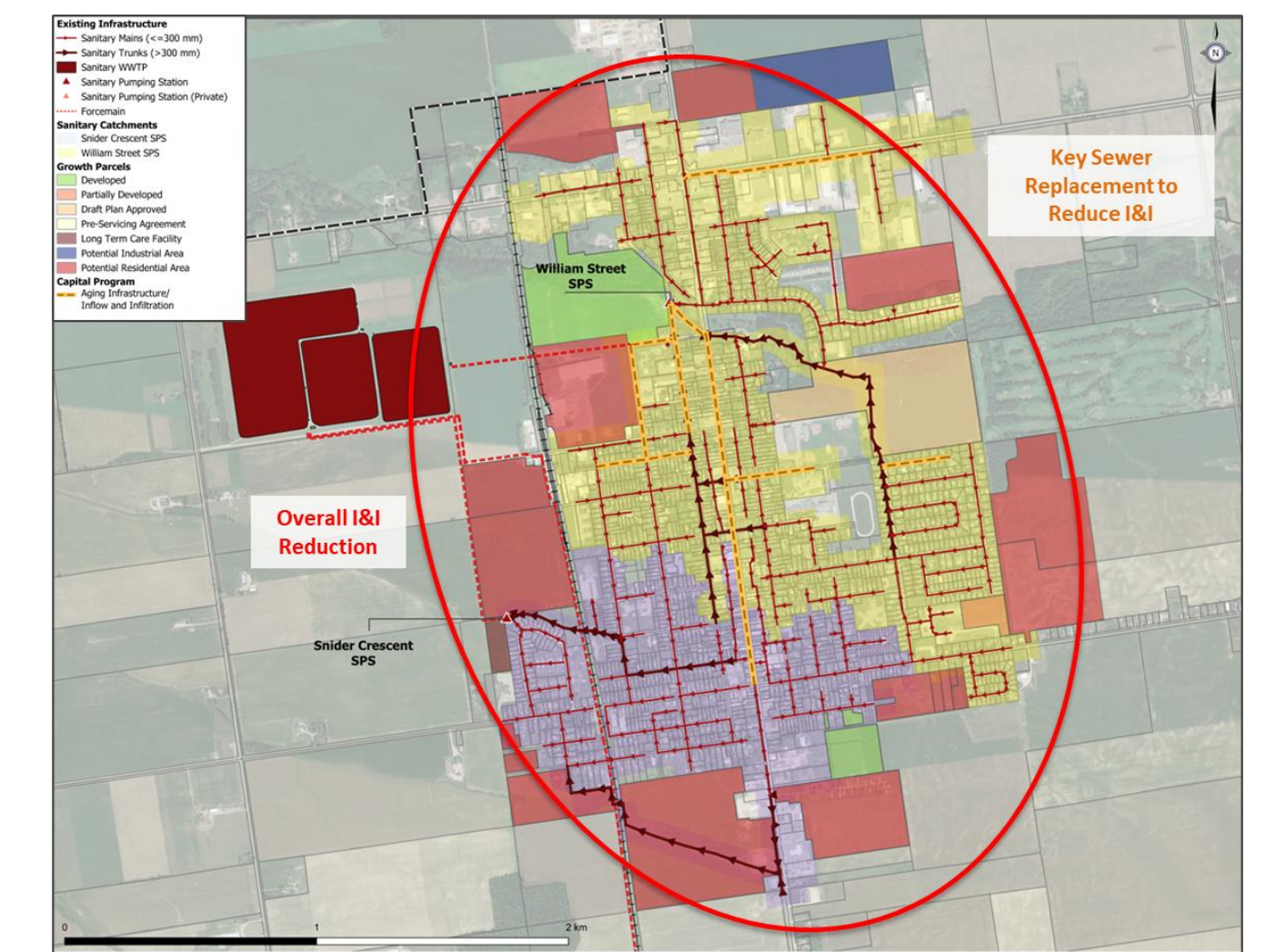
Alternative 2: Sewer Upgrades Only

Advantages:

- Immediately deals with capacity constraints and provides growth related capacity

Disadvantages:

- Increased capital costs for sewer replacements
- Increased pumping and treatment costs for additional wet weather flows
- Additional flow monitoring still required
- No additional resilience to the local system as total system baseflows remain high



Alternative 3: I&I Reduction and Sewer Upgrades

Advantages:

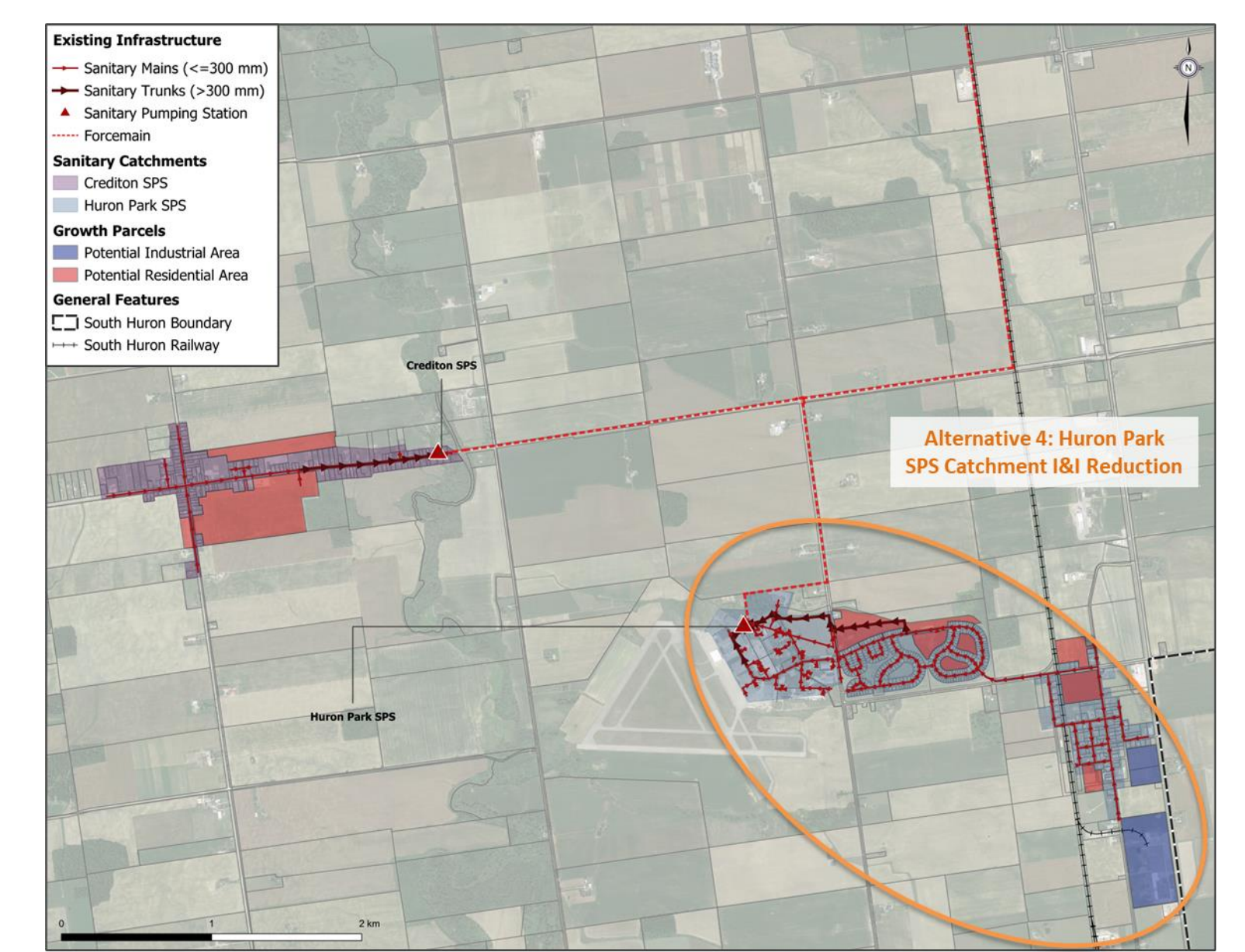
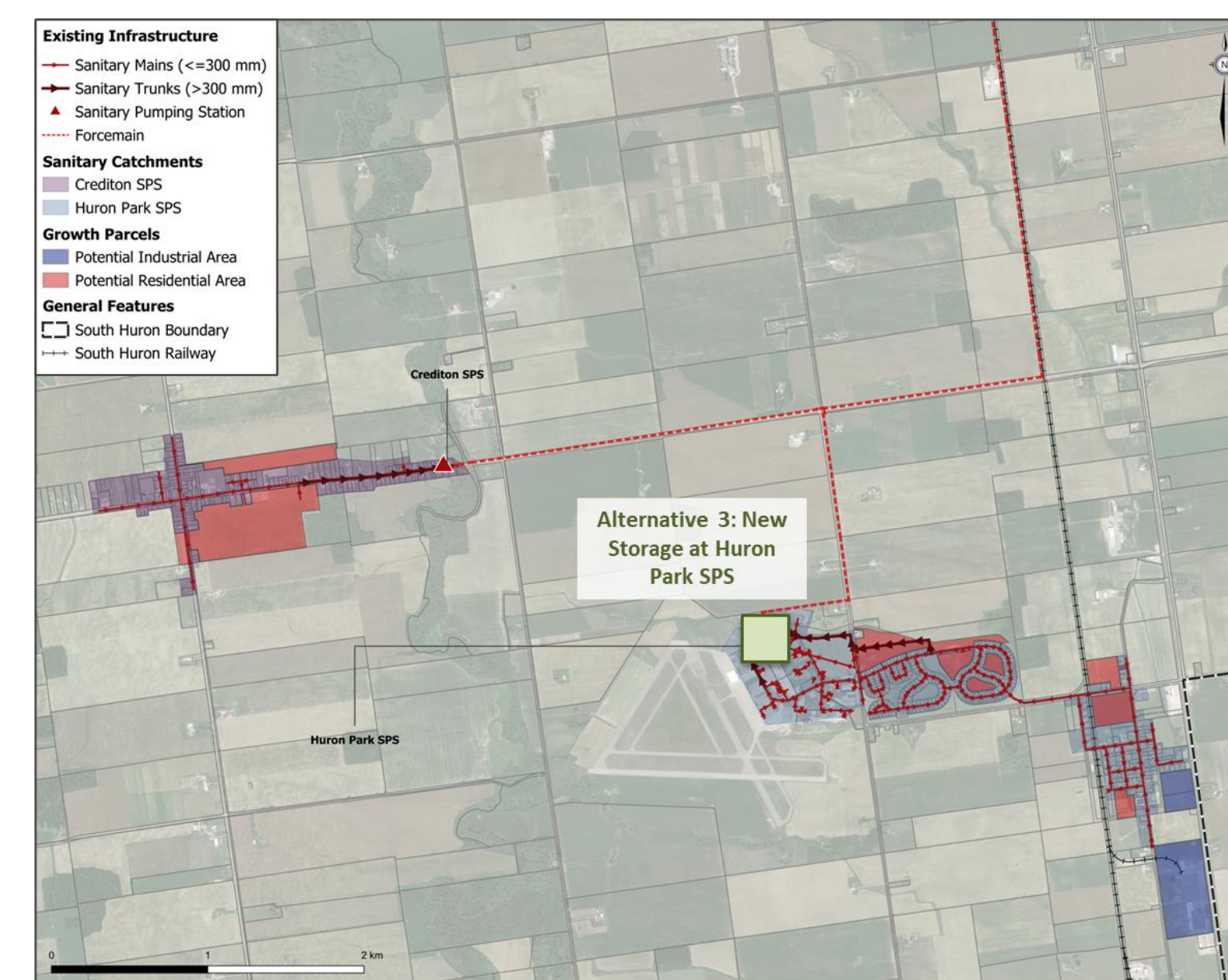
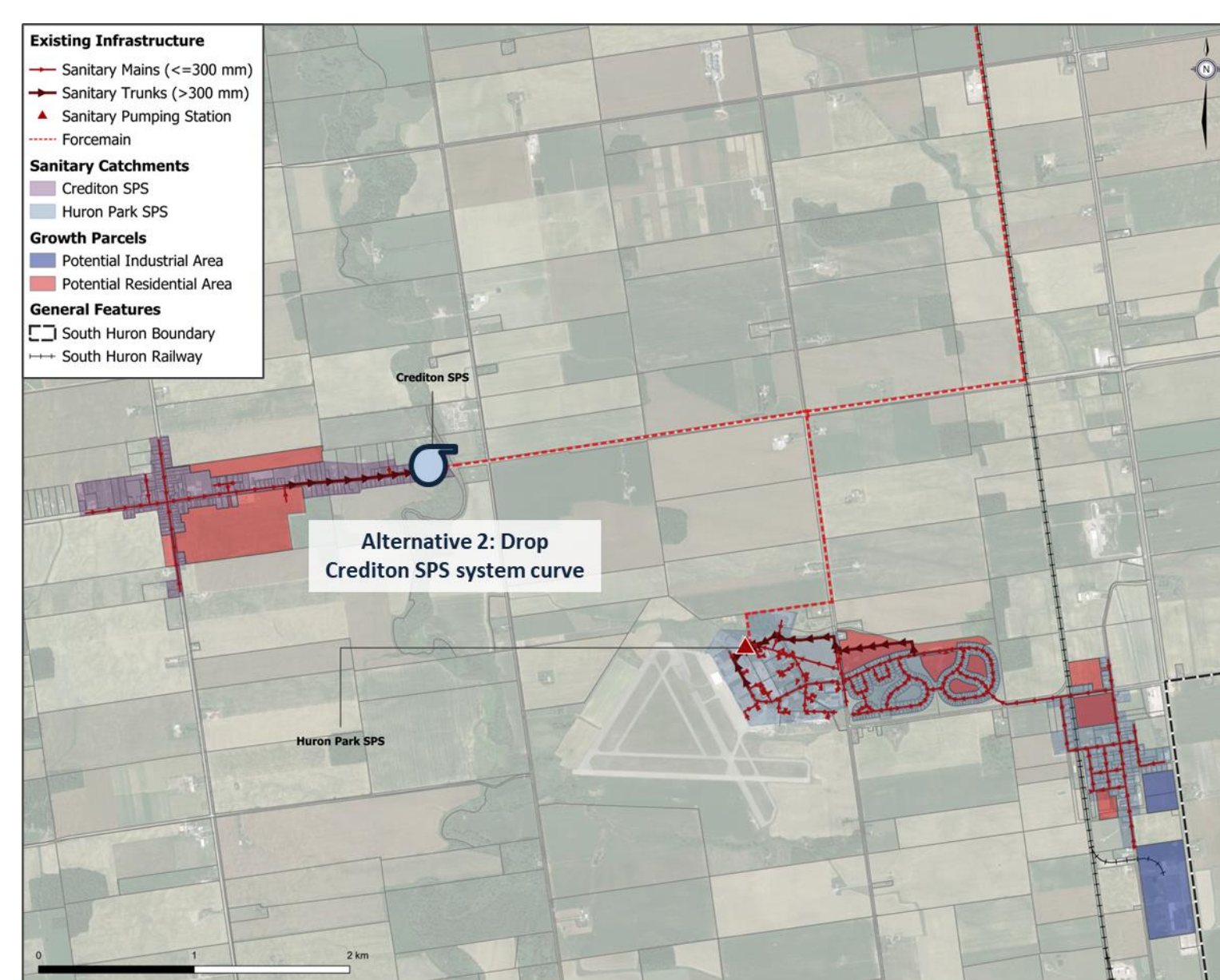
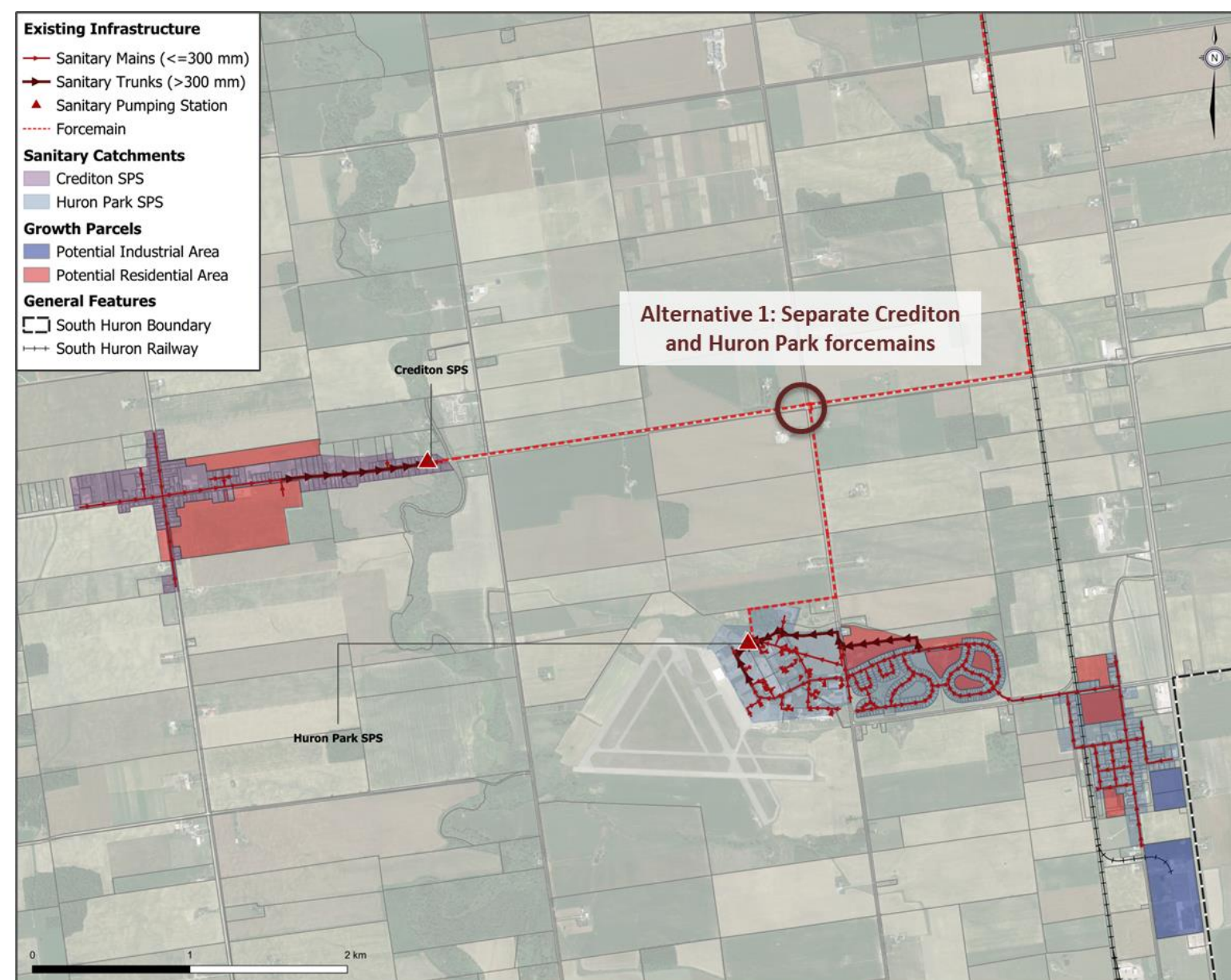
- Reduces pumping and treatment costs
- Minimizes new infrastructure sizing
- Some immediate relief still achieved
- Ability to deal with deteriorating sewers that cannot be addressed through I&I reduction

Disadvantages:

- I&I may be difficult to isolate and repair
- Increased capital costs for sewer replacements

Alternative	Technical Ranking	Environmental Ranking	Social and Cultural Ranking	Financial Ranking	Recommended Alternative
Alternative 1: I&I Reduction Only	Med	High	High	High	Not Recommended: Longer amount of time to see results and efforts may be unsuccessful
Alternative 2: Sewer Upgrades Only	Med	Med	High	Low	Not Recommended: High capital costs and O&M costs by upsizing infrastructure as opposed to reducing existing flows
Alternative 3: I&I Reduction and Sewer Upgrades	High	High	High	Med	Recommended: Provides the greatest overall benefit with some capital costs while also reducing wet weather flow

Wastewater Servicing – Crediton and Huron Park SPS



Alternative 1: Separate Crediton and Huron Park Forcemains

- Advantages:**
- Opportunity to upgrade capacity of Huron Park forcemain at the same time
 - Reduced wear on Crediton pumps
 - Mitigate risks of bypasses during storm events
- Disadvantages:**
- High capital costs for new forcemain
 - Does not address ongoing I&I issues
 - Does not increase storage at Huron Park or include buffer room to mitigate peaks during peak flows

Alternative 2: Drop Crediton SPS System Curve

- Advantages:**
- Flow matching/ operating at lower speeds will alleviate wear on pumps
 - Reduced maintenance
- Disadvantages:**
- Reduced capacity at Huron Park SPS when operating at a lower speed to permit Crediton wet well to empty
 - Does not address ongoing I&I issues

Alternative 3: New Storage at Huron Park SPS

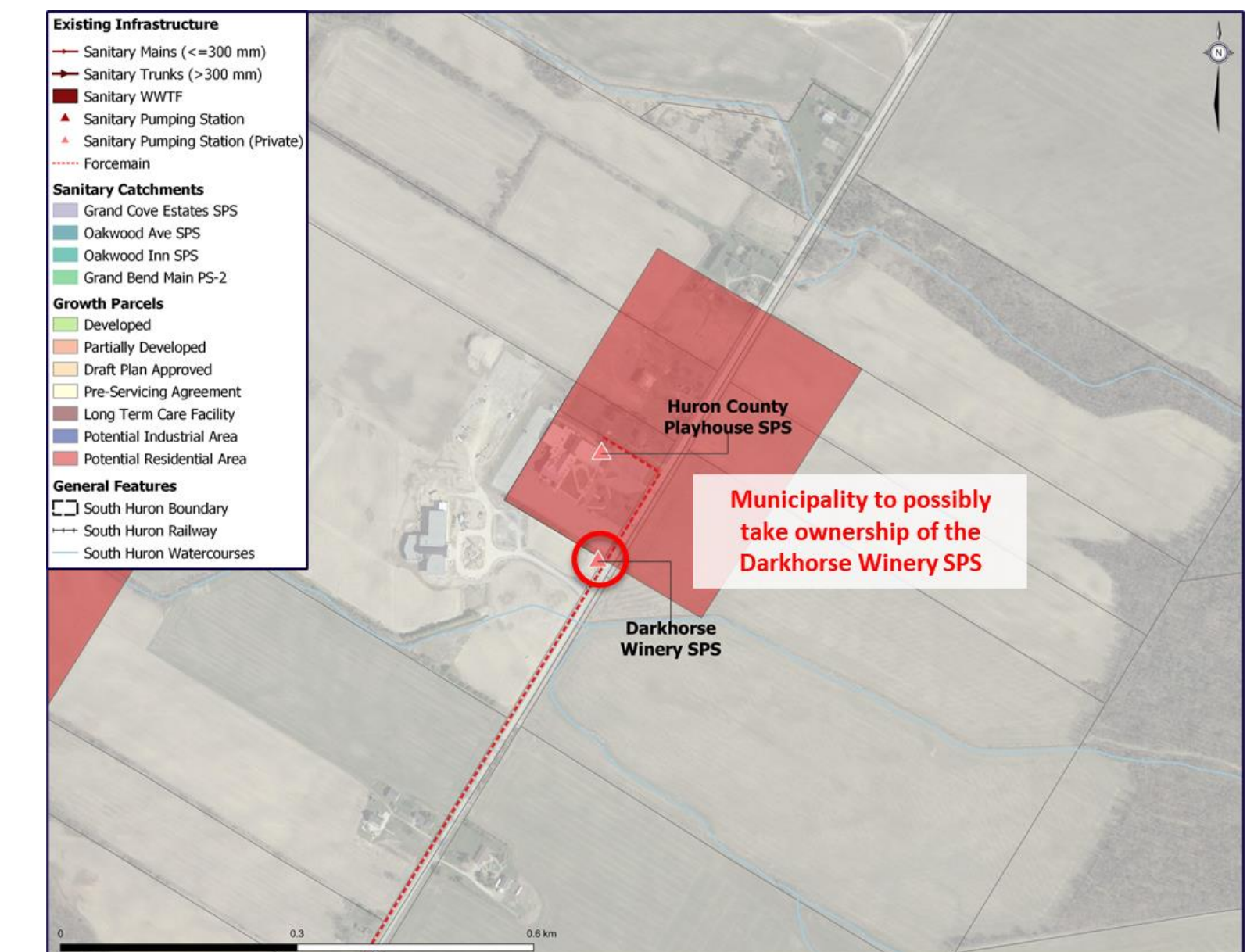
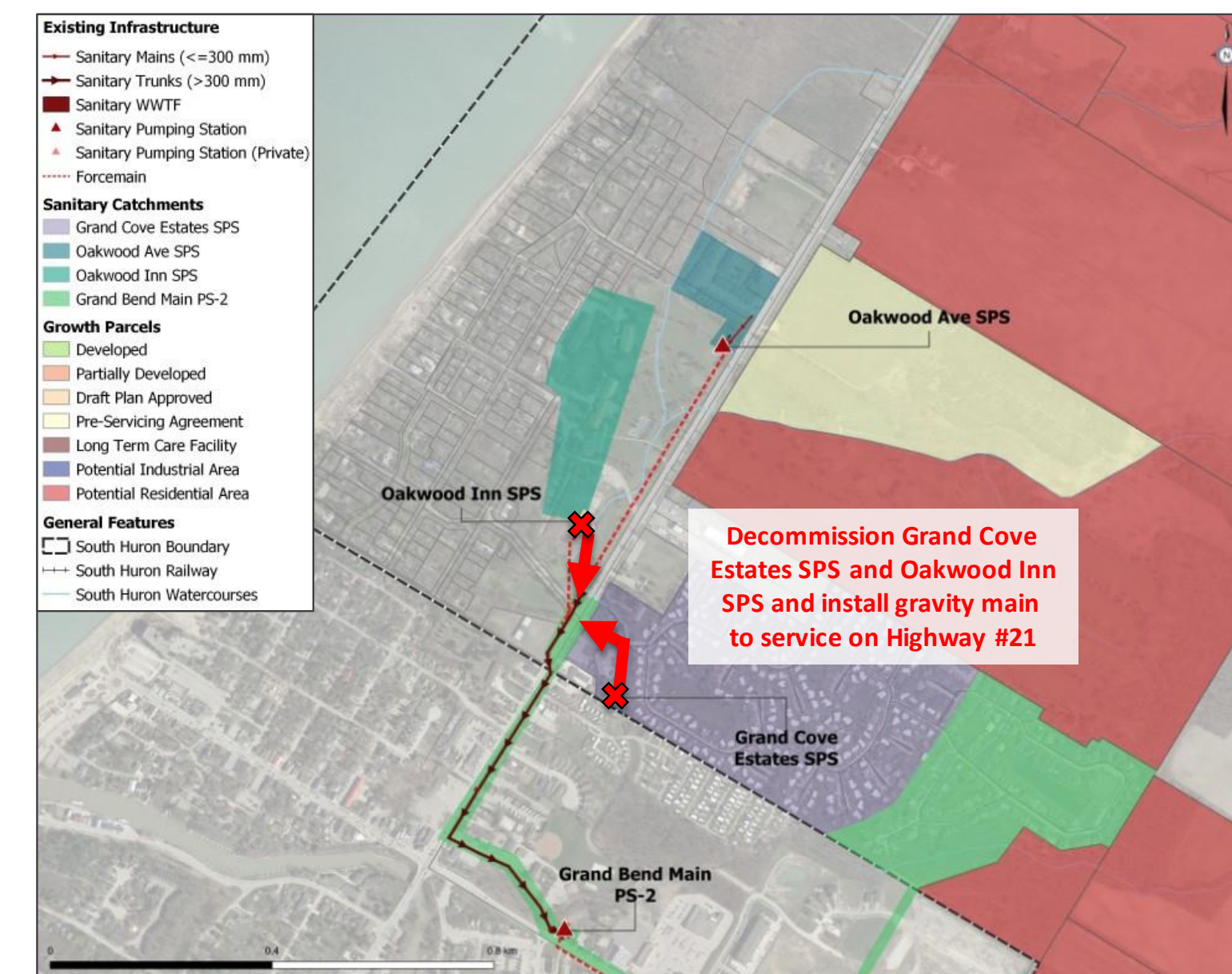
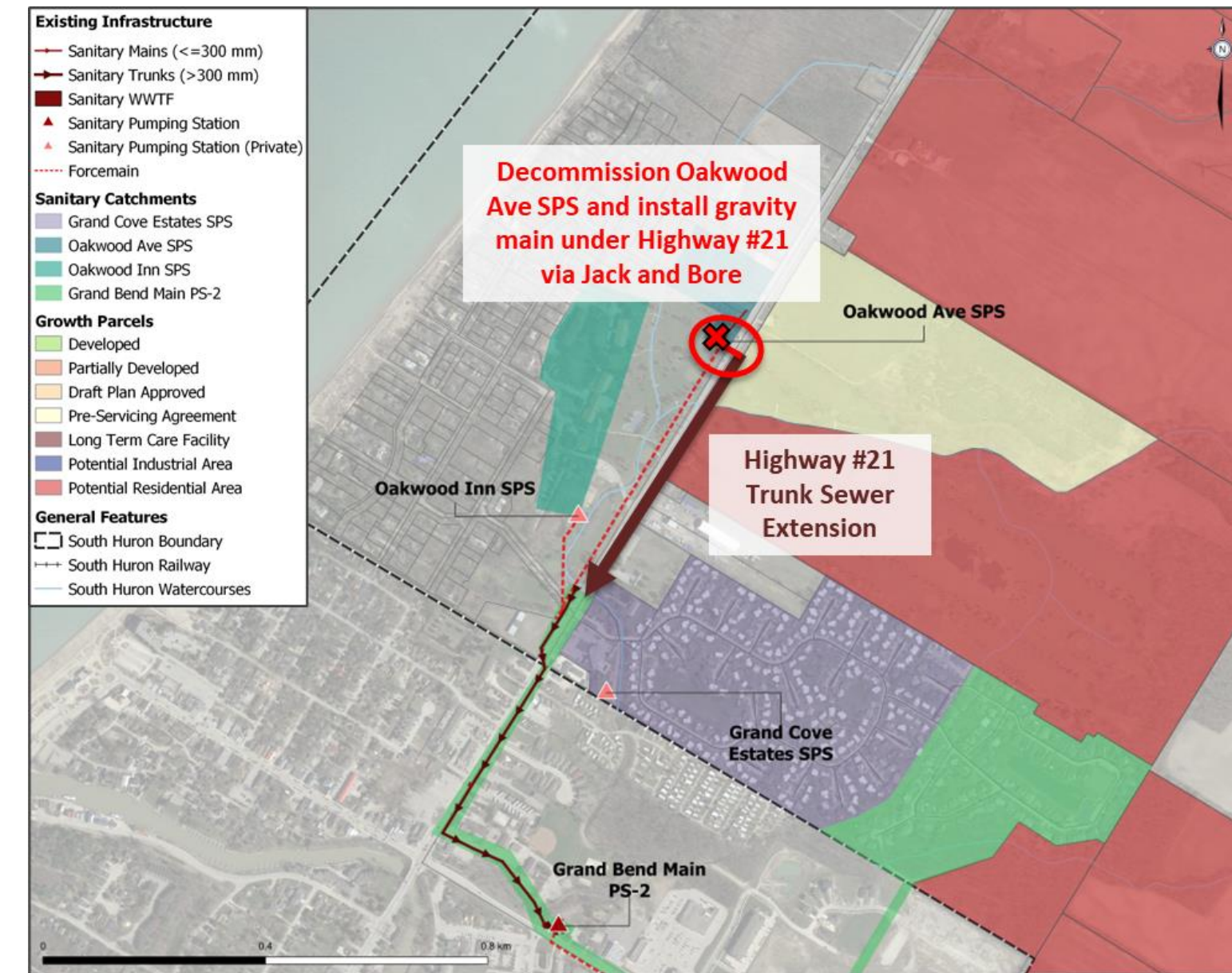
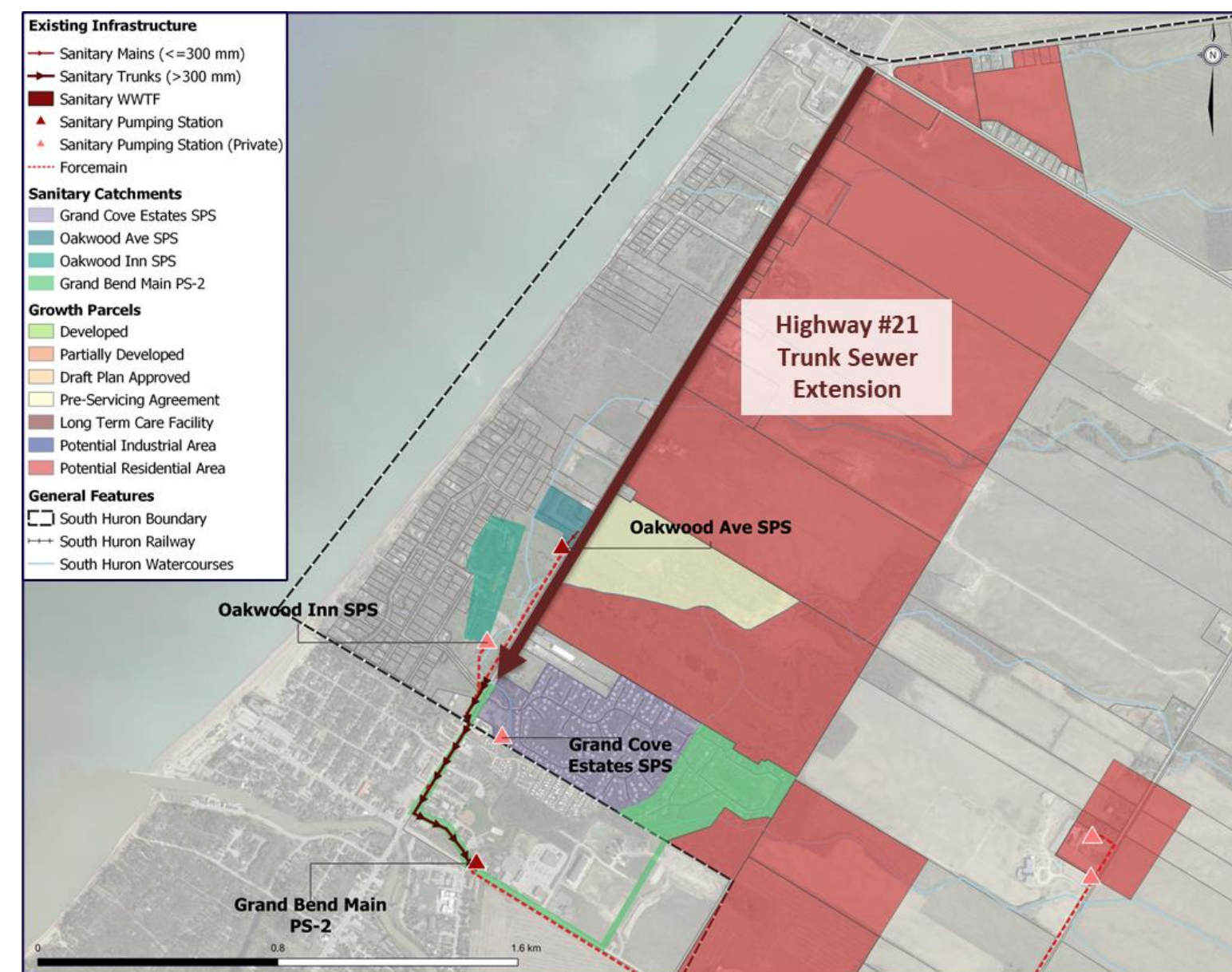
- Advantages:**
- New wet well permits optimized pump run times and adequate emergency storage to mitigate risk of bypasses
 - Increased operating band resulting in less frequent pump cycles
- Disadvantages:**
- High capital cost for new storage
 - Storage is oversized due to I&I issues
 - Does not address ongoing I&I issues
 - Station will still compete with Crediton SPS under high flow events

Alternative 4: Huron Park I&I Reduction

- Advantages:**
- Lower costs for greater benefit but addressing I&I issues prior to completing significant SPS upgrades
 - Reduces wastewater treatment and pumping costs
- Disadvantages:**
- May be difficult to isolate and repair
 - Could be a long time before seeing benefits

Alternative	Technical Ranking	Environmental Ranking	Social and Cultural Ranking	Financial Ranking	Recommended Alternative
Alternative 1: Separate Crediton and Huron Park Forcemains	Med	Med	High	Low	Not Recommended: High capital costs
Alternative 2: Drop Crediton SPS System Curve	Med	High	High	Low	Not Recommended: Highest ongoing operations and maintenance costs
Alternative 3: New Storage at Huron Park SPS	Med	High	High	Low	Recommended: Recommended in line with Alternative 4. Provides immediate relief with Alternative 4 addressing ongoing issues
Alternative 4: Huron Park I&I Reduction	High	High	High	High	Recommended: Recommended in line with Alternative 3. Longer time frame to realize results.

Wastewater Servicing – Grand Bend Area



Highway #21 Trunk Sewer Extension

Overview:

- Existing Highway #21 trunk sewer from the Grand Bend Main PS2 to Indian Road has sufficient capacity to accommodate all anticipated development flows within the catchment along Highway #21
- Trunk sewer extension to be sized to support north growth flows along Highway #21 to mitigate future capacity restrictions
- Forms an important piece of the overall servicing strategy for the Municipality of South Huron's Grand Bend service area
- Based on recommendation from Grand Bend Area Sewage Collection System Class EA

Oakwood SPS Decommissioning

Overview:

- The Oakwood SPS has a forcemain within an easement on private property along the west side of the Highway #21 ROW.
- Opportunity to decommission the Oakwood SPS and connect via gravity to the new trunk sewer on Highway #21 once constructed
- Include provisions for removal of structures
- Gravity connection (Jack & Bore) Across Highway #21 at Oakwood Links Condos

Grand Cove Estates SPS and Oakwood Inn SPS Decommissioning

Overview:

- Property owners to decommission Private Grand Cove Estates SPS and Oakwood Inn SPS and connect via gravity to the new trunk sewer on Highway #21 (Service installed across highway to Grand Cove Estates property line)
- Frees up Lambton Shores trunk sewer capacity, along Main Street East/County Road #81

Darkhorse SPS Ownership

Overview:

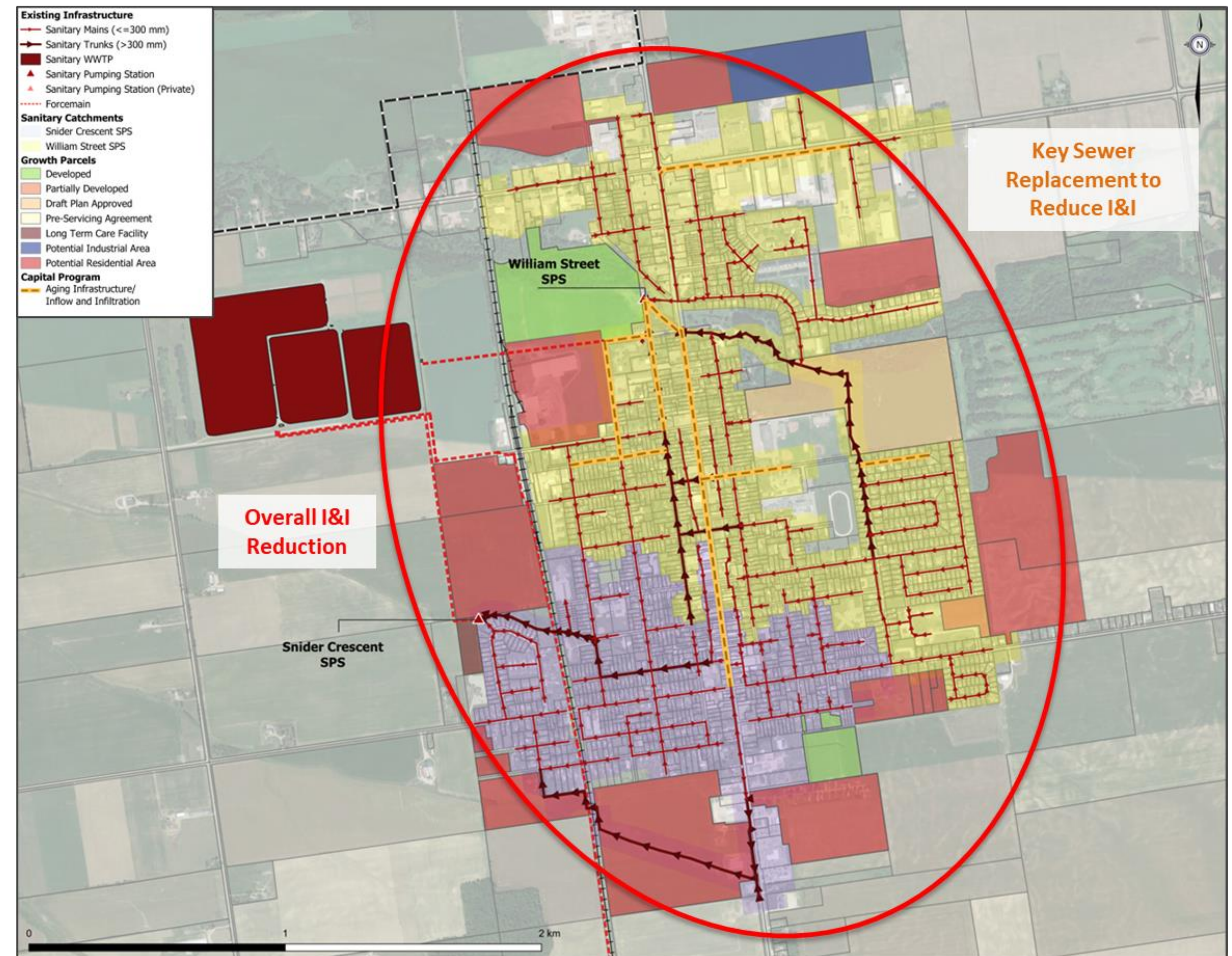
- Private SPS designed and constructed to Municipal standards, but some upgrades are required such as separate hydro service and emergency generator
- Development proposed surrounding the existing Darkhorse SPS
- To accommodate development, a SPS and forcemain are needed
- Municipality to potentially take ownership of Darkhorse SPS in future to support development
- Eliminates need for an additional SPS and forcemain

Wet Weather Management Program

- Recommended to address areas of high inflow and infiltration (I&I) that result system capacity restrictions or basement flooding risk
- Is intended to deal with existing capacity constraints, and to provide growth-related capacity without expanding/upgrading existing infrastructure, or by minimizing the required expansion/upgrade
- Provides a proactive and targeted approach to addressing wet weather impacts

Reduction in Exeter and Huron Park Systems

- I&I reduction is required for the Municipality F-5-1 requirements for nominally separated sewer systems that does not allow for system overflows under typical annual precipitation conditions
- Reduction program, in combination with the identify sewer and SPS upgrades are required to achieving a net reduction in system overflows and longer-term objective of eliminating overflows
- As there are existing system overflows, there should be a short-term objective of removing wet weather flows at a rate equal to or greater than new development flows

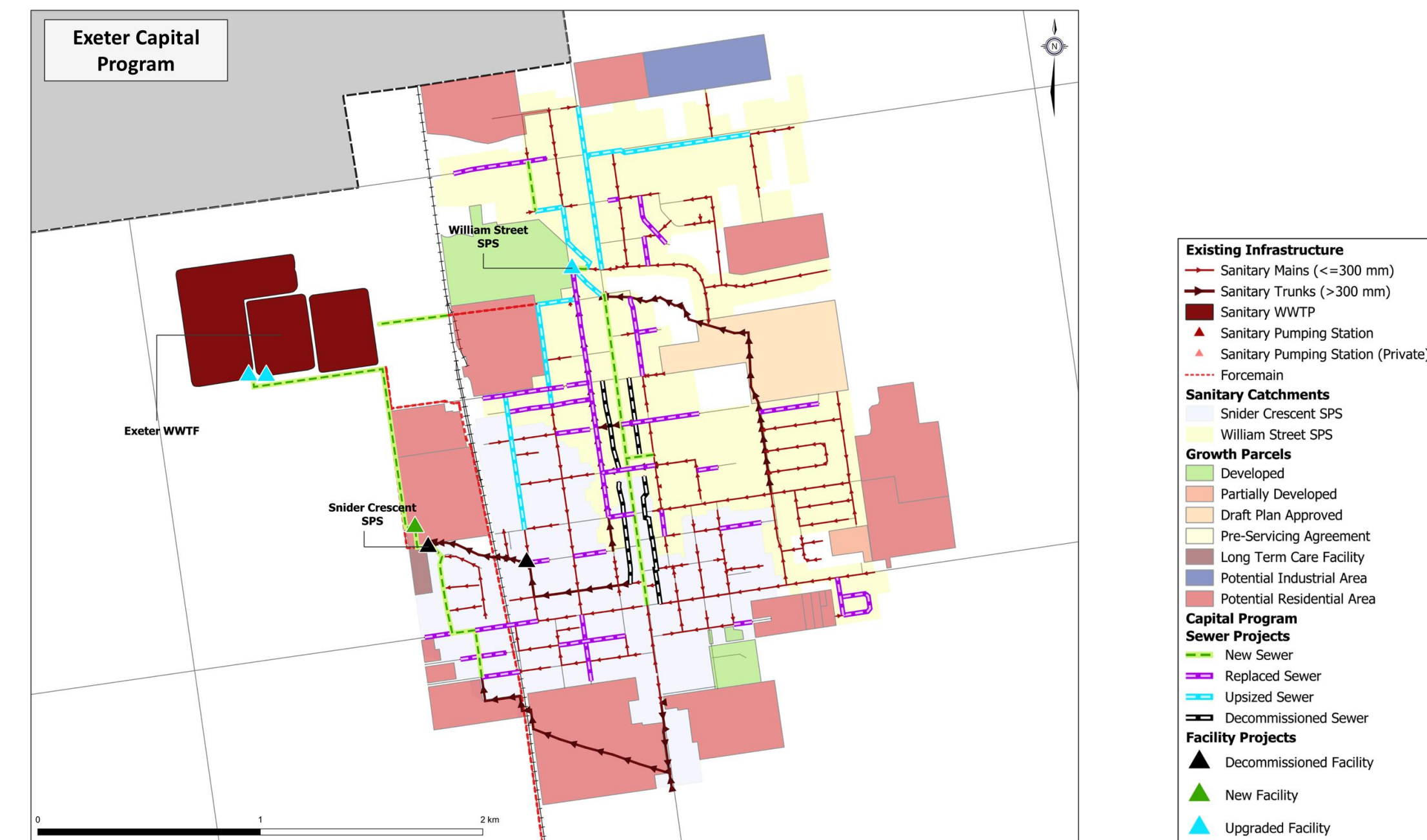


Wastewater Servicing – Capital Program



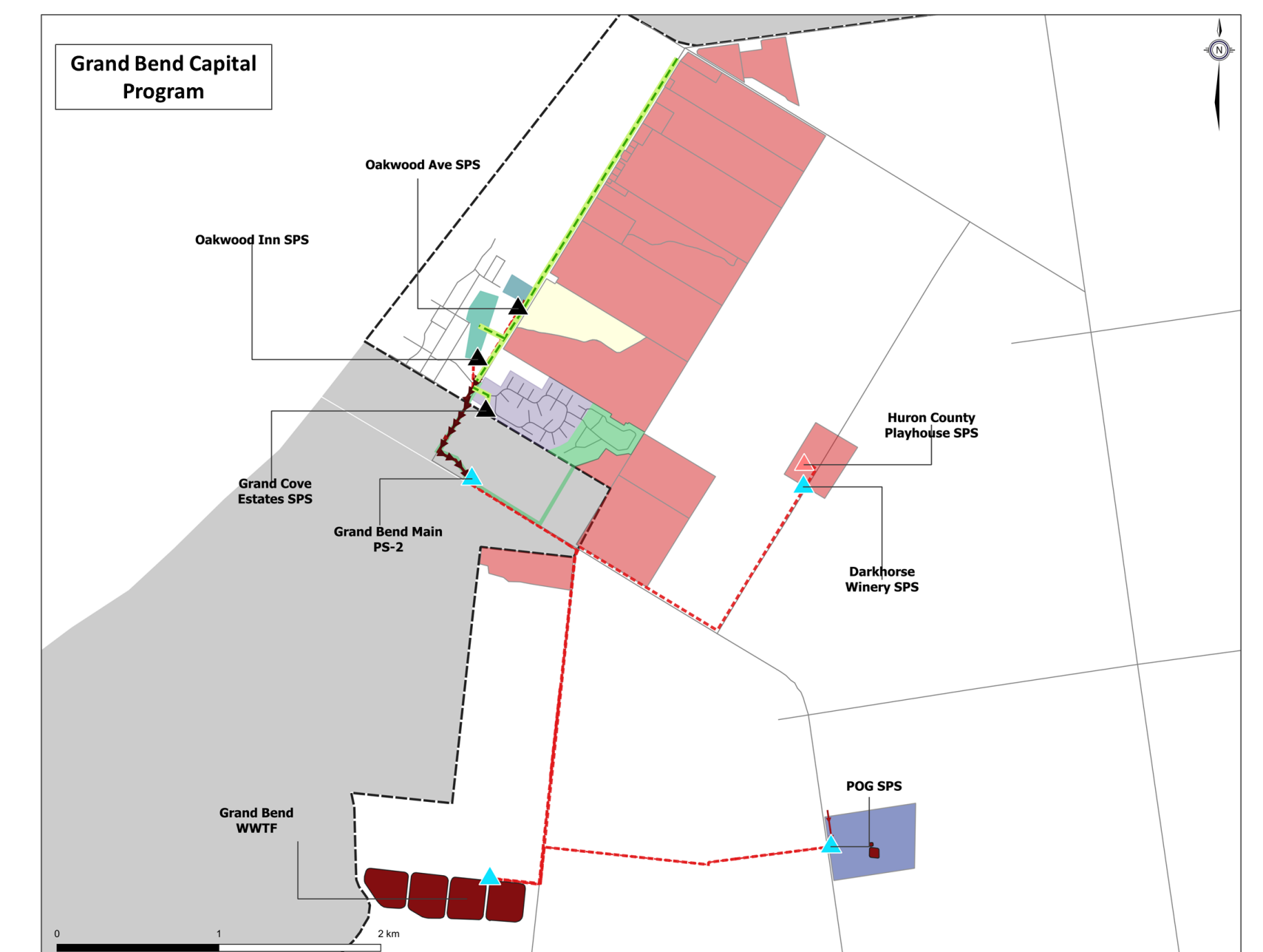
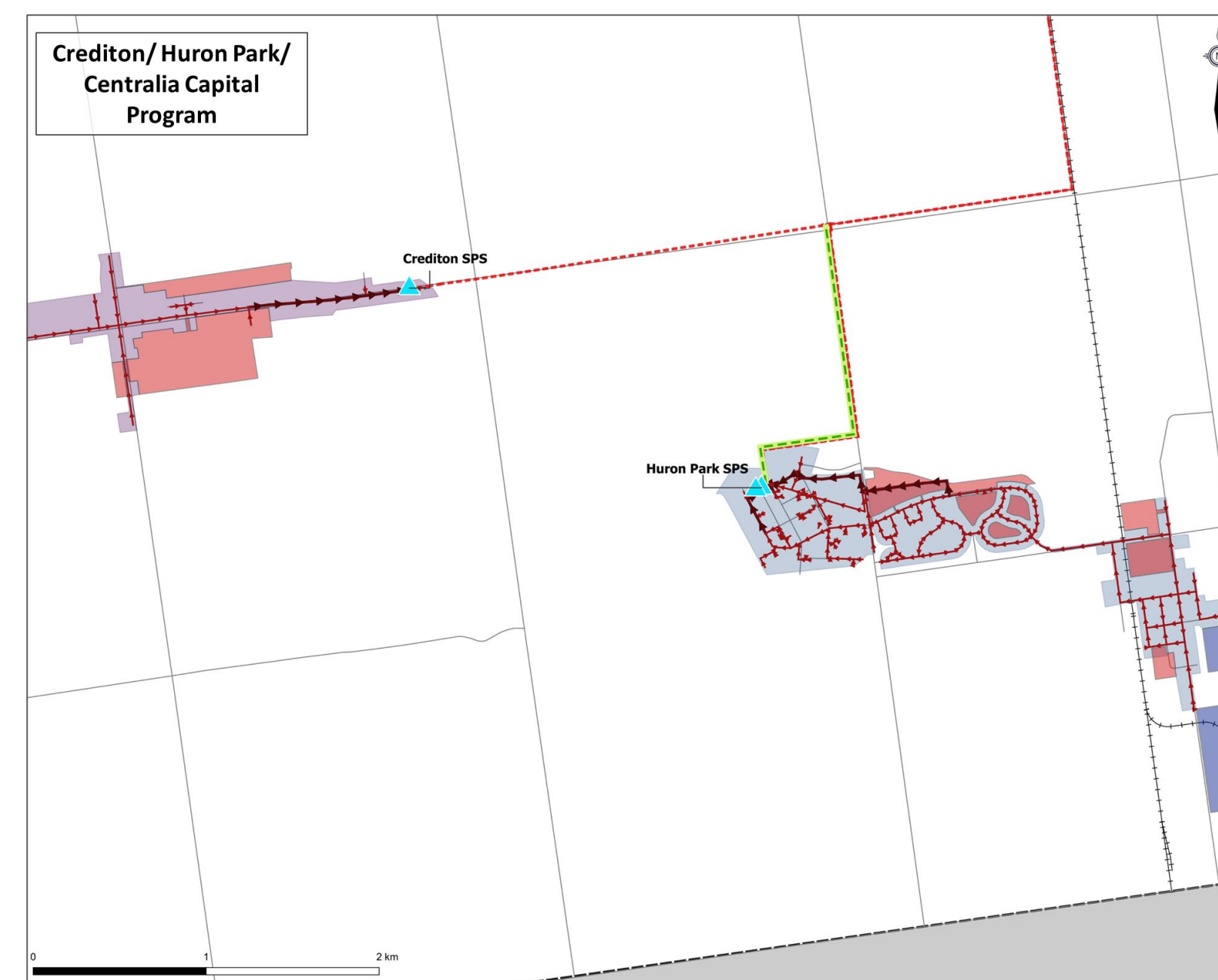
Preferred Wastewater Capital Program - Exeter

- Continued upgrades at the Exeter WWTF in line with the long-term strategy and as triggered by capacity and effluent criteria
- Construction and commissioning of the South Exeter SPS and forcemain to service proposed growth and existing Snider Crescent SPS flow
- Upsize sewer from Waterloo Street to the Snider Crescent SPS to accommodate existing and growth flows in south Exeter
- Implementing an I&I Reduction program in Exeter to address existing high peak wet weather flows
- Upgrade sewers in line with planned road reconstruction projects
- New trunk sewer along Main Street with services from all buildings fronting Main Street to allow for decommissioning of back-alley sewers



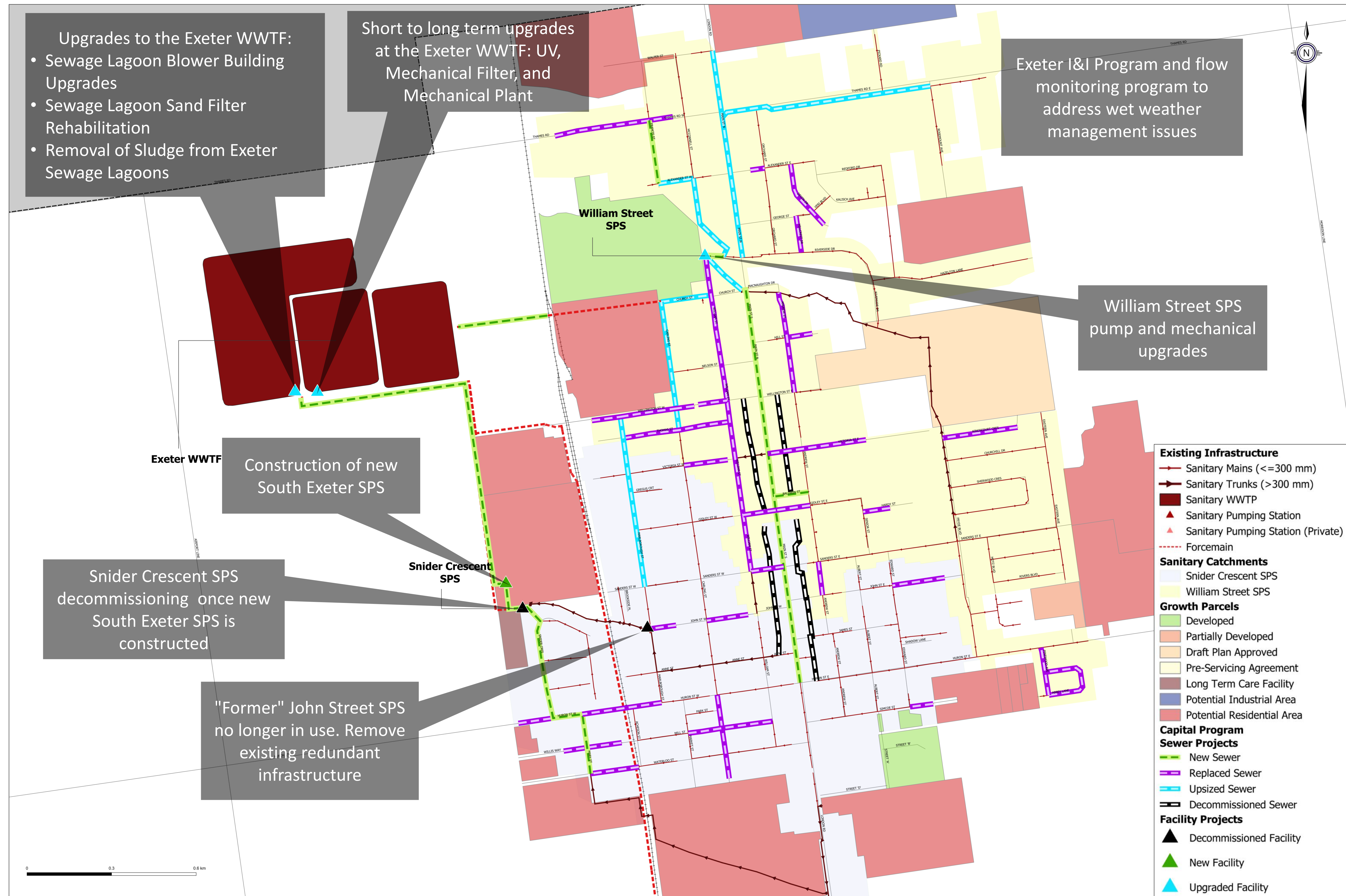
Preferred Wastewater Capital Program - Stephen

- Stephen includes Crediton, Huron Park, Centralia, and Grand Bend Capital Programs
- Extending the trunk sewer along Highway #21 to service development in Grand Bend
- Decommissioning private sanitary pumping stations and connecting to the existing gravity network along Highway #21
- Implementing an I&I Reduction program in Huron Park to address existing high peak wet weather flows

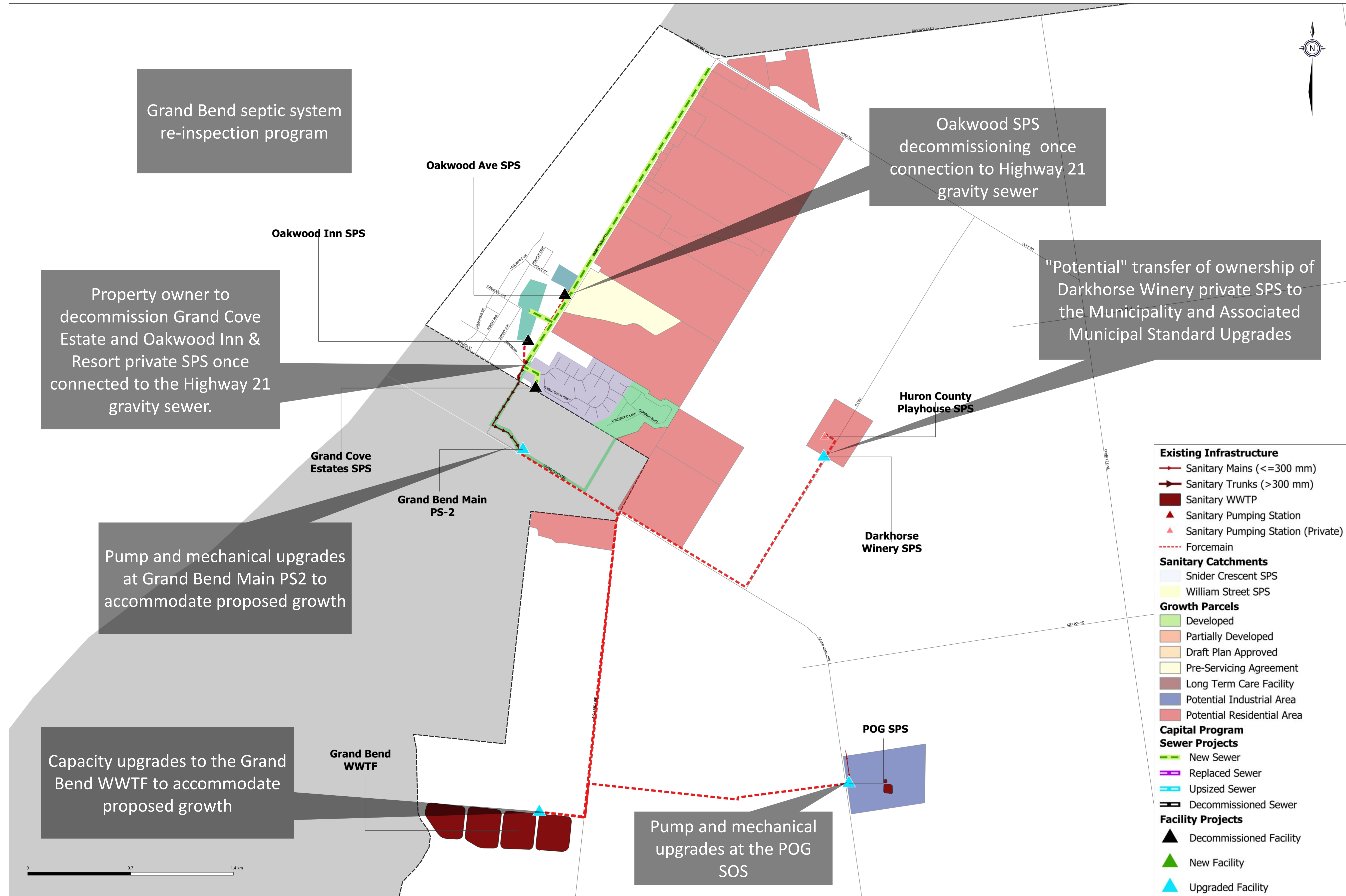


Capital Project	Exeter Project Costs	Stephen Project Costs	Total Project Costs
Linear Projects	\$ 36,150,000	\$ 12,298,000	\$ 48,448,000
Facility Projects	\$ 50,114,000	\$ 13,160,000	\$ 63,274,000
I/I Reduction Program	\$ 6,235,000	\$ 847,000	\$ 7,082,000
Total Wastewater Capital Project Costs	\$ 92,499,000	\$ 26,305,000	\$ 118,804,000

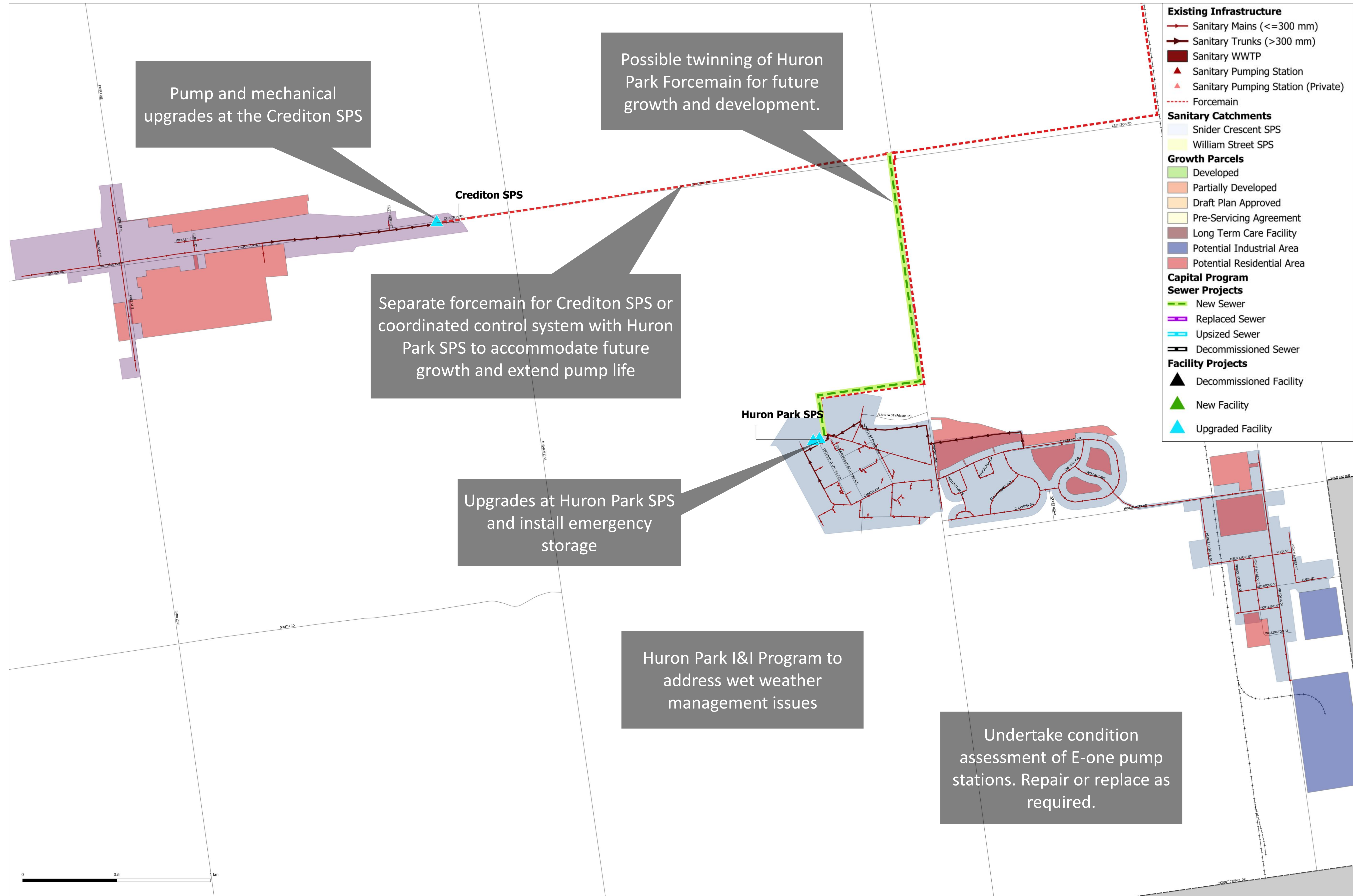
Wastewater Servicing – Capital Program (Exeter)



Wastewater Servicing – Capital Program (Grand Bend)



Wastewater Servicing – Capital Program (Huron Park, Centralia, and Crediton)



Thank you for your participation!



We want to hear from you!
Please let us know your thoughts by filling out a comment form.
If you have any questions or input, please speak with one of the project team members here, and/or you may contact the Municipality of South Huron Project Manager:

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Please note that information related to this study will be collected in accordance with the *Freedom of Information and Protection of Privacy Act*.
All comments received will become part of the public record and may be included in the study documentation prepared for public review.