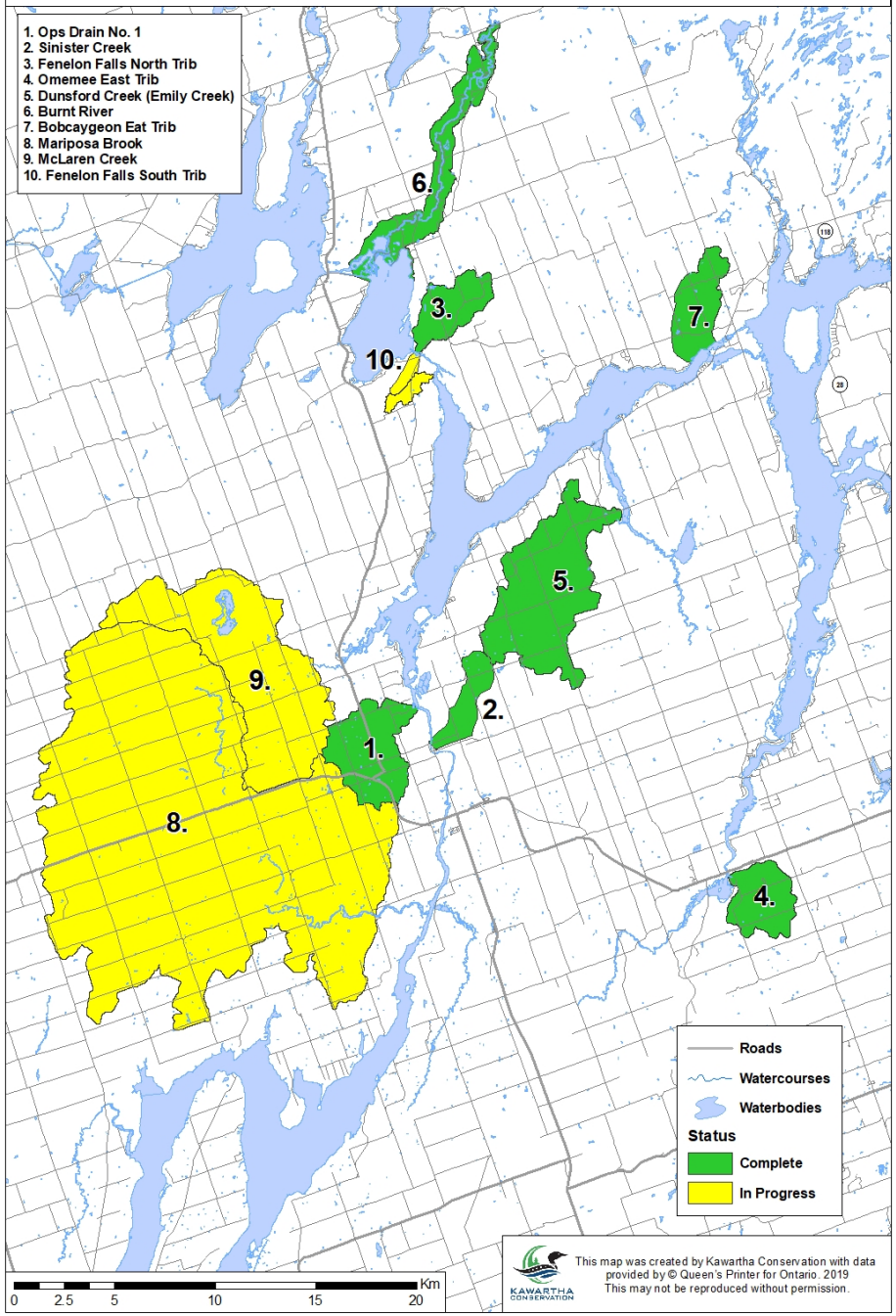
KAWARTHA CONSERVATION

Discover · Protect · Restore

Flood Plain Mapping Project Areas



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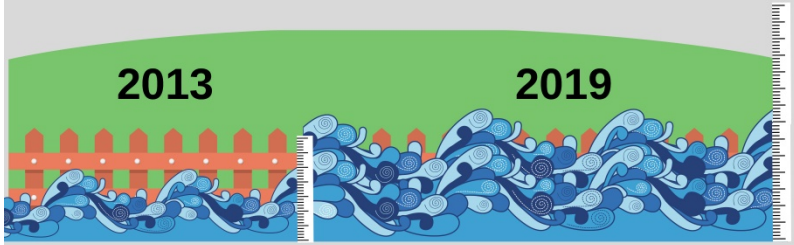
Higher | Longer | and more

Burnt River **Flood**2019

This 2019 flooding was **higher, longer and contained more water** than any other flood in this municipality's history.

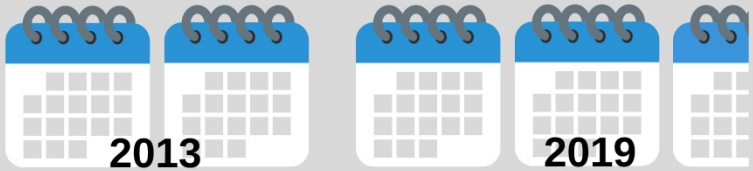
Higher



The water levels for 2019 were **20 centimetres higher** than the historic flood of 2013.

Longer

The 2019 flood was **3 weeks longer** than average.



and more

There were **5,000 liters per second of water more** than in 2013 and **80,000 liters per second more than in 2018**.

The floodplain mapping project completed be Kawartha Conservation has shown that potential discharge and flow rate for the Burnt River could be double of this year's historic high event.

Data supplied by Kawartha Conservation.

For more information, contact kawarthaconservation.com

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KAWARTHA LAKES

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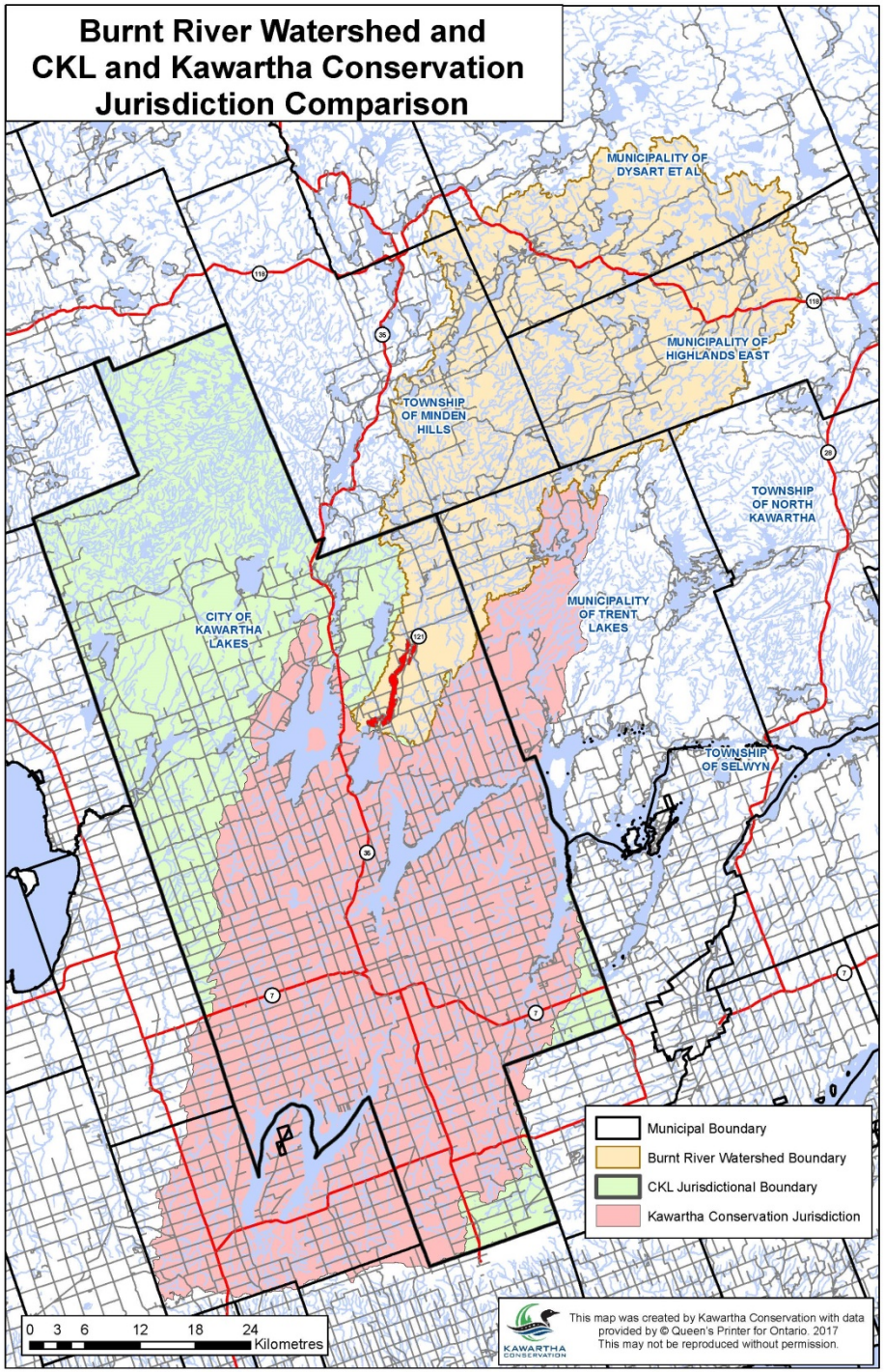
Burnt River 2013, 2016, & 2019 Flood Event

Burnt River 2013, 2016, & 2019 Flood Event



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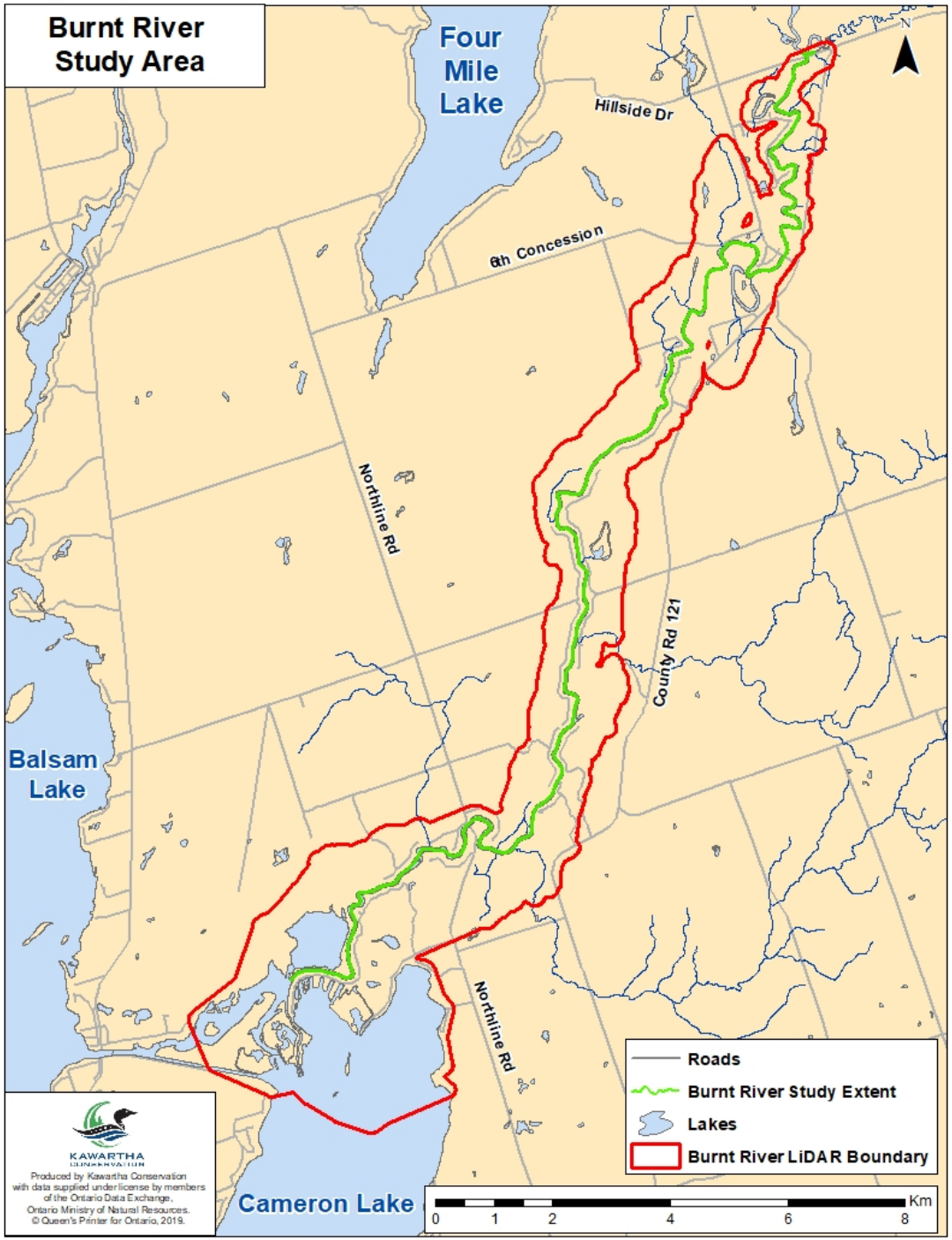

KAWARTHA CONSERVATION

Federal Funding

- Burnt River Flood Mapping Study was the first project summited for federal funding under the National Disaster Mitigation Program provided my the federal government
- We were successful in our application and received $66,500 which was matched by the City of Kawartha Lakes
- We have since been successful in receiving NDMP funding for three of our other projects which include: Mariposa Brook, Fenelon Falls South and McLarens Creek

KAWARTHA CONSERVATION

Flood Plain Mapping Study Details

- The regulatory flood line is the greater of the Regional Storm or 1:100 yr event
- Technical Committee created Quality Assurance (QA) and Quality Control (QC) standards for all Kawartha Conservation floodplain studies
- Ganaraska Region Conservation Authority (GRCA) responsible for QA/QC to ensure data meets provincial standards
- **All steps have been peer-reviewed**
  - Digital maps and air photos
  - Survey collection and integration with mapping
  - Hydrology computer model
  - Hydraulic computer model
  - Technical Report and Appendices

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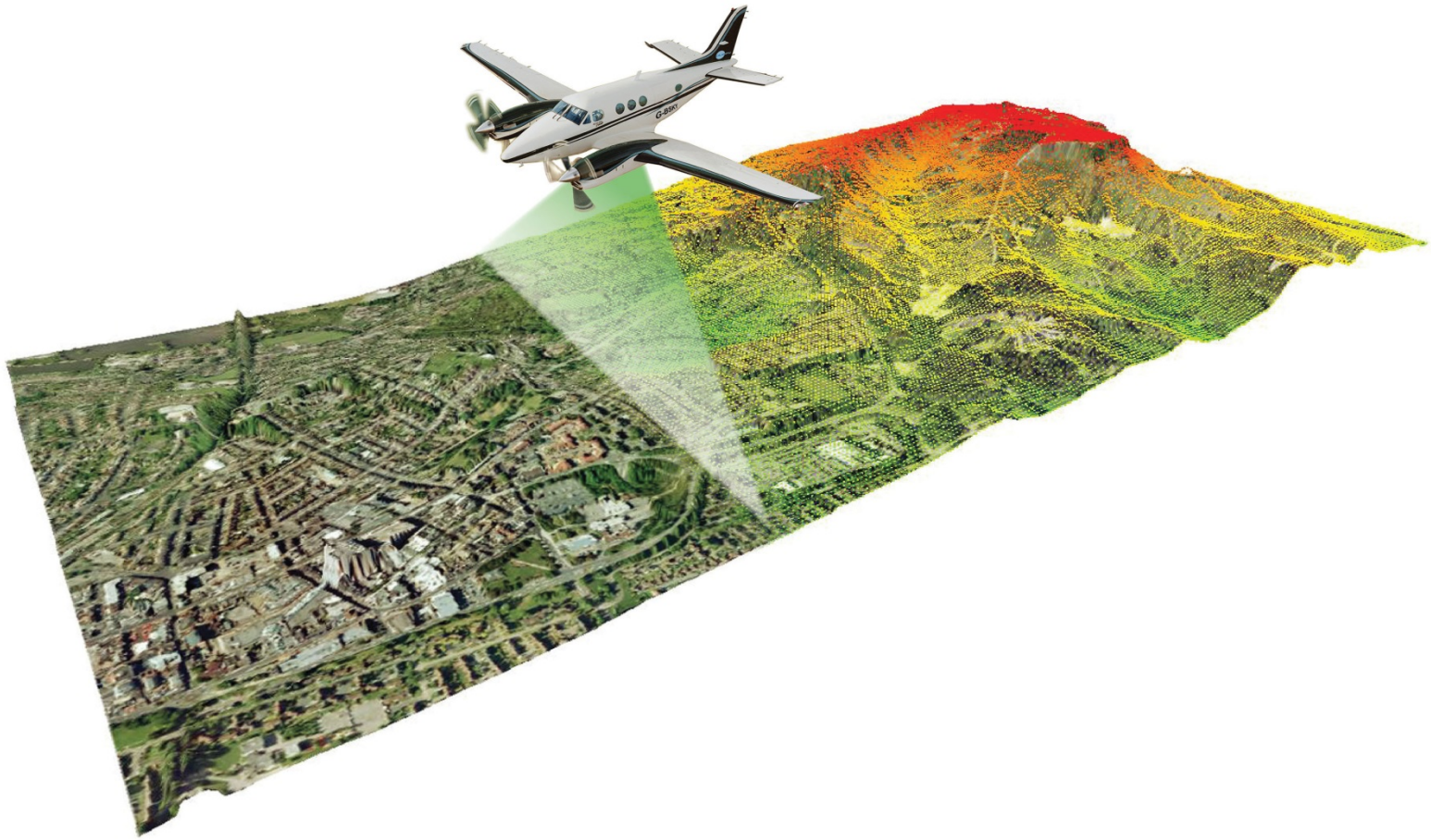
LiDAR (Light Detection & Ranging) Technologies



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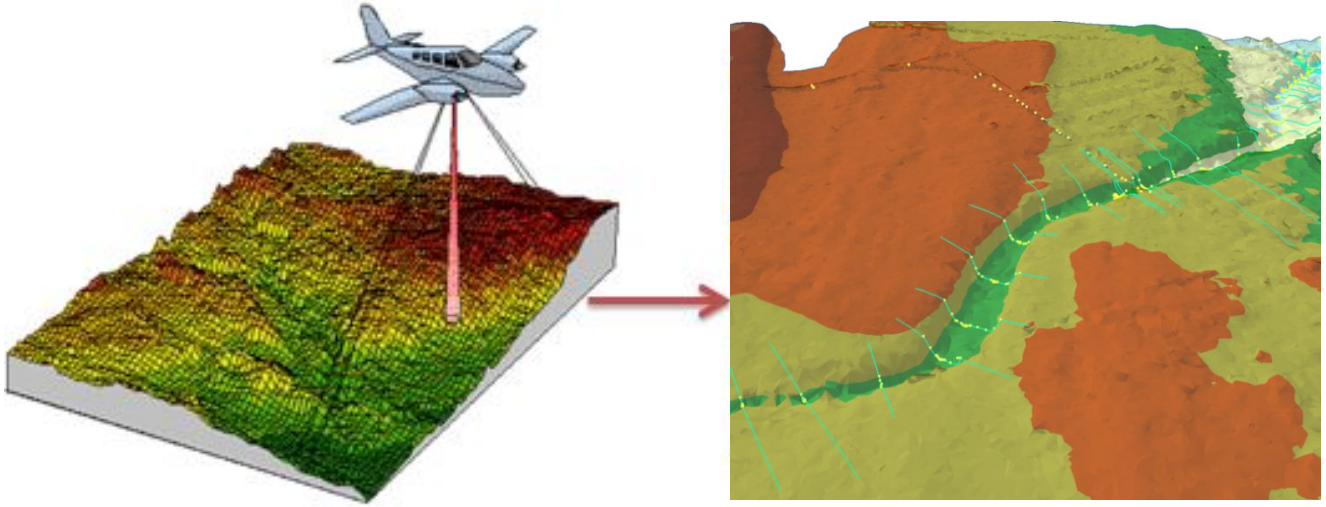
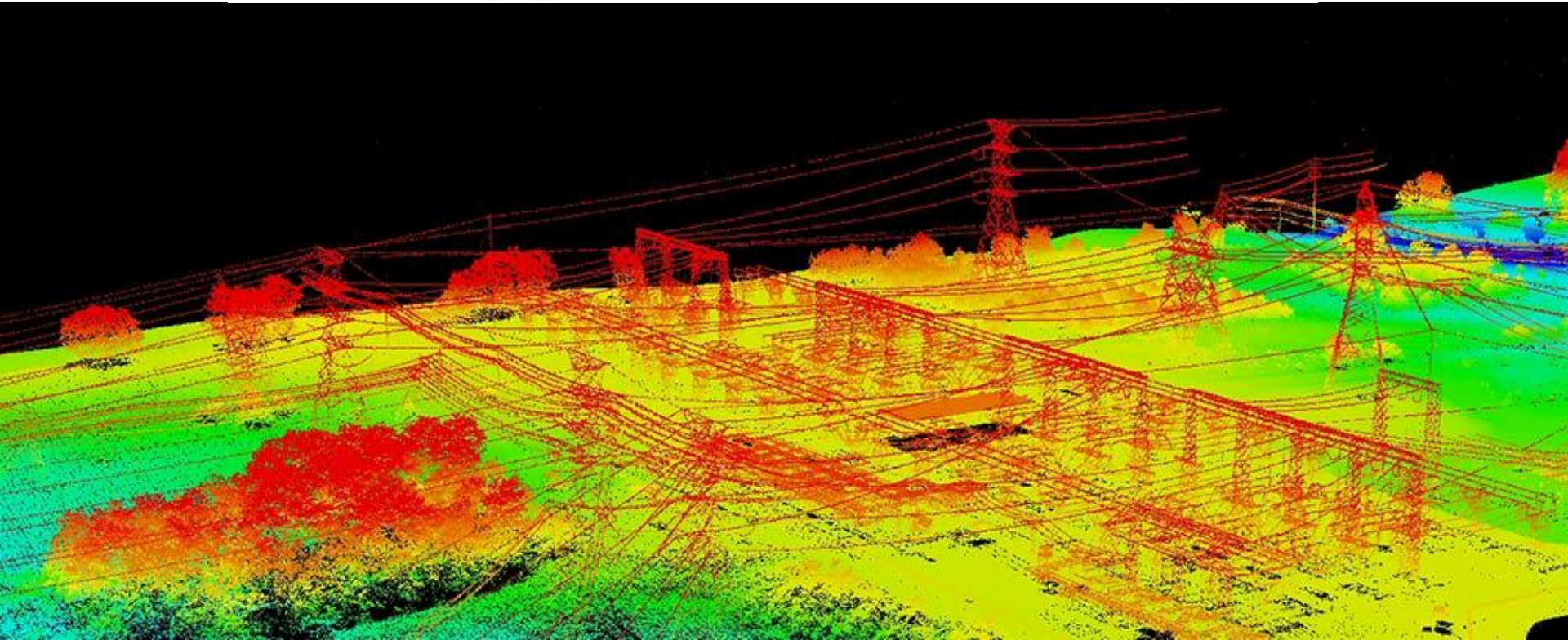
Example of LiDAR Mapping Output Data



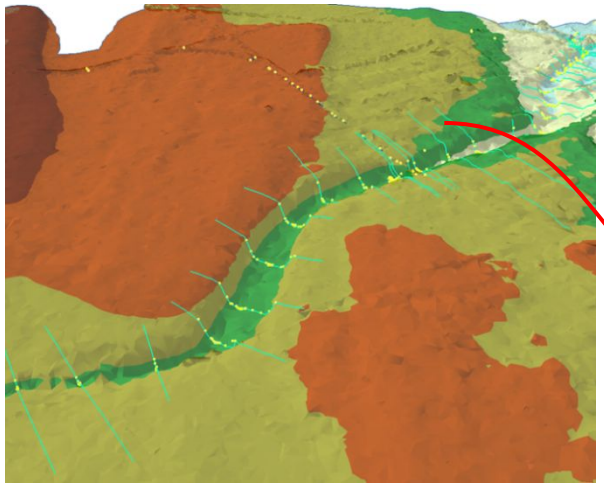


In Field Survey Work and LiDAR Ground Truthing

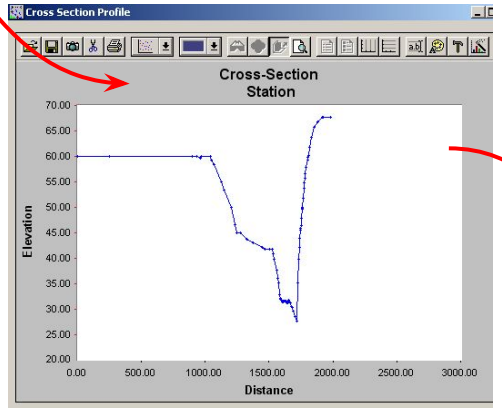

Seafloor


Whaler
CF 4419 HV

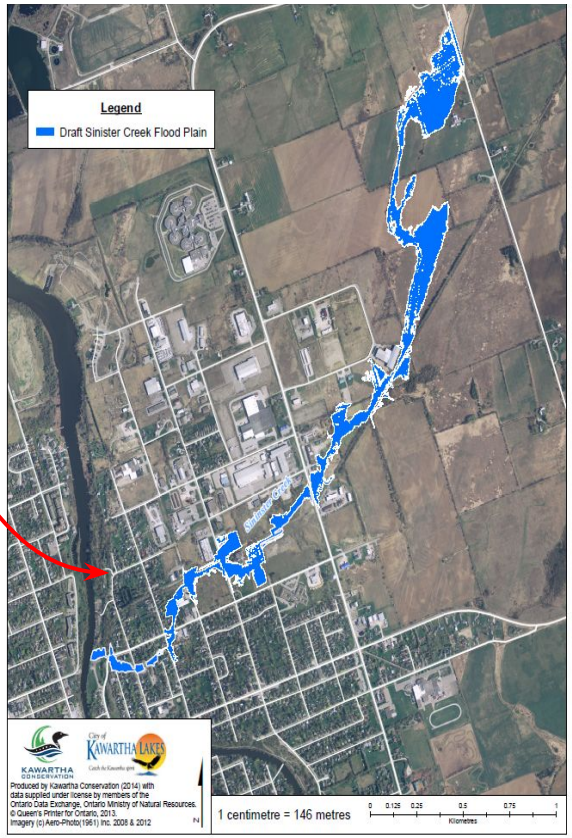
Hydraulic Computer Modelling



Output surface from LiDAR



Computer Model Cross-Section



Model Output – Flood Plain Mapping

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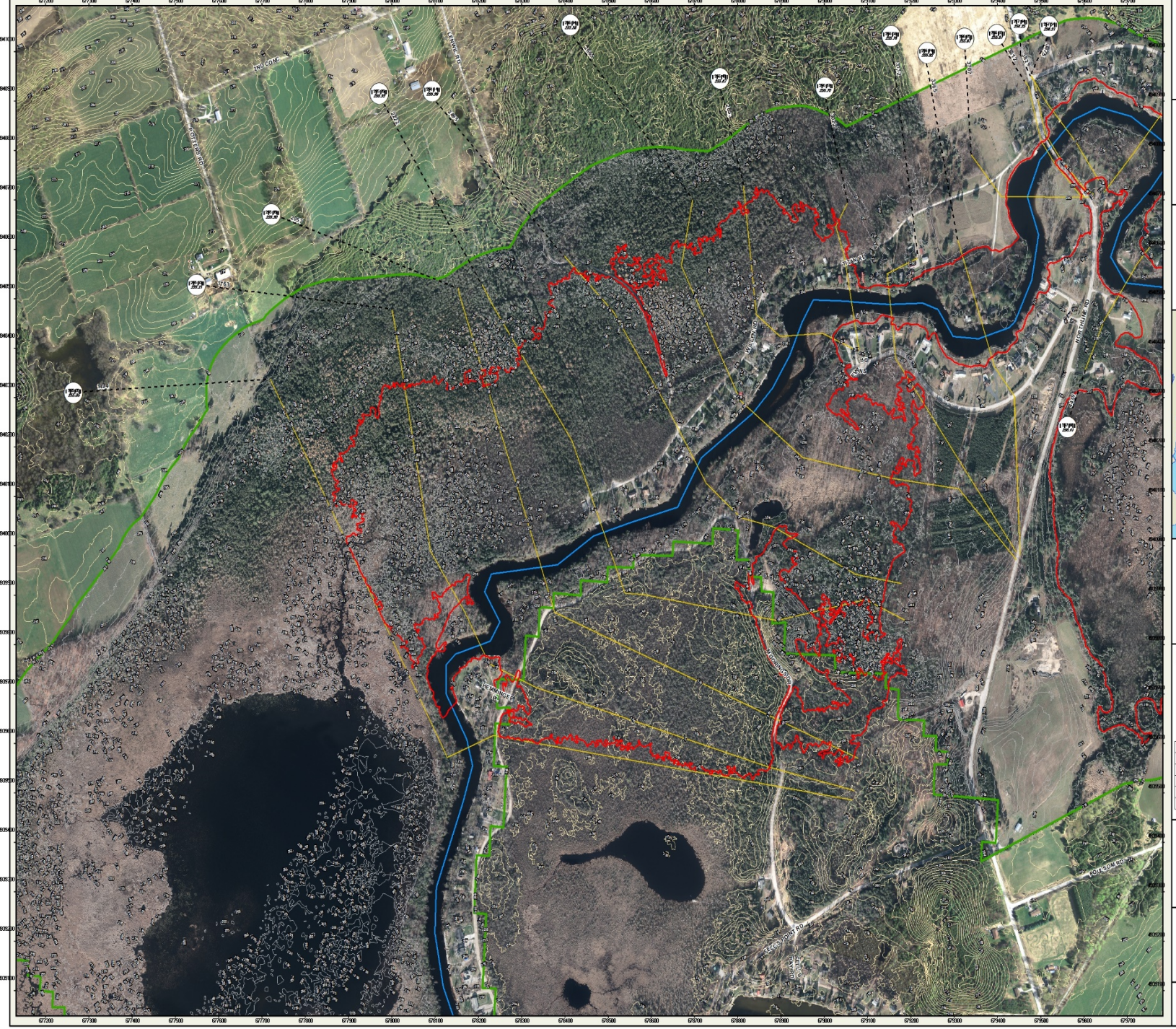


KAWARTHA CONSERVATION

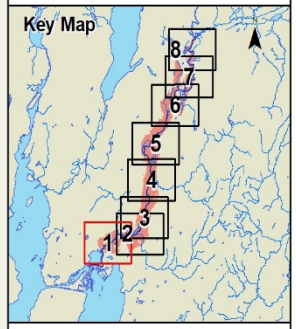
KAWARTHA LAKES

Burnt River
Flood Plain Map
City of Kawartha Lakes
Printed: May 2019

Legend

- Burnt River
- Cross Section
- 1.0 m LiDAR Contours
- 1.0 m SCOOP Contours
- Draft Flood Plain
- LiDAR Boundary

Key Map



Notes:

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2) Contours produced by Kawartha Conservation GIS staff using LiDAR and GTA83 2002 data.
3) Field Survey of structures by Kawartha Conservation, using RTK GPS.
4) Orthophotography (15cm) collected November 6th, 2012.
Aero-Photo Inc. SCOOP 2013 orthophotography was used to supplement 2012 orthophotography.
SCOOP 2013 Copyright Queen's Printer 2013.
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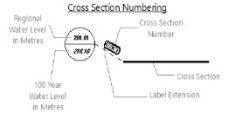
6) Flood plain modelling was prepared by Kawartha Conservation's engineering department.
Input parameters were extracted from base mapping prepared by Kawartha Conservation's GIS department.
7) This map is prepared for use in conjuction with the Flood Plain Mapping Study Dunsford Creek, 2010.

REVISIONS

No.	Description	By	Date
1	Burnt River Flood Plain Map	NP	MAY 2019

Cross Section Numbering



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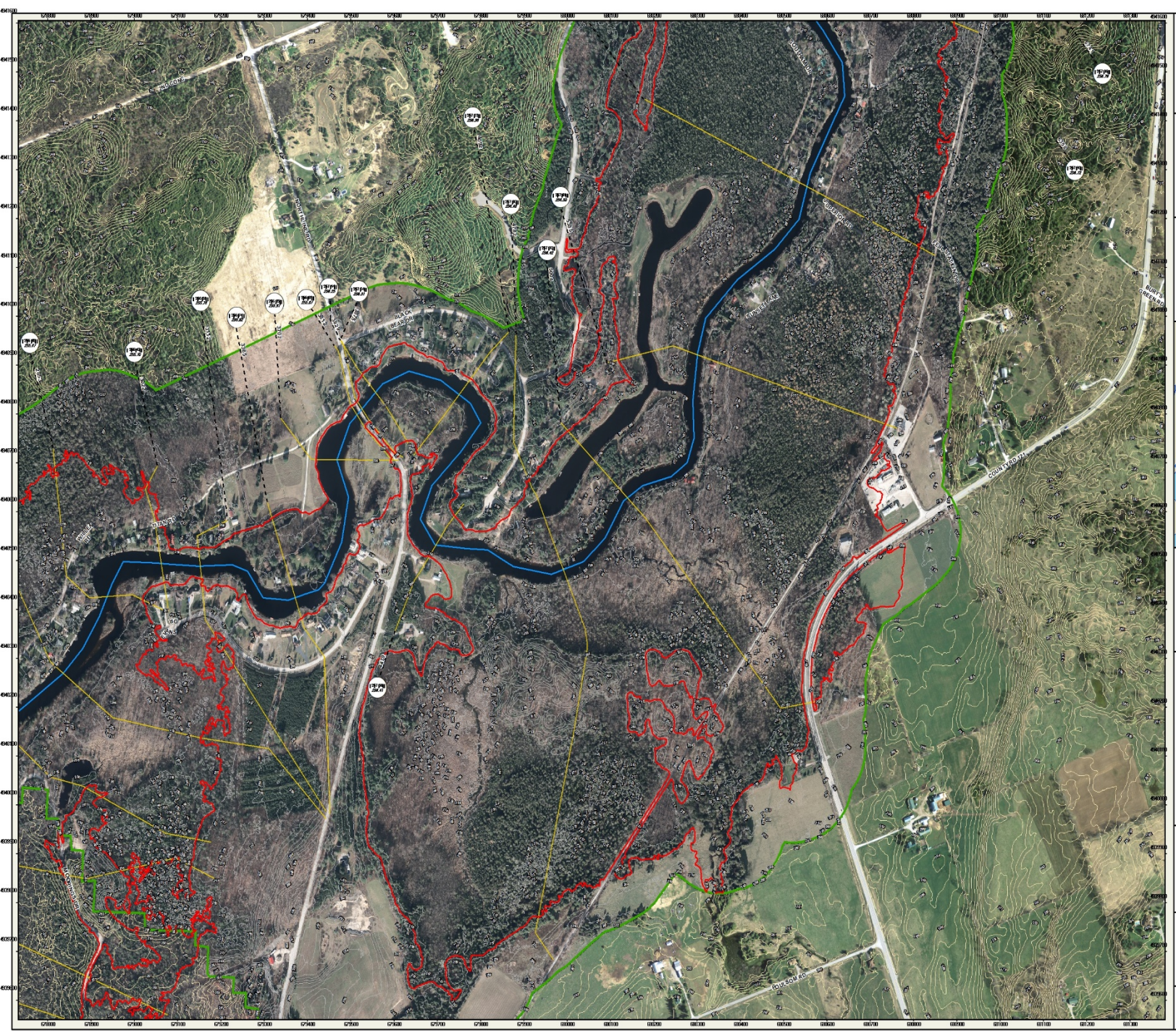
MAP 1



KAWARTHA CONSERVATION

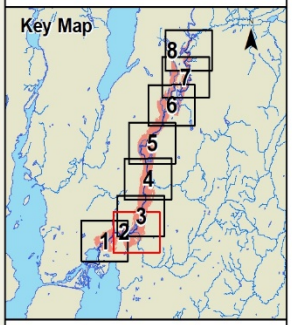
KAWARTHA LAKES

Burnt River
Flood Plain Map
City of Kawartha Lakes
Printed: May 2019

Legend

- Burnt River
- Cross Section
- 1.0 m LiDAR Contours
- 1.0 m SCOOP Contours
- Draft Flood Plain
- LiDAR Boundary

Key Map



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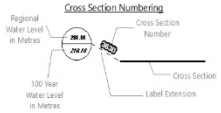

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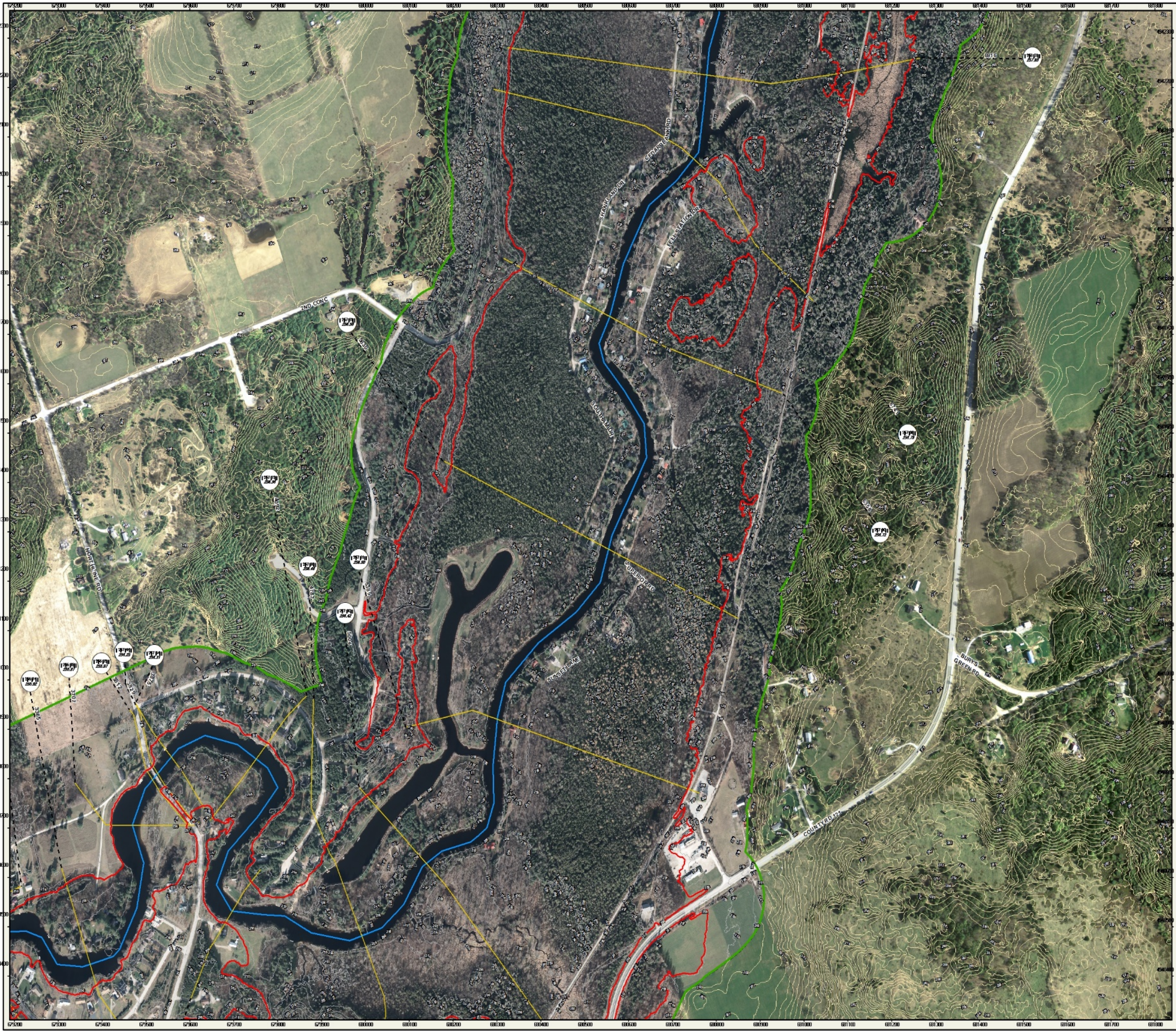
MAP 2



Burnt River Flood Plain Map

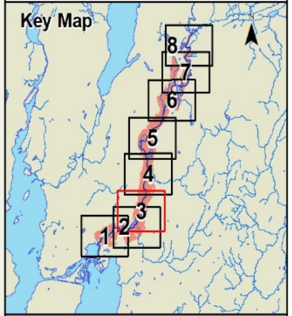
City of Kawartha Lakes

Printed: May 2019

Legend

- Burnt River
- Cross Section
- 1.0 m LiDAR Contours
- 1.0 m SCOOP Contours
- Draft Flood Plain
- LiDAR Boundary

Key Map



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REVISIONS			
No.	Description	By	Date
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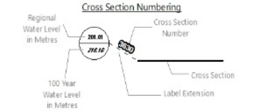
Cross Section Numbering



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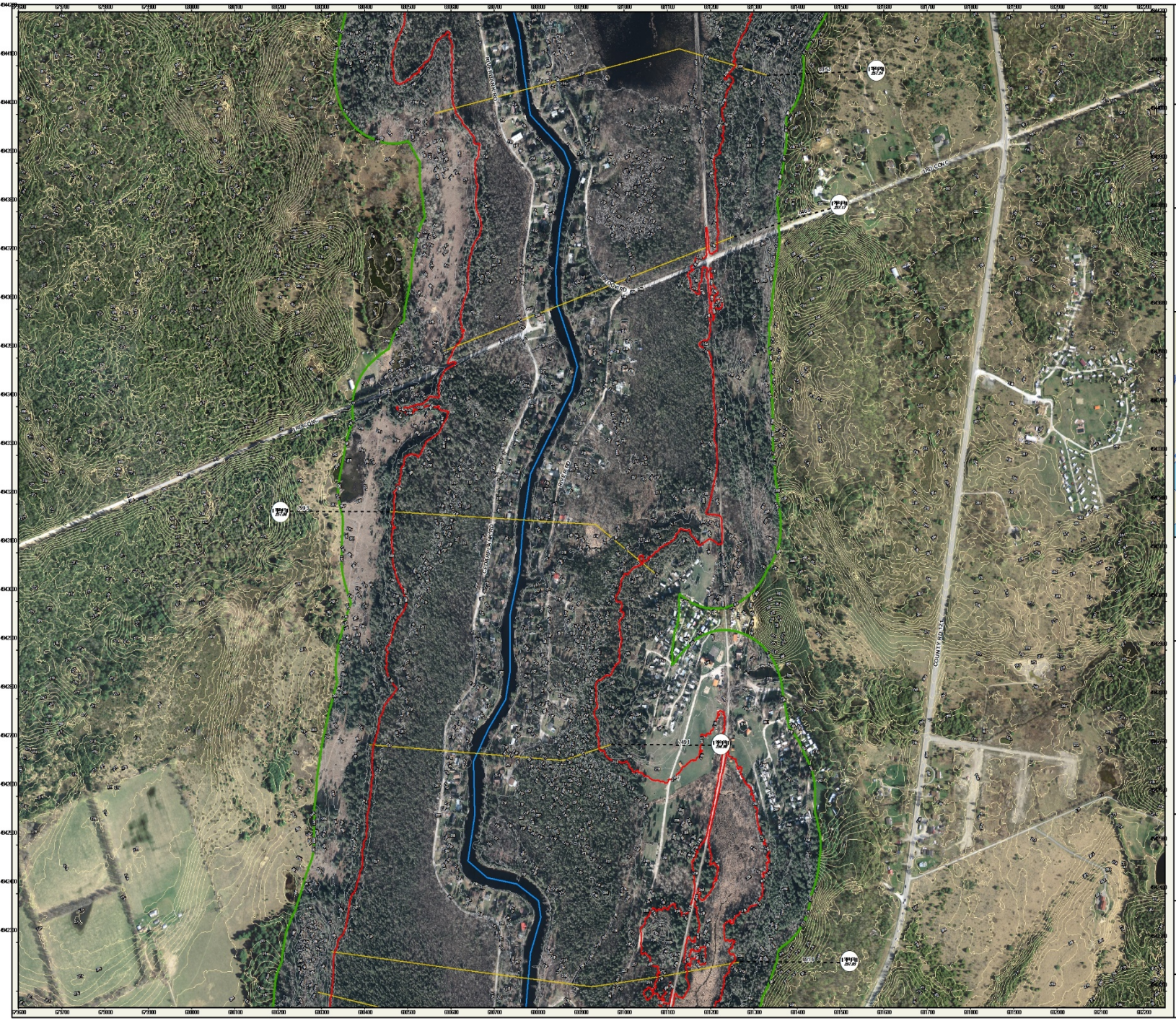
MAP 3



KAWARTHA CONSERVATION

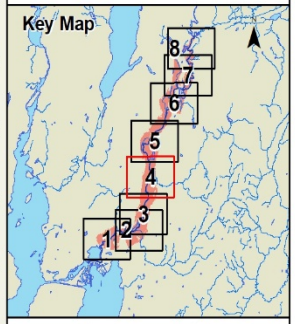
KAWARTHA LAKES

Burnt River
Flood Plain Map
City of Kawartha Lakes
Printed: May 2019

Legend

- Burnt River
- Cross Section
- 1.0 m LiDAR Contours
- 1.0 m SCOOP Contours
- Draft Flood Plain
- LiDAR Boundary

Key Map



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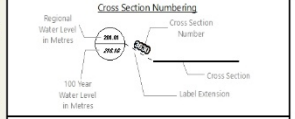

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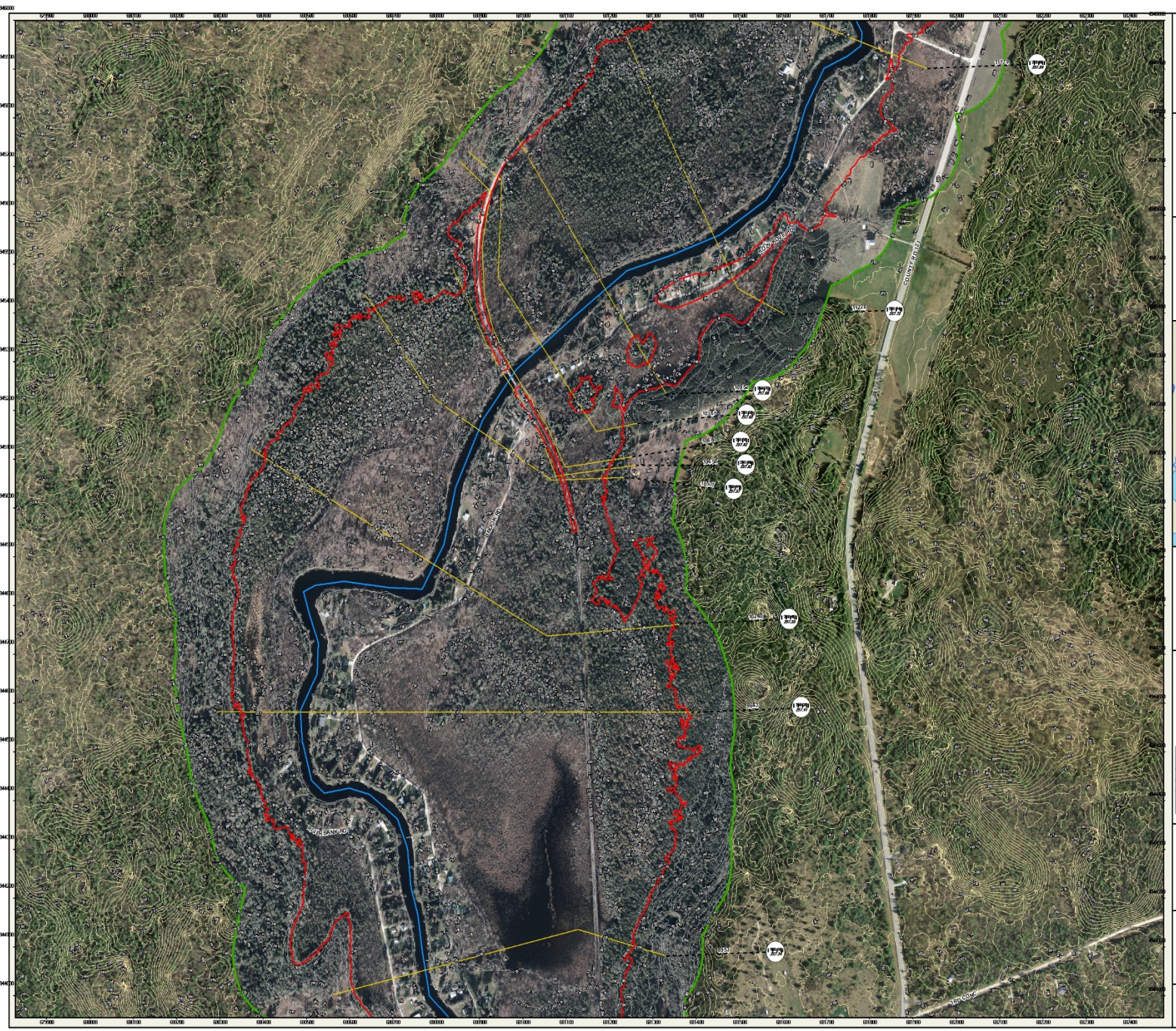


KAWARTHA CONSERVATION

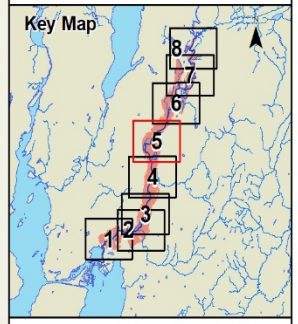
KAWARTHA LAKES

Burnt River
Flood Plain Map
City of Kawartha Lakes
Printed: May 2019

Legend

- Burnt River
- Cross Section
- 1.0 m LiDAR Contours
- 1.0 m SCOOP Contours
- Draft Flood Plain
- LiDAR Boundary

Key Map



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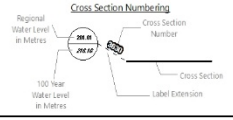
REVISIONS

No.	Description	By	Date
1	Burnt River Flood Plain Map	NP	MAY 2019

Cross Section Numbering



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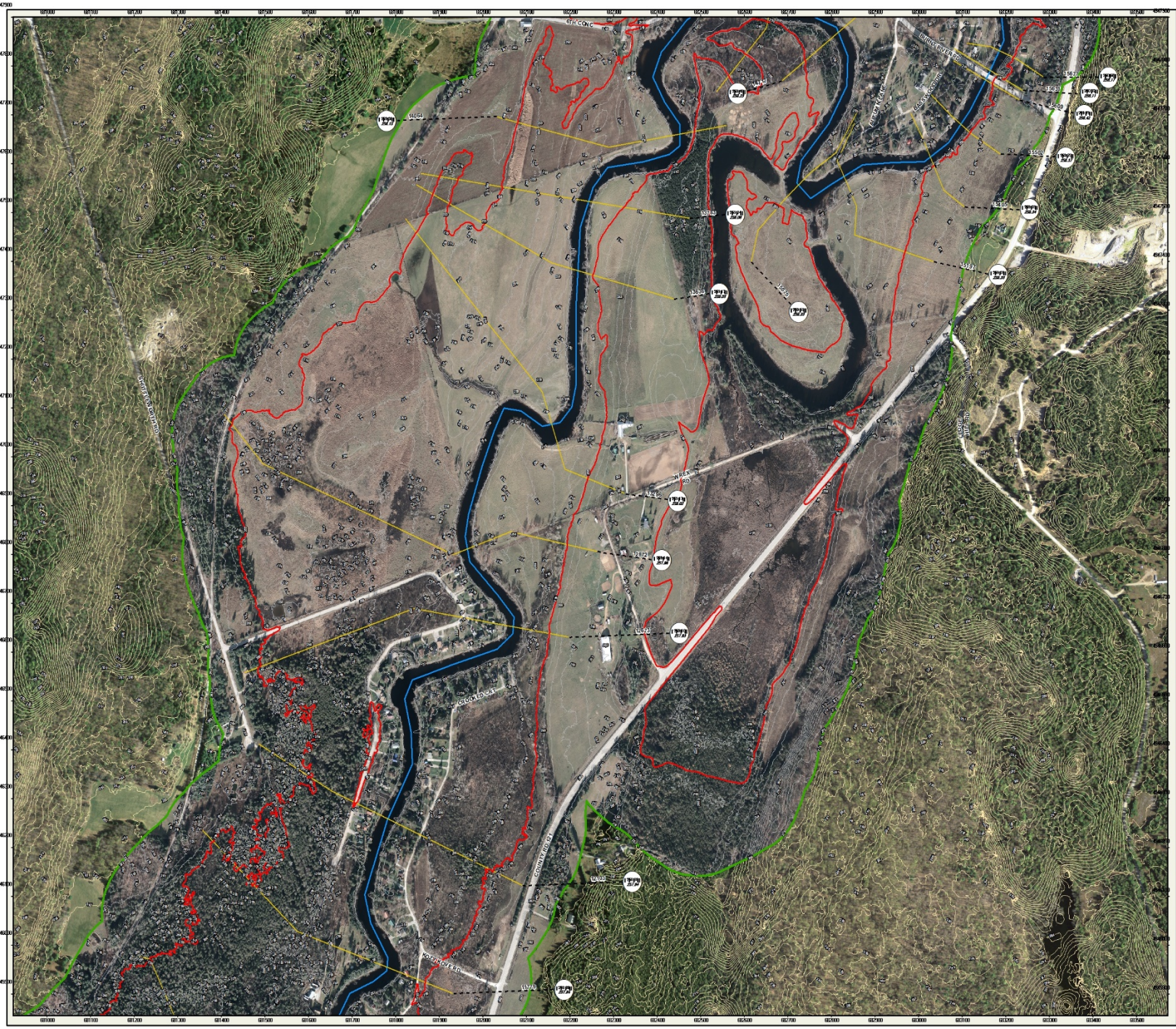
MAP 5



KAWARTHA CONSERVATION

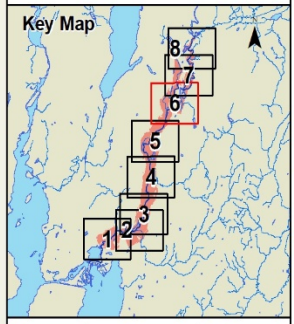
KAWARTHA LAKES

Burnt River
Flood Plain Map
City of Kawartha Lakes
Printed: May 2019

Legend

- Burnt River
- Cross Section
- 1.0 m LiDAR Contours
- 1.0 m SCOOP Contours
- Draft Flood Plain
- LiDAR Boundary

Key Map



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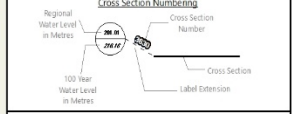

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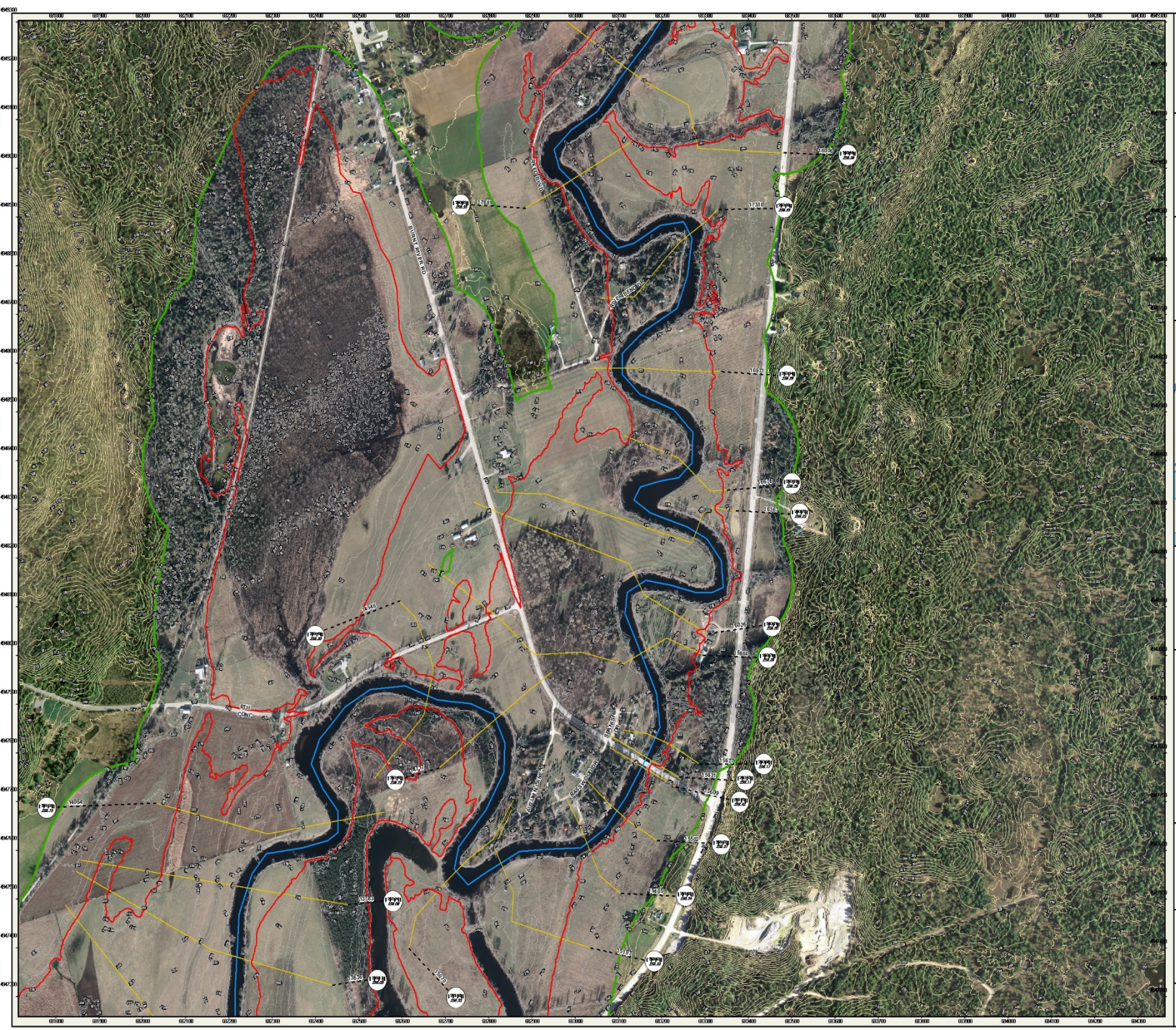
MAP 6



KAWARTHA CONSERVATION

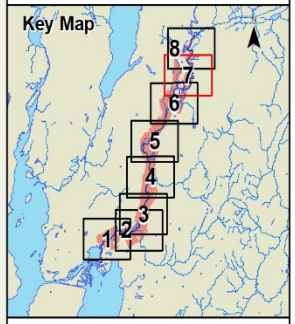
KAWARTHA LAKES

Burnt River
Flood Plain Map
City of Kawartha Lakes
Printed: May 2019

Legend

- Burnt River
- Cross Section
- 1.0 m LiDAR Contours
- 1.0 m SCOOP Contours
- Draft Flood Plain
- LiDAR Boundary

Key Map



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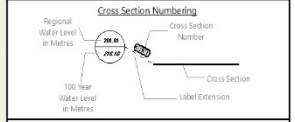
Cross Section Numbering



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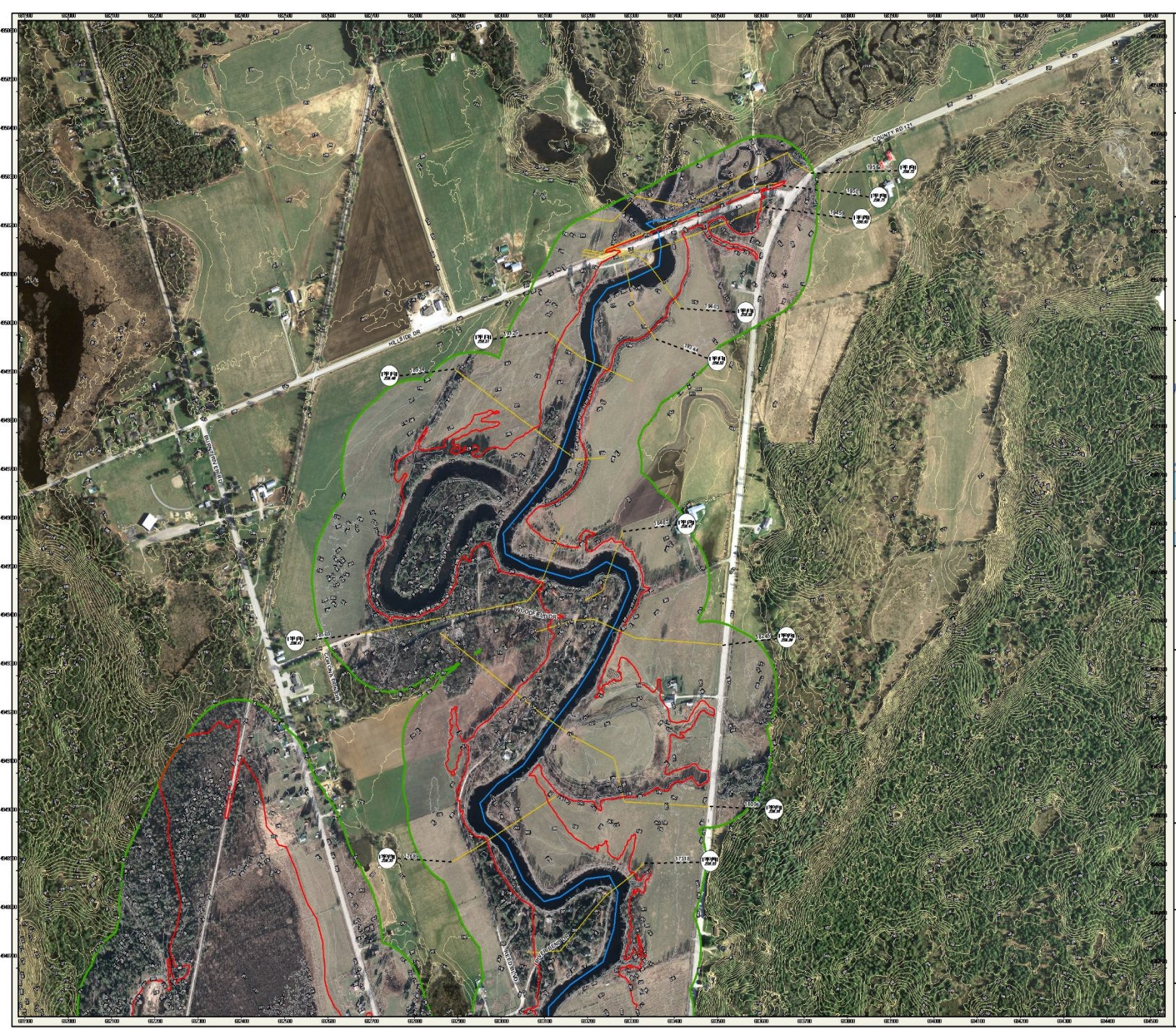
MAP 7



KAWARTHA CONSERVATION

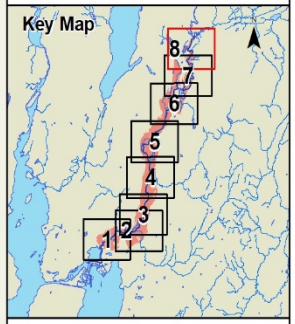
KAWARTHA LAKES

Burnt River
Flood Plain Map
City of Kawartha Lakes
Printed: May 2019

Legend

- Burnt River
- Cross Section
- 1.0 m LiDAR Contours
- 1.0 m SCOOP Contours
- Draft Flood Plain
- LiDAR Boundary

Key Map



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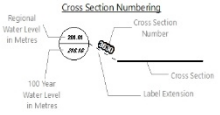
REVISIONS			
No.	Description	By	Date
1	Burnt River Flood Plain Map	NP	MAY 2019

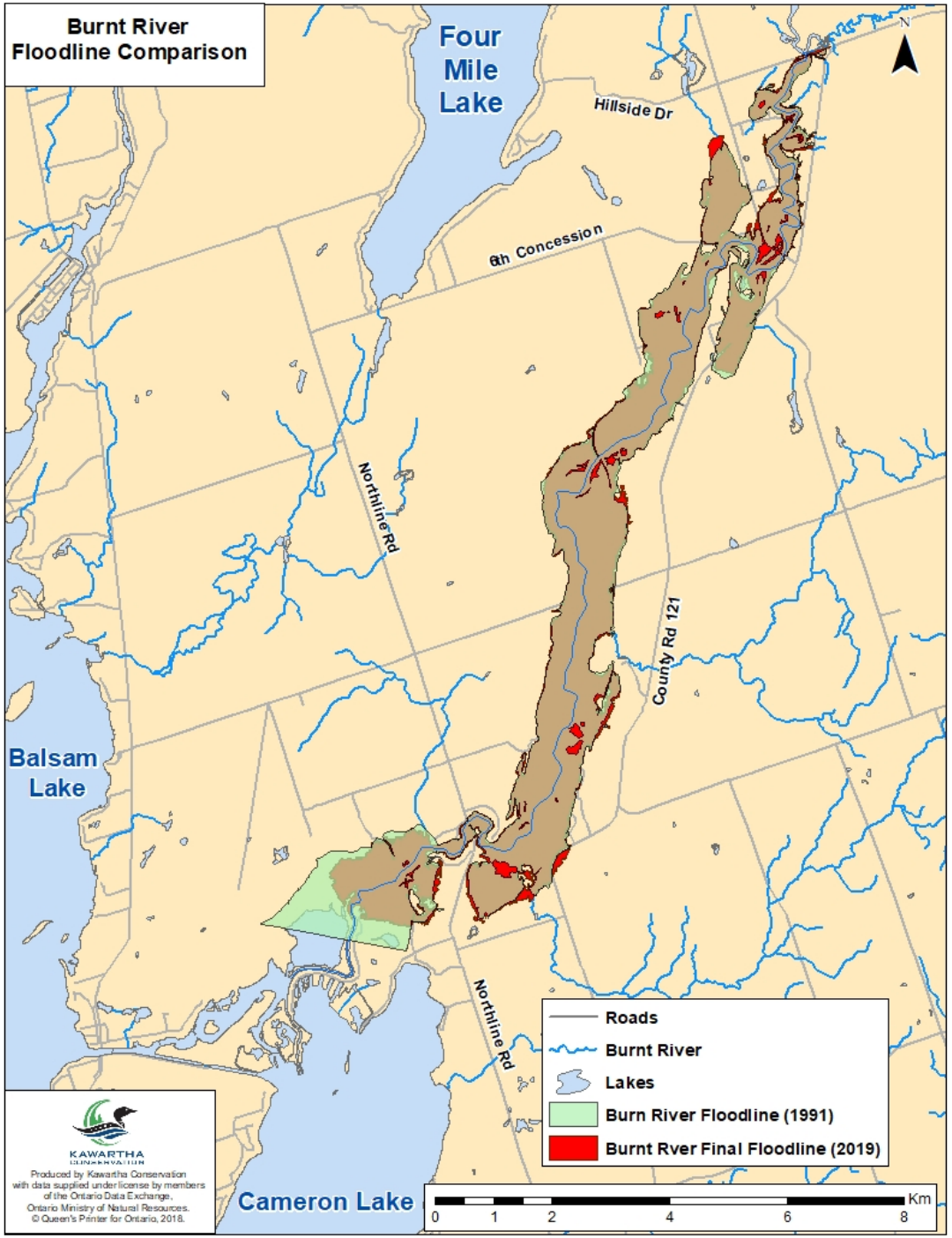
Cross Section Numbering



1:3,500

0 25 50 100 150 200 250 300 350 Meters

MAP 8



KAWARTHA
CONSERVATION

Things We Would Like Prevent to Future Development


Sinister Creek


Burnt River


Shadow Lake


Minden – Gull River

Thank You