Town of Cornwall

Drought Contingency Plan

May 2026

1. INTRODUCTION

The Town of Cornwall has prepared this Drought Contingency Plan to ensure readiness for potential drought conditions that may affect groundwater quality and supply. The plan provides a framework of actions and strategies the Town can use to help Cornwall effectively manage and mitigate localized drought impacts.

It explains the purpose of the plan, outlines its scope, and establishes the importance of proactive water management in safeguarding residents, businesses, and the environment.

2. DECLARATION

The Town of Cornwall formally adopts this Drought Contingency Plan in accordance with the *Prince Edward Island Water Act* and Water Withdrawal Regulations. It is the policy of the Town's Water and Sewer Utility that all customers, staff, and stakeholders shall comply with the provisions of this plan when drought conditions are declared.

Through this plan, the Town commits to:

- Conserving and protecting available water resources;
- Ensuring the reliable provision of safe drinking water and essential municipal services;
- Enforcing restrictions and promoting conservation practices during drought events;
- Coordinating with provincial authorities and neighboring permit holders to minimize environmental impacts.

This Declaration affirms the Town's responsibility as a steward of water resources and establishes the authority to implement this plan.

3. WATER SOURCE IDENTIFICATION

The Utility operates four water pumping stations with ten active wells located across three watersheds that provide potable drinking water to residents and customers of the Town of Cornwall Utility.

Wellfield	Number of Active Wells	Watershed	Extraction Permit
East Wiltshire	2	North River Watershed	unknown
Main Street	4	Clyde River/Hyde Creek Watershed	GWA2018-08
Meadowbank	3	Hyde Creek Watershed	GWA2017-01
Northgate	1	Hyde Creek Watershed	GWAP1998-14

The average daily water consumption between 2015 and 2023 was estimated at 1,913 m^3/day, equivalent to 320 litres per capita per day (L/c/d). This rate falls within the recognized guidelines outlined in the Atlantic Canada Water Supply Guidelines (ACWWA, May 2022), which recommend a typical range of 270–450 L/c/d. The relatively lower consumption rate of approximately 320 L/c/d is likely attributable to the Town's primarily residential character, with minimal commercial development contributing to demand.

The Utility also operates a small water system (SWS) at River Point (McKenna Subdivision) that has 2 wells and provides water to 15 lots of which only 7 are currently developed. Since it is a SWS it has not been included in water demand calculations but as residents would be contacted and included in outreach and engagement activities.

Water Demands Current and Future Growth

Water demands were projected in the Utility Master Plan (exp., February 2024) for 5, 15 and 25- year planning horizons, based on the number of additional housing units required for each horizon. Residential projections were informed by the Charlottetown Region Growth Study and Housing Needs Assessment (Stantec, May 2022).

Since the Town presently has very little commercial development, a separate allowance was included for potential future commercial growth. Based on a projected population of 8,456 and an average day demand of 3083 m^3/d in 2046, the per capita consumption is expected to rise to 365 L/c/d which is more typical of municipality with commercial type development. The maximum day demand for each planning horizon was projected based on the maximum day multiplier of 1.70.

Year	Projected Population	Projected Average Day Residential Water Consumption, m^3/d	Projected Additional Average Day Non-Residential Water Consumption, m^3/d	Total Projected Average Day Water Demand, m^3/d (L/s)	Projected Maximum Day Water Demand, m^3/d (L/s)
2021	6,369	2038	0	2038 (23.6)	3465 (40.1)
2026	6,870	2198	72	2270 (26.3)	3859 (44.7)
2036	7,664	2452	322	2775 (32.1)	4717 (54.6)
2046	8,456	2706	378	3083 (35.7)	5241 (60.7)

From the population projections, analysis shows that an additional supply source may be needed by 2046 to meet demands beyond the 25-year planning horizon.

4. VULNERABILITY ASSESSMENT

Current and Future Demand

The Atlantic Canada Water and Wastewater Association (ACWWA) guidelines recommends that the supply source be capable of supplying the Maximum Day Demand based on having the largest well out of service.

Well	L/min	Current Well Status
East Wiltshire Well #1	319.4	Active
East Wiltshire Well #2	187.9	Active
Main Street Well #1	321.6	Active
Main Street Well #2	757.2	Active
Main Street Well #3	1116.6	Active
Main Street Well #4	1098.0	Active
Meadowbank Well #1	265.0	Active
Meadowbank Well #2	340.7	Active
Meadowbank Well #4	643.8	Active
Northgate Well #1	219.5	Active
Total Available Well Capacity	**5269.4**	

If the largest well (Main Street #3) is out of service, available capacity decreases to 4152.8 L/min. In 2026, the maximum day demand is projected at 2679.9 L/min. Based on this, the current supply is adequate.

Storage and Fire Flow

A key function of any municipal water system is maintaining adequate supply for fire protection. Using a hydraulic model, available fire flows were assessed under Maximum Day Demand conditions, with a required residual pressure of 150 kPa (22 psi) in accordance with ACWWA Guidelines. The analysis indicates that, under current conditions, many areas of the system provide less than 38 L/s. This limited capacity is largely due to the presence of 100 mm watermains, which were originally designed to serve only domestic needs. However, certain sections of the distribution system are capable of delivering more than 94.6 L/s. To distinguish between areas of high and low fire flow capacity, the Town employs the National Fire Protection Association's (NFPT) hydrant colour-coding system.

Water storage requirements under ACWWA guidelines include:

- Peak Balancing Storage – accommodates normal daily fluctuations in water use.
- Fire Flow Storage – typically 9,100 L/min sustained for two hours.
- Emergency Storage – reserve capacity for disruptions such as breaks, outages, or maintenance.

With the new water tower in service, and assuming the largest well is offline, storage remains sufficient to meet ACWWA recommendations, confirming reliability for fire protection and emergencies.

Power Loss

Risk management must also consider the loss of electrical power. Power loss can occur due to high demand of electricity on the local power grid or other event such as weather, fire or accident.

Currently, only the Main Street wellfield has a backup generator. It can run all pumps concurrently for approximately 3 days before refueling, which meets current average day demand. Future upgrades should include installing a generator and transfer switch at Meadowbank Wellfield to support extended power outages.

5. MITIGATION MEASURES

The Town recognizes that drought resilience requires both operational improvements and community engagement. To that end, the Utility has developed initiatives to help residents and businesses reduce water consumption and minimize waste.

A key operational priority for the Utility is identifying and repairing leaks within the distribution system. By addressing water loss promptly, the Town ensures that available resources are used efficiently and that supply remains dependable during periods of stress.

Each spring, the Utility circulates a water-saving brochure with household bills. It provides practical advice on responsible water use, outdoor watering practices, and managing household demand.

The Town has also implemented a home water audit program, where trained staff identify opportunities for conservation within homes and businesses. A rebate program encourages and supports installation of low-flow fixtures such as toilets, showerheads, and washing machines.

Education is central to the Town's long-term strategy. In partnership with Stratford and Charlottetown, the Town participates in the "WaterSchool" program for Grade 5 students at

Eliot River School. The program integrates directly into the curriculum, teaching students about the water cycle, watershed management, and the importance of conservation.

The Utility has considered universal metering, but the cost of implementation has prevented the program from moving forward until external funding is available. Currently all commercial businesses and apartment buildings within the Town with more than three units have water meters installed ensuring accurate monitoring of larger water users.

Finally, the Town has partnered with the Cornwall Area Watershed Group to develop a digital messaging program to provide ongoing updates through social media and the Town's website, offering practical conservation tips, seasonal reminders, and information on drought status.

By combining operational improvements, household programs, education, and community partnerships, the Town of Cornwall is building a comprehensive approach to drought mitigation that emphasizes both efficiency and engagement.

6. DROUGHT STATUS MONITORING

The Utility will monitor drought conditions using both national indicators and local data to anticipate and prepare for extreme drought. This monitoring program ensures timely awareness of changing conditions and provides the basis for activating appropriate response measures in accordance with recognized standards.

The Canadian Drought Monitor (CDM) integrates federal, provincial, and regional data sources to establish a single drought rating based on a five-category system. Ratings are published monthly on the CDM website through maps that illustrate the extent and intensity of drought across Canada. Complementing this, the Canadian Drought Outlook provides forecasts indicating whether drought conditions are expected to develop, persist, or improve by the end of the target month.

Local monitoring includes:

- Daily and monthly precipitation tracking from Environment Canada weather stations and municipal gauges.
- Streamflow observations in the North River and Hyde Creek watersheds to assess impacts on aquatic ecosystems.
- Periodic measurement of groundwater levels in wellfields to detect early signs of supply stress.
- Operational data such as daily withdrawal volumes from municipal wells compared against historical averages to identify unusual demand patterns.

Roles and responsibilities are clearly defined to ensure compliance with provincial guidance. Utility staff will:

- Review drought status monthly during high-risk periods (June to September) and quarterly during other times.
- Coordinate with the Department of Land and Environment to maintain consistency with provincial reporting requirements.

The Utility Manager is responsible for implementing action items when thresholds are met and for initiating communication and response measures as required.

Drought Classification	Risk Ranking	Action Summary
D0 - Abnormally Dry 1 in 3-year event	Low	Low risk to groundwater supply. No additional action required.
D1 - Moderate Drought 1 in 5-year event	Low	Low risk to groundwater supply. No additional action required.
D2 - Severe Drought 1 in 10-year event	Medium	Medium risk to groundwater supply. Increase public outreach and engagement.
D3 - Extreme Drought 1 in 20-year event	High	Medium risk to groundwater supply. Impose voluntary water restrictions.
D4 - Exceptional Drought 1 in 50-year event	Extreme	High Risk to ground water supply. Enforce water restrictions on all customers.

During Drought conditions, the Town will communicate early and often with water users and stakeholders. Notices will be shared through the Town's website, social media, press releases and direct customer notices.

7. DROUGHT RESPONSE ACTIONS

Potable drinking water is recognized as a basic human right and is essential for daily living, including consumption, food preparation, sanitation, and public health. During periods of drought, the Utility will implement a staged response to safeguard water supplies while maintaining essential services. These measures begin with voluntary conservation requests and may escalate to mandatory restrictions under municipal bylaws if conditions worsen. The Department of Land and Environment will initiate the Town to trigger the drought response actions based on drought conditions and water resources stress levels.

D3 – Extreme Drought (Voluntary Measures)

When drought conditions are classified as **Extreme (D3)**, the Utility will advise residents to voluntarily conserve water. Recommended measures include:

- Reducing outdoor watering to designated hours (5:00 a.m. – 10:00 a.m. and 7:00 p.m. – 1:00 a.m.).
- Limiting non-essential activities such as filling swimming pools, hot tubs, and washing vehicles or driveways.
- Practicing efficiency indoors by washing only full loads in dishwashers and washing machines, taking shorter showers, and turning off faucets while brushing teeth or shaving.

These voluntary measures are designed to reduce peak demand while preserving flexibility for essential uses such as gardens and food production. It is estimated that implementing these measures during the summer months could reduce water demand by 10–20%.

D4 – Exceptional Drought (Mandatory Restrictions)

If drought conditions escalate to **Exceptional (D4)**, voluntary measures will transition to mandatory restrictions.

- Outdoor watering will be prohibited except for gardens.
- All non-essential uses such as filling pools, washing vehicles, or cleaning paved surfaces will be suspended.
- Indoor conservation practices, including washing only full loads and reducing shower times, will be strongly encouraged.

At this stage, the Utility will issue formal notices to customers outlining the restrictions and associated penalties for non-compliance. It is estimated that implementing mandatory water-saving measures during the summer months could reduce water demand by 20–30%.

If a customer fails to comply with mandatory restrictions, the Utility may temporarily discontinue service to the property under the authority of the Town of Cornwall Water and Sewer Utility Bylaw. Specifically, Section 3.11 ("Improper Use or Waste of Water") prohibits wasteful practices and unauthorized transfers, while Section 3.14 ("Suspension of Service for Violation") authorizes the Utility to suspend service until the offence has been remedied. Enforcement will be applied fairly and consistently, with priority given to protecting the municipal water supply.

Throughout all stages of drought response, the Town will maintain clear and frequent communication with residents and stakeholders. Updates will be provided through the

Town's website, social media platforms, press releases, and direct notices to customers. Public engagement will emphasize the importance of conservation, explain the rationale for restrictions, and provide practical guidance on how households and businesses can adapt.

Drought Response Actions and Targeted Demand Reduction

During drought conditions, the Town will prioritize the protection of potable water supplies for essential residential and institutional use, recognizing that Cornwall's water system is predominantly residential in nature with limited discretionary demand available for curtailment.

Targeted Demand Reduction Measures

Given that approximately 90 percent of water demand within the Town is residential, water conservation efforts during drought conditions will focus primarily on community wide participation, supported by targeted restrictions where discretionary or non essential uses exist.

Specific demand reduction measures may include:

Municipal Parks and Recreation Facilities

Where feasible, water supplies to parks, landscaped areas, and recreational facilities may be shut off or restricted. Facilities such as the Terry Fox Sports Complex, which rely primarily on natural rainfall and use water mainly for washroom facilities, present limited reduction opportunities; however, discretionary water uses will be curtailed where possible.

Commercial Discretionary Uses

Commercial operations with non-essential water use, including car wash and truck wash facilities, may be subject to early restrictions or temporary suspension during higher drought stages. Cornwall has no significant industrial water users that rely on water for core production processes.

Residential Outdoor Water Use

Residential outdoor water use represents the most effective opportunity for meaningful demand reduction. Staged restrictions on lawn watering, vehicle washing, pool filling, and other non-essential outdoor activities will be implemented in accordance with the drought classification levels outlined in the Plan.

Institutional and Essential Services

Essential institutional users, including schools and emergency services, will be prioritized to ensure continued operation for public health and safety. The Utility will work collaboratively

with these users to encourage conservation practices while maintaining necessary service levels.

8. PERFORMANCE MONITORING

Effective performance monitoring ensures that the Drought Contingency Plan achieves its intended goals of reducing water demand, protecting groundwater supplies, and safeguarding aquatic ecosystems. The Utility will implement a structured monitoring program to evaluate both compliance and effectiveness during drought conditions.

The Utility will track weekly water withdrawals from all municipal wellfields and compare them against historical averages and projected demand. This data will confirm whether reductions in consumption are occurring as expected. Particular attention will be paid to peak demand periods, where conservation measures are most critical.

Compliance with voluntary and mandatory restrictions will be assessed through a combination of customer reporting, field inspections, and meter data from commercial and multi-unit properties.

The Utility will monitor the effectiveness of public communication campaigns by tracking engagement metrics such as website visits, social media interactions, and participation in conservation programs. Feedback from residents and businesses will be collected to assess whether outreach efforts are influencing behavior and improving awareness.

9. TERMINATION OF DROUGHT RESPONSE

The termination of drought response measures will be determined jointly by the Department of Land and Environment and the Town of Cornwall Water and Sewer Utility. Restrictions will remain in effect until conditions have demonstrably improved.

Termination will occur when either:

- The **Canadian Drought Outlook** indicates improving conditions for the affected region; or
- The **Canadian Drought Monitor** reduces the drought classification below the threshold requiring response actions.

Local streamflow and groundwater monitoring will also be considered to ensure that water supplies and aquatic ecosystems have stabilized.

The Utility will communicate the termination of restrictions promptly through the Town's website, social media, press releases, and direct notices.

Restrictions will not be lifted based on a single rainfall event; sustained improvements in precipitation, streamflow, and groundwater levels must be sustained.

10. APPROVAL AND RENEWAL

This Drought Contingency Plan shall be submitted to the Department of Land and Environment for review in support of the Town's Water Withdrawal Permit. Upon approval, the plan remains valid for the term of the permit.

The Town will review and resubmit the plan at the time of permit renewal, or sooner if significant operational or regulatory changes occur. Any amendments will be forwarded to the Department of Land and Environment for approval to ensure continued compliance with provincial requirements.

Regular review and renewal of this plan ensures that the Town's drought response strategies remain current, effective, and aligned with both community needs and environmental stewardship.

SUBMISSION AND APPROVAL

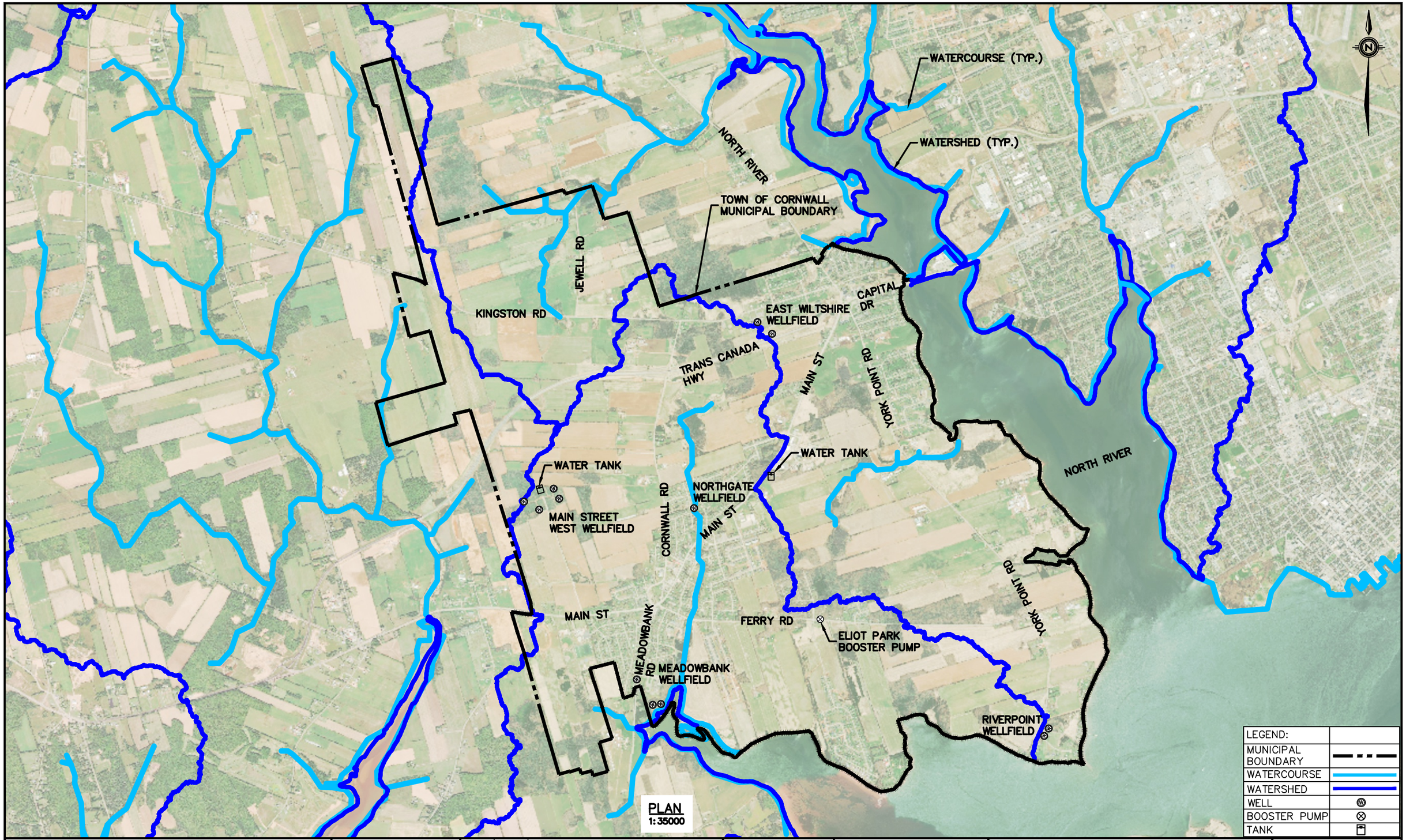
Submitted by:
Town of Cornwall Water and Sewer Utility

Signature:
Name (Printed): Doug Longaocre
Position: Infrastructure Manager
Date: May 28, 2026

Approved by:
Department of Land and Environment

Signature
Name (printed): Ahmad Zeeshan Bhatti
Position: Watershed Hydrogeologist

Date 2 June, 2026



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TOWN OF CORNWALL

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MK.	DATE	REVISION

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Surveyed by :
Drawn by : K. Kaur
WSP Project : CA-WSP-161-10370-00

Scale : AS NOTED
Date : MAY 15, 2026

Title :

TOWN OF CORNWALL OVERALL PLAN & WATER DISTRIBUTION INFRASTRUCTURE

Drawing No.

SK01

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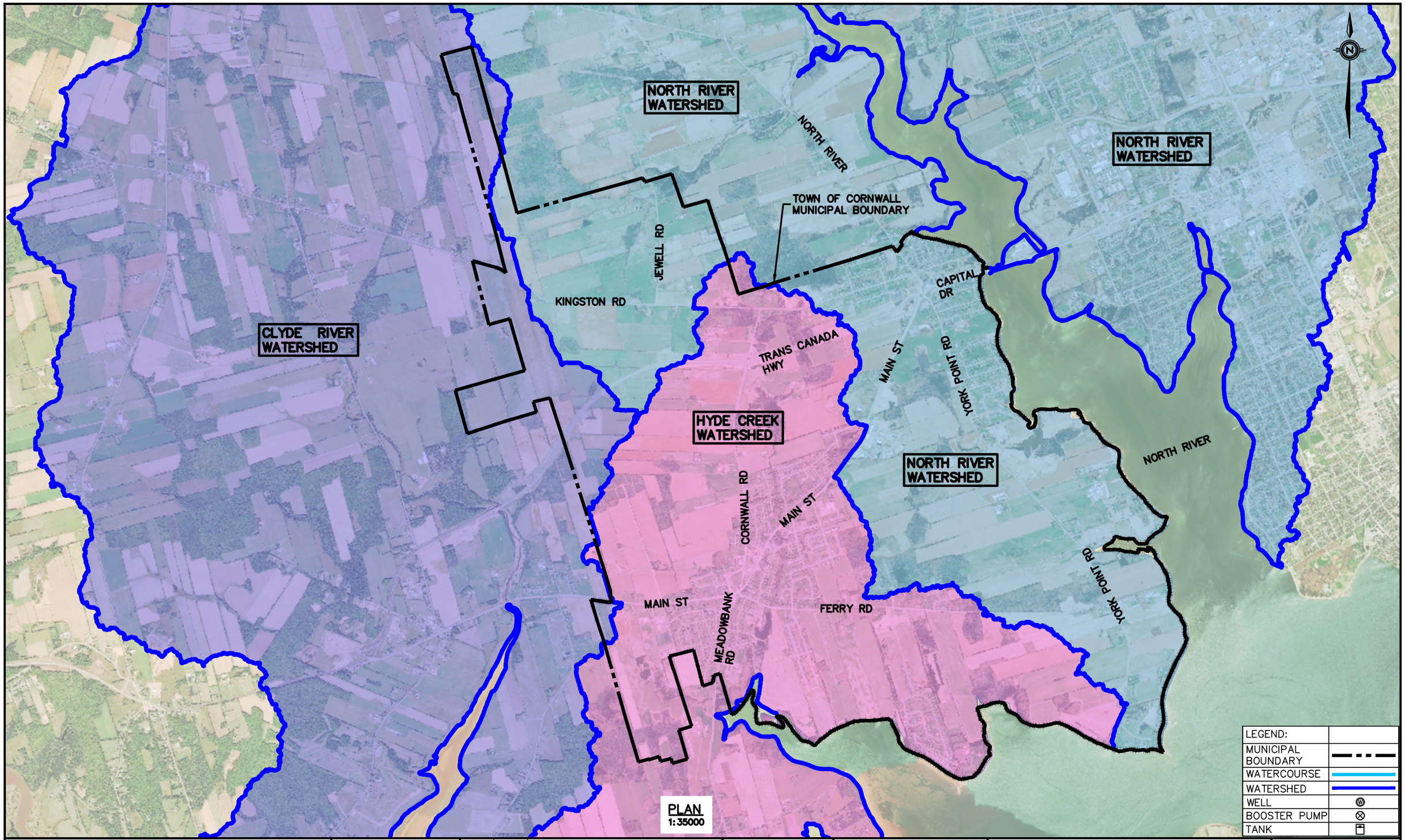

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TOWN OF CORNWALL

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Designed by : WSP Canada Inc.

Surveyed by :

Drawn by : K. Kaur

WSP Project : CA-WSP-161-10370-00

Scale : AS NOTED

Date : MAY 15, 2026

Title :

TOWN OF CORNWALL WATERSHEDS

Drawing No.

SK02

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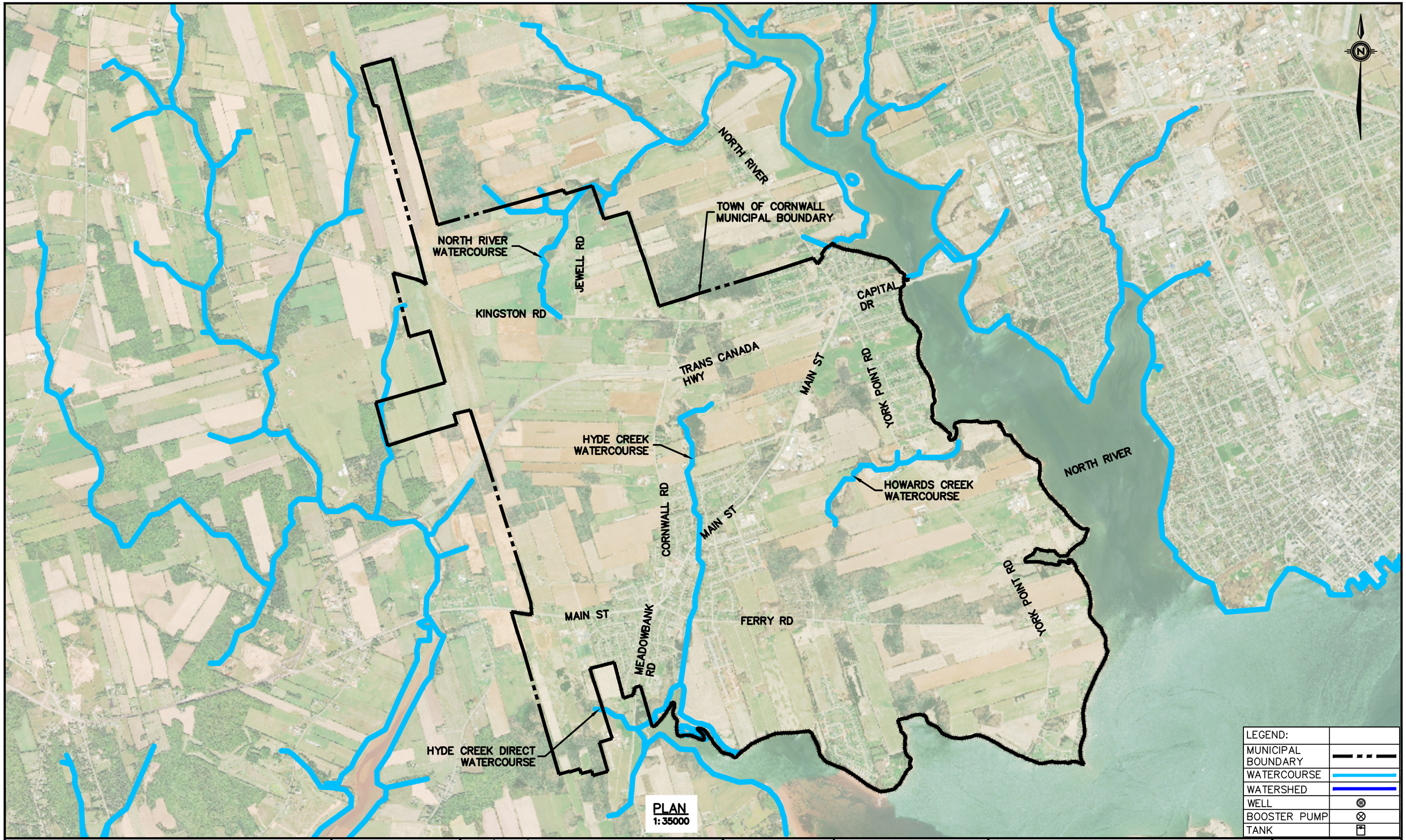

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TOWN OF CORNWALL

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Surveyed by :
Drawn by : K. Kaur
WSP Project : CA-WSP-161-10370-00

Scale : AS NOTED
Date : MAY 15, 2026

Title :

TOWN OF CORNWALL WATERCOURSES

Drawing No.

SK03