



FINAL REPORT

**A REVIEW OF ONTARIO'S WATER QUANTITY  
MANAGEMENT FRAMEWORK:  
WATER QUANTITY STUDY AREA REPORT**

**Appendix A – Part 3**

Prepared for:

**Government of Ontario**  
**Ministry of the Environment, Conservation and Parks**  
Standards Development Branch  
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Project Number: 180107-06  
Submission Date: 28 March 2019

**This report has been separated in 5 sections for internet posting.**

## **REPORT BODY AND APPENDIX C**

### **APPENDIX A - PART 1**

- FIGURES for Guelph – Centre Wellington, Orangeville and Norfolk Sand Plain Water Quantity Study Areas

### **APPENDIX A - PART 2**

- FIGURES for Innisfil And Whitemans Creek Water Quantity Study Areas

### **APPENDIX A - PART 3**

- FIGURES for Quinte Water Quantity Study Area

### **APPENDIX A - PART 4**

- FIGURES for Chapleau Water Quantity Study Area

Appendix B has been removed from the posted report in accordance with privacy requirements.

**(Inserted by the Ministry of the Environment, Conservation and Parks, June 2020)**



**LEGEND**

- Major Watercourse
- Watercourse
- Preliminary Water Quantity Study Area (WQSA)
- Municipalities
- Conservation

1				
REV	DESCRIPTION	YY/MM/DD	BY	CHK

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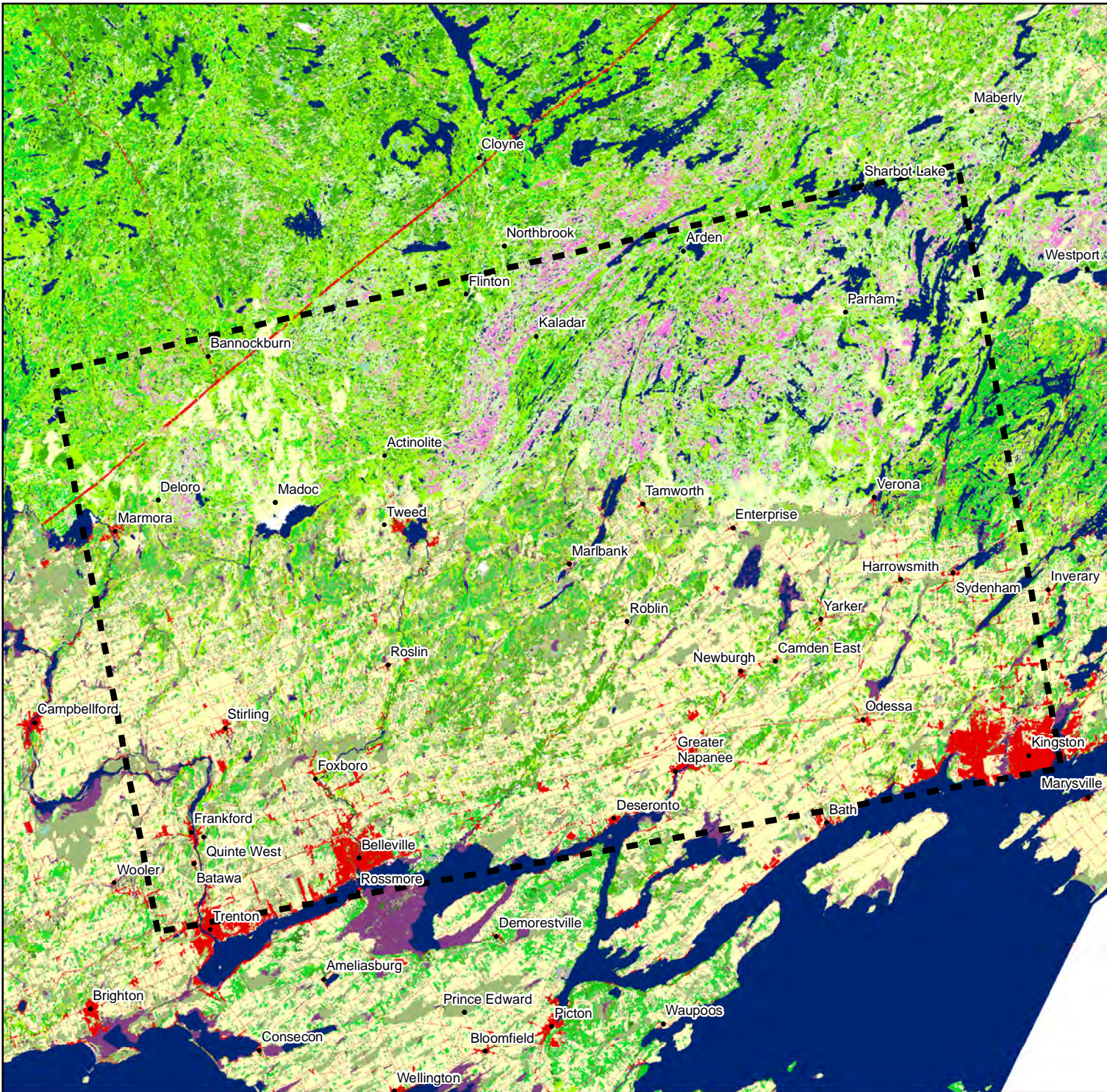
**CLIENT**  
 Ministry of the Environment, Conservation and Parks (MECP)

**PROJECT**  
 Assessment of Water Resources to Support a Review of Ontario's Water Quantity Management Framework

**TITLE**  
 Quinte Water Quantity Study Area Boundary

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<b>DRAWN</b> KH	<b>CHECKED</b> HH/FAR	<b>FIG NO.</b> 9-1	<b>REV</b> 0



**LEGEND**

- Preliminary Water Quantity Study Area (WQSA)
- 1 - Clear Open Water
- 3 - Shoreline
- 5 - Marsh
- 6 - Swamp
- 7 - Fen
- 8 - Bog
- 11 - Sparse Treed
- 12 - Treed Upland
- 13 - Deciduous Treed
- 14 - Mixed Treed
- 15 - Coniferous Treed
- 16 - Plantations - Treed Cultivated
- 17 - Hedge Rows
- 21 - Sand Barren and Dune
- 23 - Tallgrass Savannah
- 24 - Tallgrass Woodland
- 25 - Sand/Gravel/Mine Tailings/Extraction
- 26 - Bedrock
- 27 - Community/Infrastructure
- 28 - Agriculture and Undifferentiated Rural Land Use

1					
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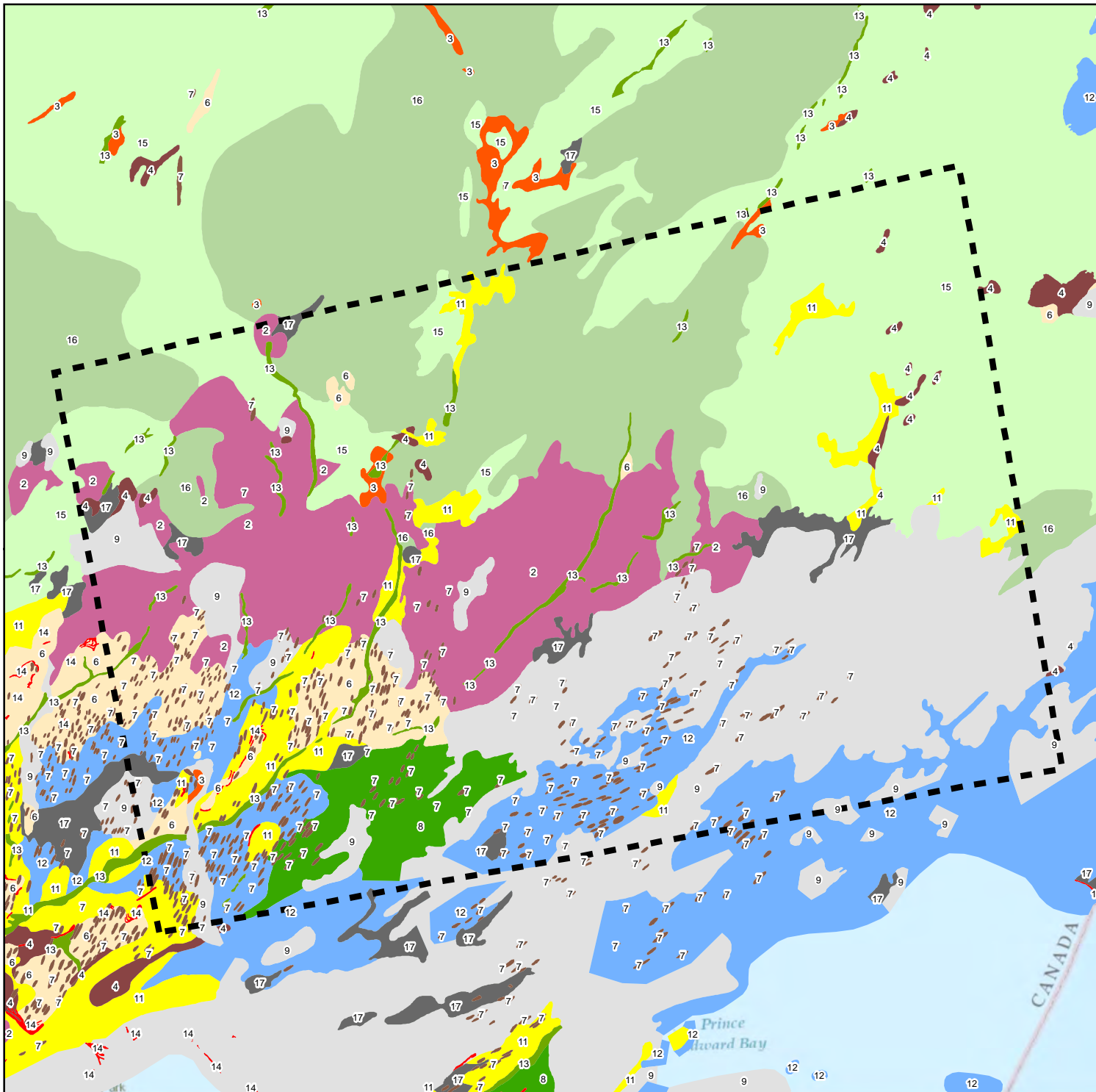
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**TITLE**  
 Quinte Land Cover

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**LEGEND**

Preliminary Water Quantity Study Area (WQSA)

**Southern Ontario Physiography**

- 17: Peat And Muck
- 16: Bare Rock Ridges And Shallow Till
- 15: Shallow Till And Rock Ridges
- 14: Beaches
- 13: Eskers
- 12: Clay Plains
- 11: Sand Plains
- 9: Limestone Plains
- 8: Bevelled Till Plains
- 7: Drumlins
- 6: Till Plains (Drumlinized)
- 4: Kame Moraines
- 3: Spillways
- 2: Till Moraines

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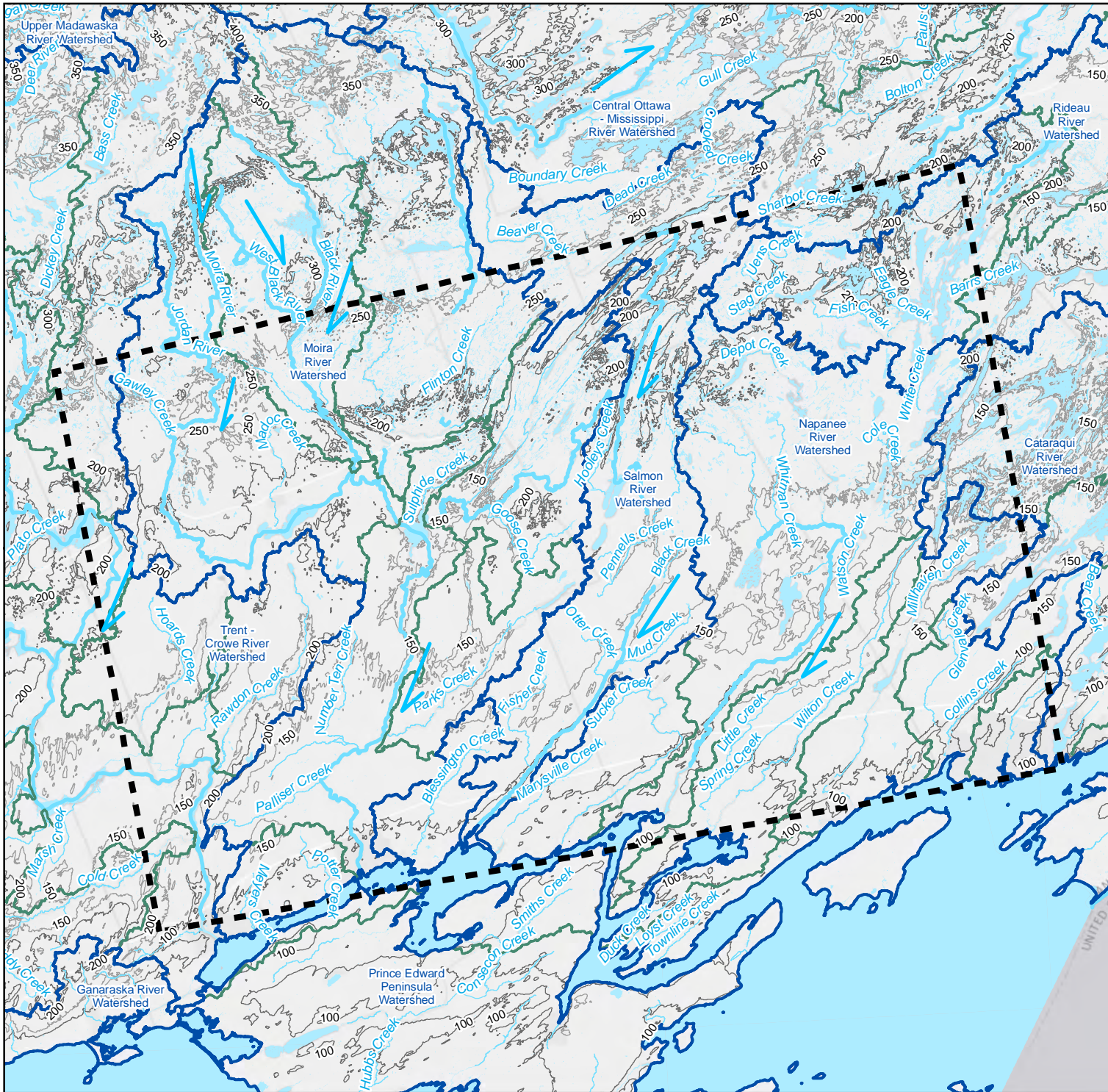
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**TITLE**  
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**LEGEND**

- Preliminary Water Quantity Study Area (WQSA)
- Tertiary Watershed Boundary
- Quaternary Watershed Boundary
- Major Water Course and Flow Direction
- Watercourse

**Elevation Contours**

- 100 m
- 50 m

1				
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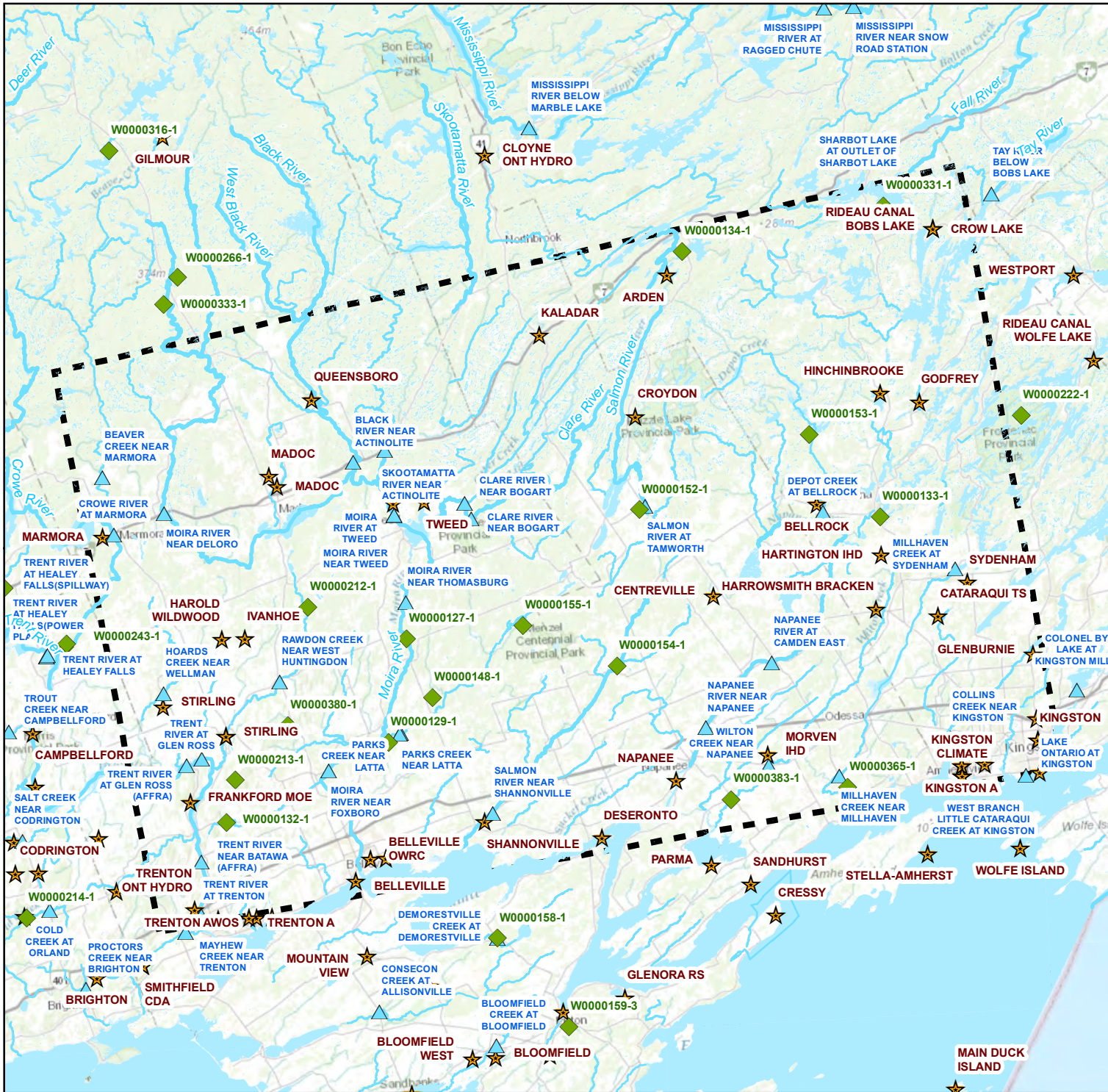
**CLIENT**  
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**TITLE**  
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- LEGEND**
- ◆ Provincial Groundwater Monitoring Network Wells
  - ▲ HYDAT Stations
  - ★ Weather Stations
  - Major Watercourse
  - Watercourse
  - Preliminary Water Quantity Study Area (WQSA)

1				
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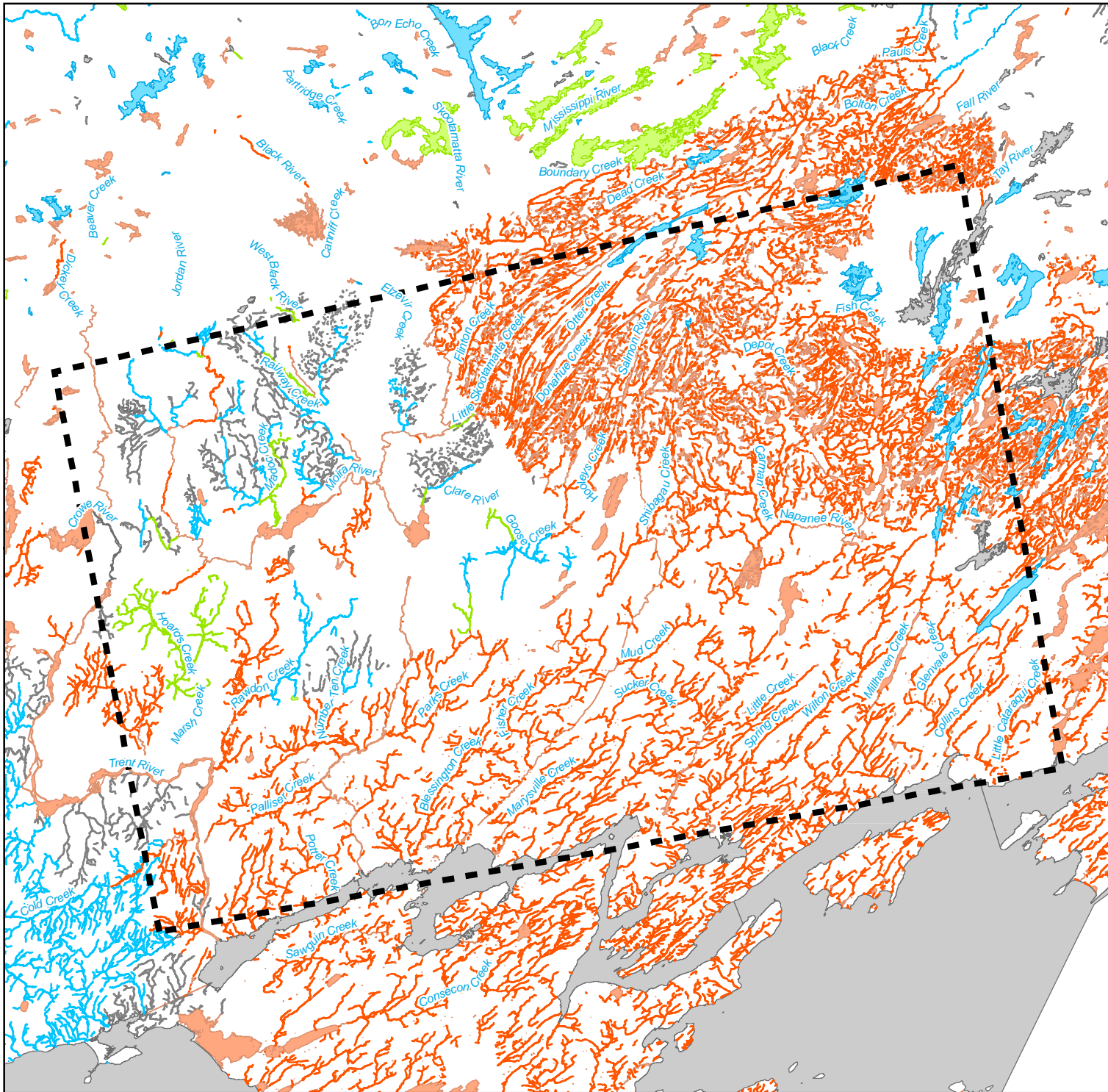
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**TITLE**  
 Quinte Meteorological Stations

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<b>DRAWN</b> KH	<b>CHECKED</b> RH	<b>FIG NO.</b> 9-5	<b>REV</b> 0



**LEGEND**

■ Preliminary Water Quantity Study Area (WQSA)

**Thermal Regime**

- Unknown
- Cold
- Cool
- Warm

**Thermal Regime**

- Unknown
- Cold
- Cool
- Warm

1				
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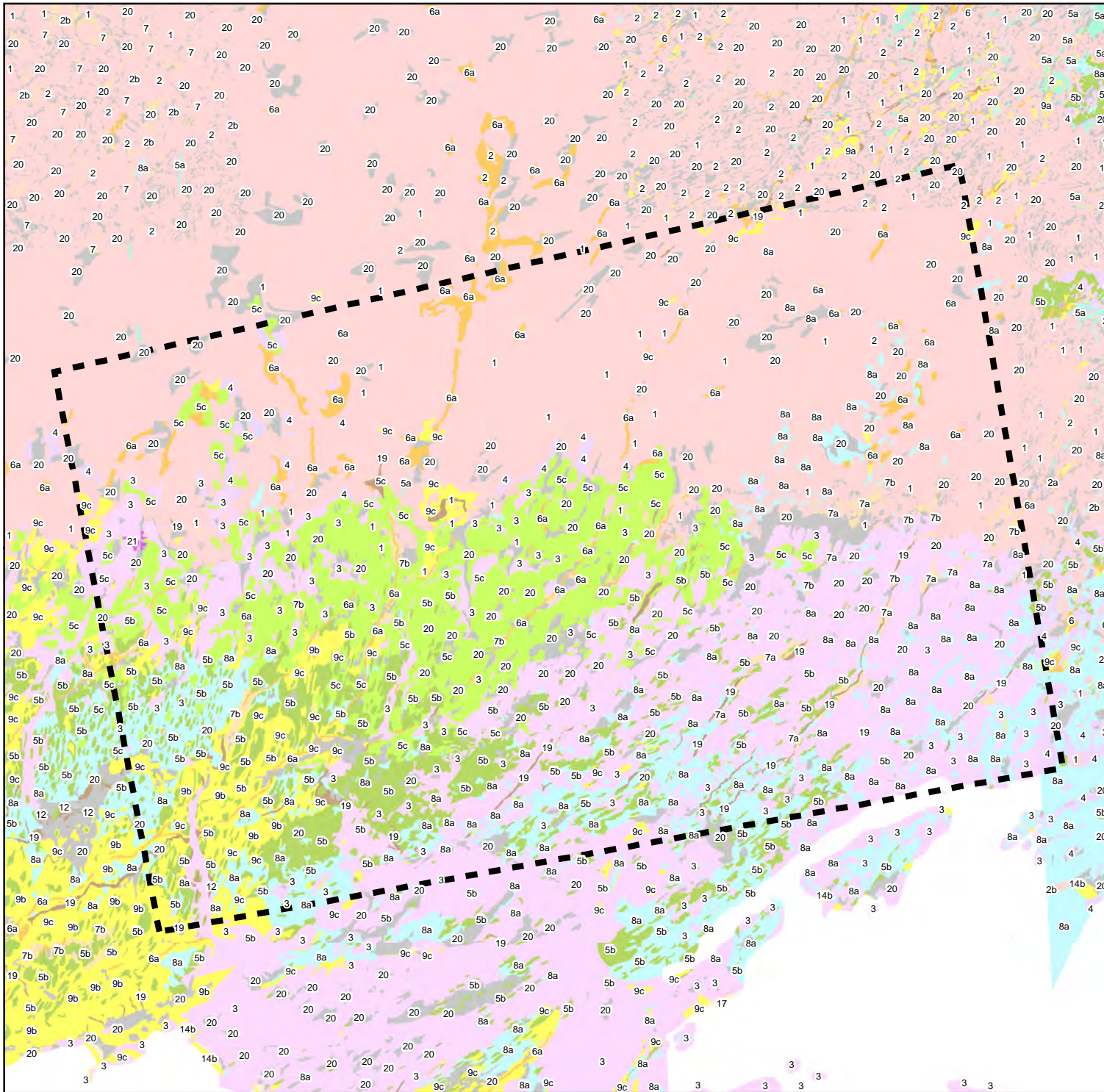
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**TITLE**  
 Quinte Aquatic Thermal Regions

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<b>DRAWN</b> KH	<b>CHECKED</b> HH/FAR	<b>FIG NO.</b> 9-6	<b>REV</b> 0





**LEGEND**

Preliminary Water Quantity Study Area (WOSA)  
**Surficial Geology (MNDM File - MRD128-REV)**

- 1: Precambrian bedrock
- 2: Bedrock-drift complex in Precambrian terrain
- 2a: Primarily till cover
- 2b: Primarily stratified drift cover
- 3: Paleozoic bedrock
- 4: Bedrock-drift complex in Paleozoic terrain
- 5a: Silty sand to sand-textured till on Precambrian terrain
- 5b: Stone-poor, carbonate-derived silty to sandy till
- 5c: Stony, sandy silt to silty sand-textured till on Paleozoic terrain
- 6: Ice-contact stratified deposits
- 6a: In moraines, eskers, kames and crevasse fills
- 7: Glacioluvial deposits
- 7a: Sandy deposits
- 7b: Gravelly deposits
- 8a: Massive-well laminated
- 9a: Deltaic deposits
- 9b: Littoral-Hoheshore deposits
- 9c: Foreshore and basinal deposits
- 12: Older alluvial deposits
- 14b: Littoral-foreshore deposits
- 17: Eolian deposits: fine to very fine sand and silt
- 19: Modern alluvial deposits
- 20: Organic deposits
- 21: Man-made deposits

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1				

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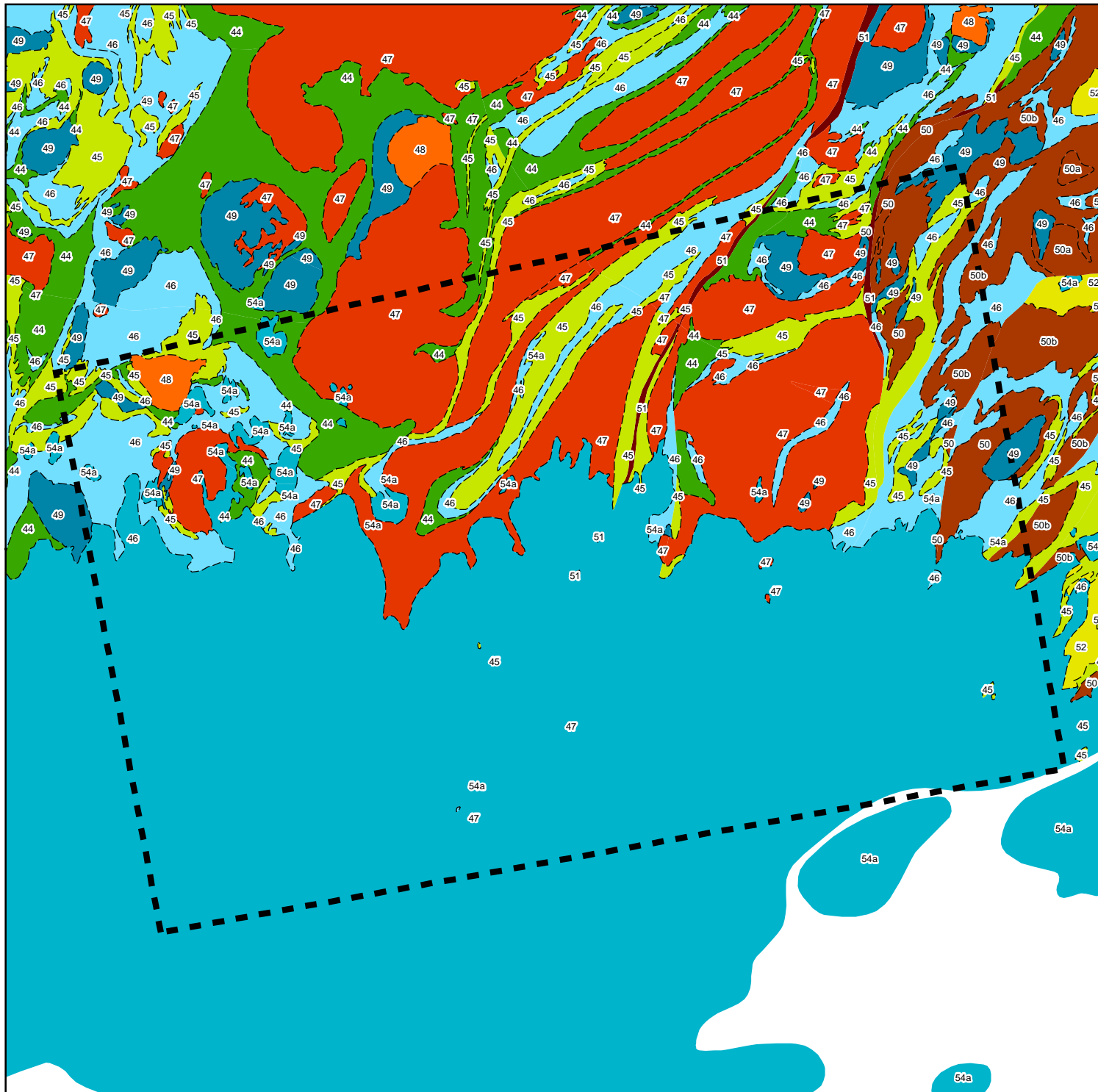
Assessment of Water Resources to Support a Review of Ontario's Water Quantity Management Framework

**TITLE**

Quinte Surficial Geology

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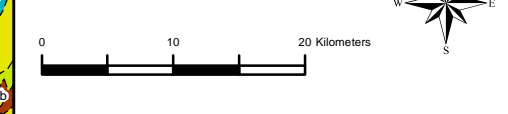
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- LEGEND**
- ▬ Preliminary Water Quantity Study Area (WQSA)
  - Contact, Sharp, Trend, Interpreted
  - Neo- to Mesoproterozoic - mafic to felsic metac volcanic rocks**
  - 44 - Flows, tuffs, breccias, minor iron formation, minor metasedimentary rocks, includes reworked pyroclastic units, amphibolite
  - Neo- to Mesoproterozoic - Clastic metasedimentary rocks**
  - 45 - conglomerate, wacke, quartz arenite, arkose, limestone, siltstone, chert, minor iron formation, minor metavolcanic rocks
  - Neo- to Mesoproterozoic - Carbonate metasedimentary rocks**
  - 46 - marble, calc-silicate rocks, skarn, tectonic breccias
  - Middle Ordovician - Limestone, dolostone, shale, arkose, sandstone**
  - 54a - Ottawa Group; Simcoe Group; Shadow Lake Formation (now considered Upper Ordovician)
  - Neo- to Mesoproterozoic - Early felsic plutonic rocks**
  - 47 - Granodiorite, tonalite, monzogranite, syenogranite; derived gneisses and migmatites
  - Neo- to Mesoproterozoic - Alkalic plutonic rocks**
  - 48 - Nepheline syenite, alkalic syenite, fenite; associated mafic, ultramafic and carbonatic rocks
  - Neo- to Mesoproterozoic - Mafic to ultramafic plutonic rocks**
  - 49 - diorite, gabbro, peridotite, pyroxenite, anorthosite, derived metamorphic rocks
  - Neo- to Mesoproterozoic - Late felsic plutonic rocks**
  - 50 - granodiorite, granite, syenite, pegmatite, alkalic granite, migmatitic gneisses
  - 50a - granitic and syenitic gneisses
  - 50b - granitic gneisses with metasedimentary xenoliths, migmatites, injection gneisses, pegmatites
  - Neo- to Mesoproterozoic - Tectonite unit**
  - 51 - tectonites, straight gneisses, porphyroclastic gneisses, unsubdivided gneisses in major deformation zones, mylonites, protomylonites
  - Cambrian - Conglomerate, sandstone, shale, dolostone**
  - 52 - Potsdam Group; Nepean Formation; Covey Hill Formation

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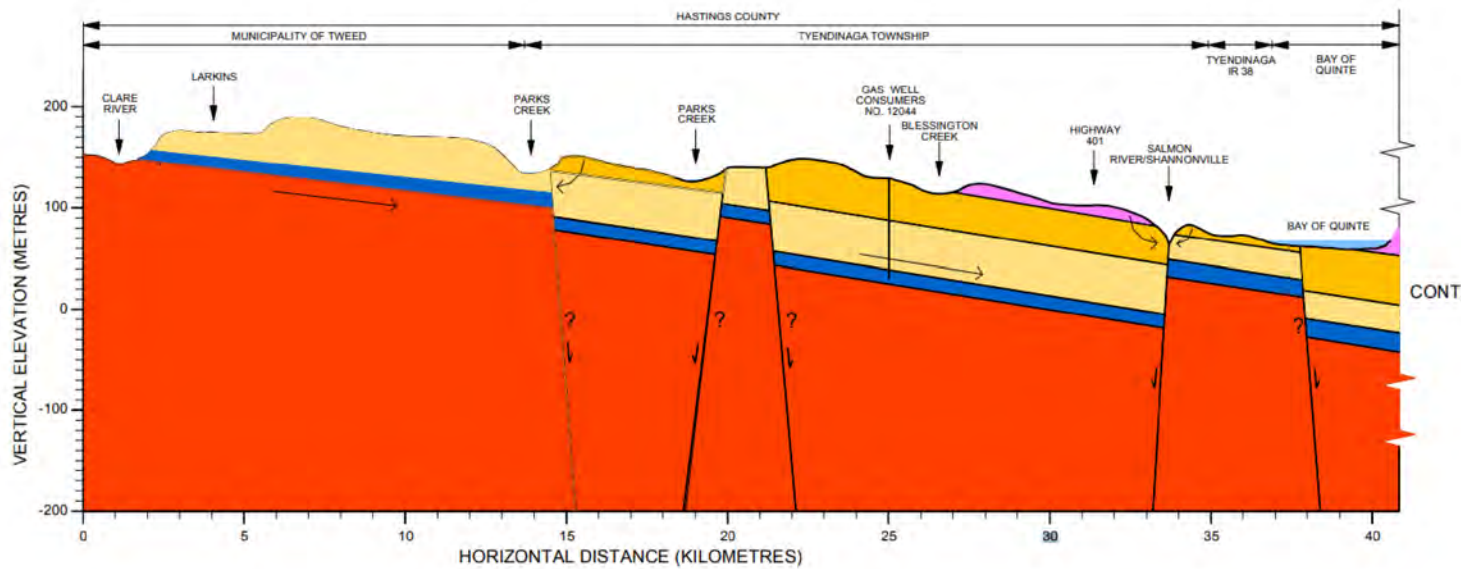
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**PROJECT**  
 Assessment of Water Resources to Support a Review of Ontario's Water Quantity Management Framework

**TITLE**  
 Quinte Bedrock Geology

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<b>DRAWN</b> KH	<b>CHECKED</b> HH/FAR	<b>FIG NO.</b> 9-8	<b>REV</b> 0



**LEGEND**

- VERULAM (limestone and shale)
- BOBCAYGEON (limestone)
- GULL RIVER (limestone)
- SHADOW LAKE (dolostone and sandstone)
- PRECAMBRIAN Shield (igneous & metamorphic rocks)

**NOTES**  
 Hydrogeological cross-section sourced from Approved Quinte Region Assessment Report Chapter 2, Quinte Sourcewater, July 2014.

1				
REV	DESCRIPTION	YY/MM/DD	BY	CHK

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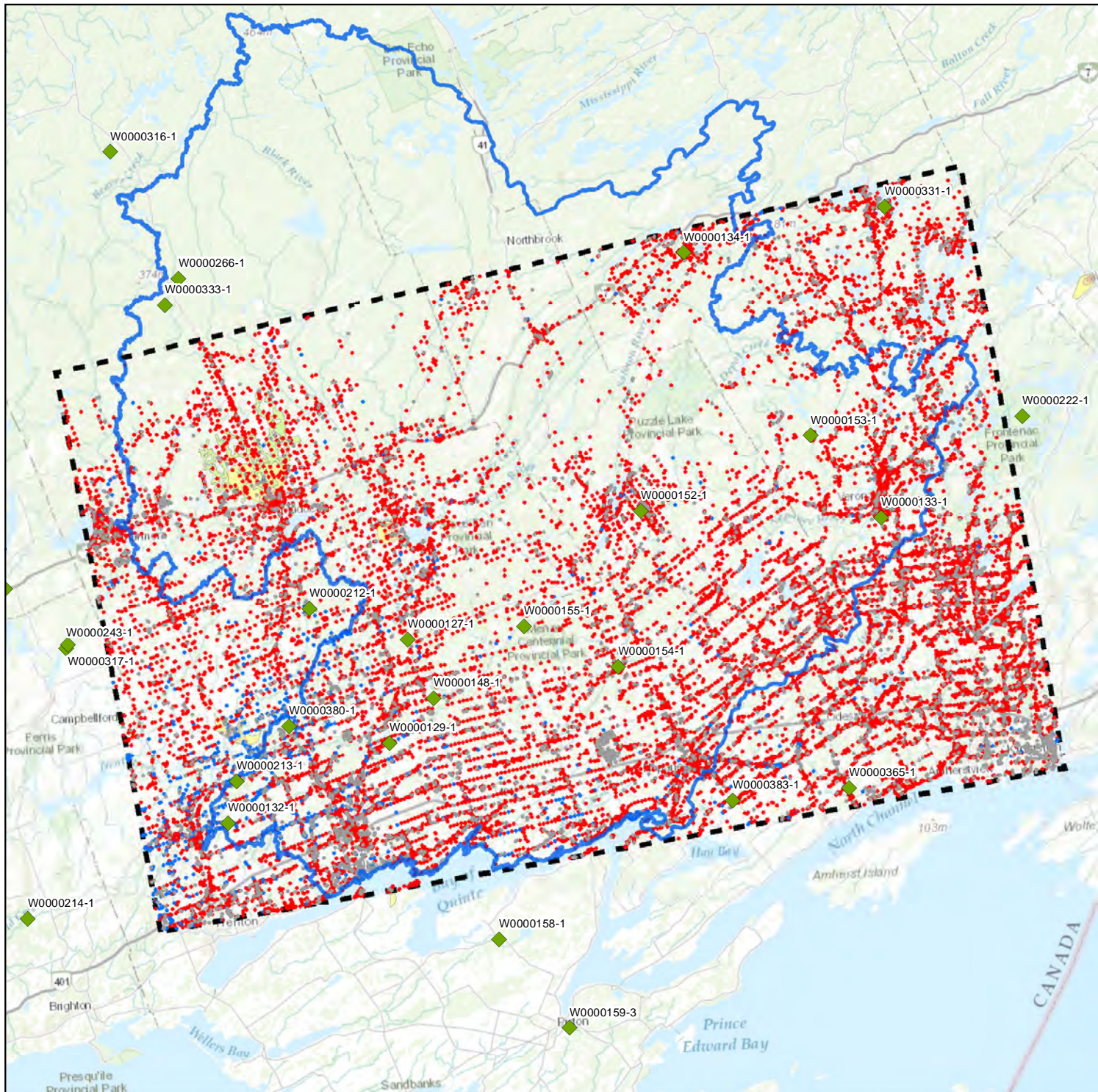
**CLIENT**  
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**PROJECT**  
 Assessment of Water Resources to Support a Review of Ontario's Water Quantity Management Framework

**TITLE**  
 Quinte Hydrogeological Cross-Section

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**LEGEND**

- ◆ Provincial Groundwater Monitoring Network Wells
- Quinte Watershed Boundary
- Bedrock Well
- Overburden Well
- Unknown Well Type
- Preliminary Water Quantity Study Area (WQSA)

**Wellhead Protection Areas**

- A
- B
- C
- C1
- D
- F

1				
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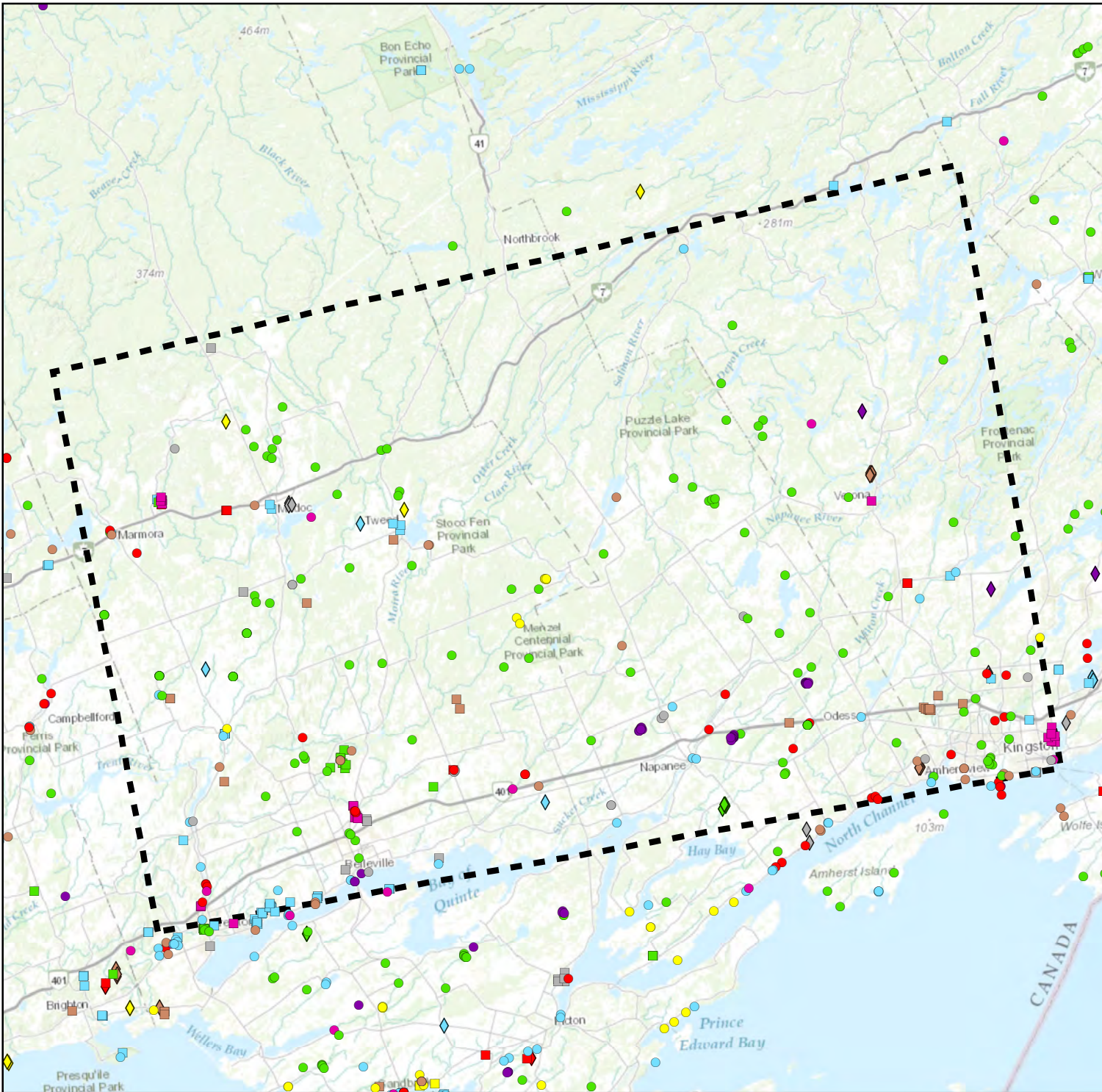
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**TITLE**  
 Quinte Water Well Information System and Provincial Groundwater Monitoring Network Wells

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**LEGEND**

- Preliminary Water Quantity Study Area (WQSA)
- Water Taking Permit by Type and Purpose**
  - Agricultural
  - Commercial
  - Dewatering
  - Industrial
  - Institutional
  - Miscellaneous
  - Recreational
  - Remediation
  - Water Supply
- Surface Water
- Groundwater
- Both

1					
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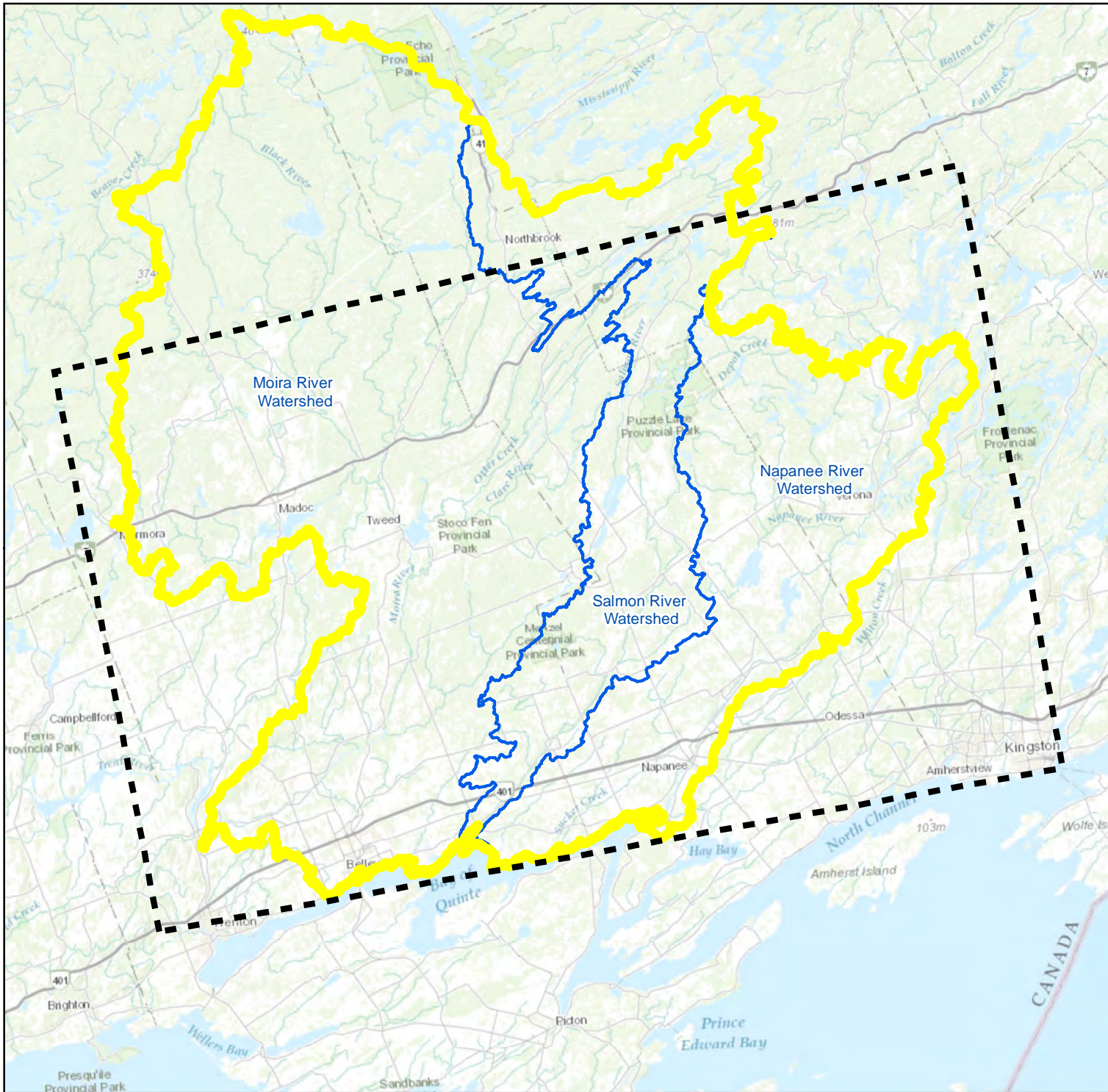
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 Assessment of Water Resources to Support a Review of Ontario's Water Quantity Management Framework

**TITLE**  
 Quinte Permitted Water Takings

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**LEGEND**

- Preliminary Water Quantity Study Area (WQSA)
- Revised Quinte WQSA
- Watershed Boundary

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**TITLE**  
 Quinte Revised Water Quantity Study Area Boundary

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