

ANNEX II-B

CONNECTION LINE SUMMARY



**Distribution Line Summary for
the Four Slide Falls and McCarthy
Chutes Hydroelectric Projects
(Serpent River)**

A Summary Report for:



Original Report - based on analysis up to March 3, 2011

Updated Report - based on further analysis and
revisions up to August 19, 2011

August 19, 2011



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Route Investigation, Analysis and Verification:

KBM Resources Group was retained by Xeneca Power Development Inc. to undertake a route investigation of proposed distribution lines routes for 18 proposed hydroelectric projects. After initial routing, a more advanced analysis was completed including digital aerial photography and a ground truthing exercise.

The 18 proposed Xeneca projects have been awarded conditional approval by the Ontario Power Authority under the Feed in Tariff (FIT) program. For each project, the site of the generator, point of common coupling (PCC) and point of connection (PC) are identified in the conditionally approved FIT application. Based on these approved points of connection, this exercise was undertaken to determine potential alternatives for distribution line routes for each project.

KBM was provided with preliminary distribution line routings developed by Xeneca staff and mapped by Natural Resource Solutions Inc. These preliminary routes were created, based on data found on publicly available mapping websites such as Google maps, Google Earth and Land Information Ontario (LIO) data sets (water, roads, streams, etc). Detailed information about values and land tenure affected by the proposed distribution line was not available during this first phase of the planning process.

KBM extended the scope of this review to further optimize the routes by maximizing the use of existing resources (roads), minimizing the number of water crossings, and avoiding wetlands where possible. Future studies will include a Rapid Assessment Technique to determine if adjacent wetlands are likely to be scored as a Provincially Significant Wetland (PSW) and an Ecological Land Classification using the MNR Crosswalk Exercise (where ecosite information is available) to identify potentially significant wildlife habitat along line and road corridors.

In addition, a leaf-off aerial photography program was undertaken for all routes (20 cm resolution (ground sample distance) digital true color RGB ortho-photography) to aid in habitat characterization and the identification of important environmental values.

Ground truthing of the route alternatives has been completed for segments running along existing roads. The remaining segments will be ground truthed after the routes are finalized through the Environmental Assessment (EA) process and potentially significant wildlife habitat has been identified (using Ecological Land Classification data where available).

All remaining assessment activities will be conducted following the completion of the EA (2011 and early 2012), prior to the construction of the distribution lines, which is expected to commence in the winter of 2013.

A draft report summarizing proposed distribution lines was completed by KBM on March 3rd, 2011. This report was distributed by Xeneca/KBM to all of the involved government agencies with the primary purpose of identifying and quantifying the proposed distribution lines and soliciting feedback to determine if sensitive values were missed during the preliminary analysis. Many of the proposed distribution lines described in the draft report have undergone changes primarily to mitigate impacts on identified values, wetlands, water crossings and patent lands.

This revised report describes the refined distribution line route for McCarthy Chutes and Four Slide Falls as a project-specific report.

Methodology:

Draft Report (March 3rd):

KBM began by assembling a database of pertinent values information and land tenure designations for the proposed distribution lines routes. The proposed line locations were then overlain with assembled values layers and a summary of the potentially impacted values was compiled and summarized. Data layers used for this exercise included:

- Land Information Ontario dataset
- NRCan Topographic data
- 2008 Forest Resource Inventory data
- Medium resolution SPOT panchromatic orthoimagery from Natural Resources Canada
- NRVIS Data Layers (circa Feb 2011)

A linear breakdown of proposed lines following existing roads, new access roads and new line corridors was also compiled and summarized. In order to minimize potential impacts to the environment, minor amendments were made, where possible, to the proposed routes by aligning them with existing roads and by avoiding water crossings and other sensitive areas. During the draft version of this exercise KBM did not have access to the most current forestry road layers.

Where appropriate, additional line routes were proposed. These were presented and explained in the draft report as alternatives with a primary goal of following existing roads and reducing impact to sensitive areas and identified values.

It should be noted that the desktop review was based solely on the information available to KBM. There is the potential that other unidentified values may be impacted by the proposed distribution lines such as unmapped water crossings or sensitive habitat areas. Further review of the proposed distribution line routes may be needed as per the requirement of the Class EA for each hydroelectric project.

Following the completion of the desktop review, further activities were planned to aid in the refinement of the proposed distribution line route:

- Digital aerial photography of the revised distribution line and road access routes.
- Ground truthing of the revised distribution line and road access routes
- Consultation and information sharing with each of the forest management companies which hold crown Sustainable Forest Licenses (SFL) in the areas that each project located.

Further review of the confirmed distribution line route will be undertaken as part of the regulatory permitting requirements for each project.

Revised Report (August 19th):

Following the completion of the March 3rd draft report, KBM undertook extensive consultation with the SFL holders linked to the 18 projects. The consultation was constructive and most of the SFL holders provided GIS datasets including all road networks, planned harvest block locations and aggregate pit locations;. Many of the managing foresters were able to provide location specific information based on their extensive knowledge of the land base. This information was used to complete revisions to the distribution line routes. The distribution line maps prepared for the revised report will include any roads layers provided by the SFL holders.

The line routes presented in the draft report were reviewed using all available information and revised where appropriate in an effort to:

- reduce environmental impact (i.e. streams & wetland crossings);
- minimize landscape footprint and fragmentation;
- dovetail with existing road corridors; and
- reduce total line length.

The updated distribution line routes are described in this revised report (August 19th) and, where possible, compared to the linear breakdown of the lines described in the draft report.

Ground Truthing:

Ground truthing of the proposed line and road access routes was completed subsequent to the post processing of digital aerial photography in June 2011. Existing roads and water crossings were assessed so as to determine their current condition, structural integrity and upgrade requirements.

Rapid Assessment of potential PSWs:

Where line or new road corridors could impact adjacent wetlands, a Rapid Assessment Technique will be used to determine if the wetland is likely to be scored as a Provincially Significant Wetland (PSW).

Northern Bioscience will complete this modeling exercise based on methods outlined in NEST Technical Report TR-025, Wetlands Evaluation in Ontario: Models for Predicting Wetland Score (OMNR, 1995). Where potential PSWs are identified in proximity to the route, the corridor will be realigned with sufficient setback to avoid impacts to these features.

Ecological Land Classification using Ecosite Crosswalk:

Where ecosite information is available, an Ecological Land Classification mapping exercise will be used to assist in identifying potentially significant wildlife habitat along line and road corridors.

Xeneca consultants will use high resolution aerial photography and Forest Resource Inventory (FRI) data to identify potentially significant wildlife habitat along the distribution line and road

corridors. Where ecosite information is available or can be derived, it will be used with the Northeastern Ontario Ecosite Crosswalk Exercise (MNR 2011) to identify the Ecological Land Classification (ECL) of habitat along the corridors. ECL information can then be used to assist in identifying potentially significant wildlife habitat using methods prescribed in the Significant Wildlife Habitat Technical Guide (OMNR, 2000).

Field Verification of Potentially Significant Wildlife Habitat (Endangered Species Act):

Twenty cm resolution digital true color ortho-photography and Ecological Land Classification data for the distribution line and road corridors will be used to identify potentially significant wildlife habitat along all potential corridors. Field investigations will be scheduled for the summer and fall of 2011 and spring of 2012, where needed.

Interim Report For Access Routes:

In general, the Xeneca waterpower sites will be accessed using existing forestry access roads, with some sections of new road required between the existing road and the generating station (GS) locations. Road maintenance and potential upgrades to existing roads and water crossings will be discussed with the SFL holder for the project area. Responsibility for road and water crossing upgrades will be confirmed during further discussion with the forestry companies later in 2011.

Desktop Exercise Report For: Four Slide Falls Project #1713400 and McCarthy Chute Project # 1713399

The Serpent river hydroelectric project consists of a proposed 2 MW generator at McCarthy Chutes and a 7.3 MW generator at Four Slide Falls on the Serpent River approximately 15 km south east of the Town of Elliot Lake.

Line Summary Four Slide Falls:

The proposed distribution line route for Four Slide Falls travels west from the generator for 3.2 km and then joins the line from McCarthy Chute. The combined line corridor continues 3.3 km west to Highway 108 and then northwest for 8.2 km along Highway 108 before reaching the point of connection.

The total line distance is 14.7 km, of which 56.1 % is located along pre-existing roads. This line would require 4 water crossings at pre-existing road corridor water crossings on Highway 108 and 4 new water crossings along new corridor on Crown land. Three wetlands are skirted and none are crossed. The line route is located primarily on crown land with 5.4 km crossing patent land. According to value mapping layers, a great blue heron nesting site was noted in proximity (325 m) of the route.

Line Summary McCarthy Chutes:

The line connecting the McCarthy Chutes generator to the common line junction for Four Slide Falls travels 8.8 km northwest on crown land. This line route follows 3.3 km of existing forest roads/trails and 5.5 km of new corridor. Two water crossings were noted, including one a new line corridor. No wetlands would be crossed by this route. A great blue heron nesting site was noted in proximity (1000 m) of the proposed distribution line.

High potential areas for cultural heritage are quite likely to be present at the dam sites. Further consultation with the Ontario Ministry of Tourism and Culture and/or a licensed archaeologist will be required to determine necessary steps for project progression.

Roads Summary:

The Four Slide Falls project will be accessed using approximately 30 km of existing Eacom forest access roads, with a section (3 km) of new road required between Eacom roads and the GS location. Portions of existing Eacom roads will require upgrades and water crossing repairs.

The McCarthy Chute project will be accessed using a 15 km portion of existing Eacom forest access road, with a 600 m section of new road (existing trail upgrade) required between the Eacom road and the GS location. Agreements for road maintenance and potential upgrades to existing roads and water crossings will be discussed with Eacom.



Figure 1. Examples of areas requiring upgrade or repair along existing Eacom roads.

Appendix

Revised Line Route Summary Statistics for McCarthy Chutes and Four Slide Falls:

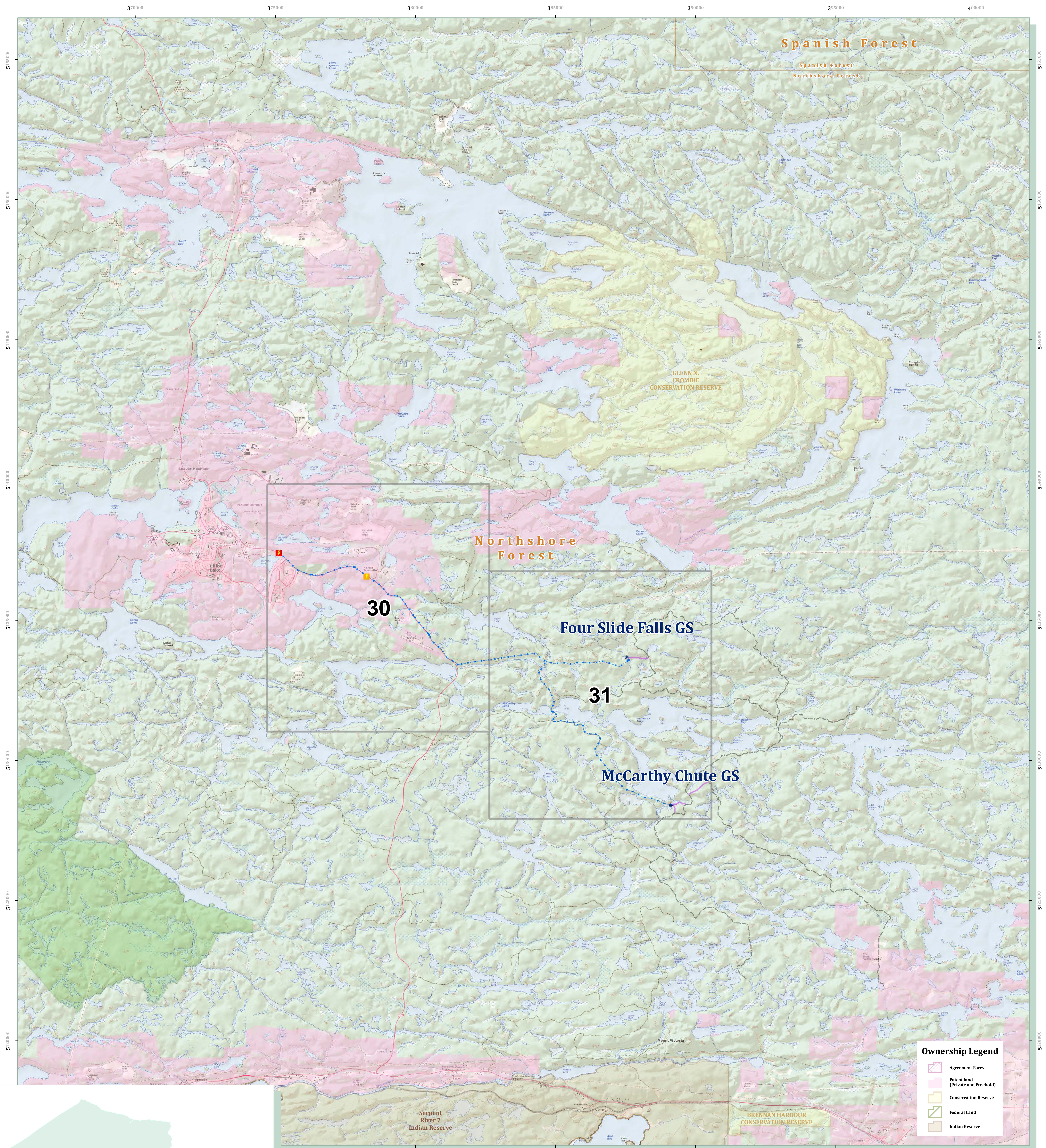
Site	Owner Type ¹	RoadType	Summary Statistics					
			Length ² (m)	Water Crossing			Wetlands	
				Highway	Existing	New	Edge	Crossing
Serpent (Four Slide Falls)	Crown	New Corridor	3,193	-	-	3	-	-
Serpent (Four Slide Falls, McCarthy Chute)	Crown	Existing Road	2,734	-	-	-	1	-
Serpent (Four Slide Falls, McCarthy Chute)	Crown	New Corridor	3,246	-	-	1	-	-
Serpent (Four Slide Falls, McCarthy Chute)	Private	Existing Road	5,485	4	-	-	2	-
Serpent (McCarthy Chute)	Crown	Existing Road	3,257	-	1	-	-	-
Serpent (McCarthy Chute)	Crown	New Corridor	5,536	-	-	1	-	-

Revised maps for the Serpent River sites are located at:

[http://www.kbmr.com/upload/documents/atlas_aug_19_11_tile-set-f-\(serpent-river\).pdf](http://www.kbmr.com/upload/documents/atlas_aug_19_11_tile-set-f-(serpent-river).pdf)

¹ The majority of the land identified as ‘crossing patent land’ is actually line routing which will be constructed inside an existing public road allowance and is adjacent to patent land

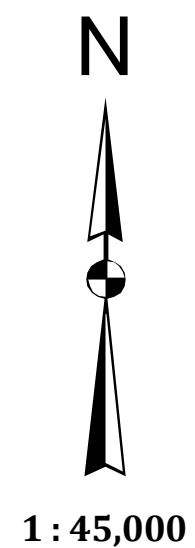
² For conservative purposes, the line length tabulated in this report includes all line constructed from the Generation Station (GS) to the Point of Connection (PC), which includes a section of line expansion, which will be owned, operated and maintained by Hydro One Networks Inc. This HONI grid expansion is defined as the line section between the Point of Common Coupling (PCC) and the Point of Connection (PC). This section is always built inside an existing public road allowance



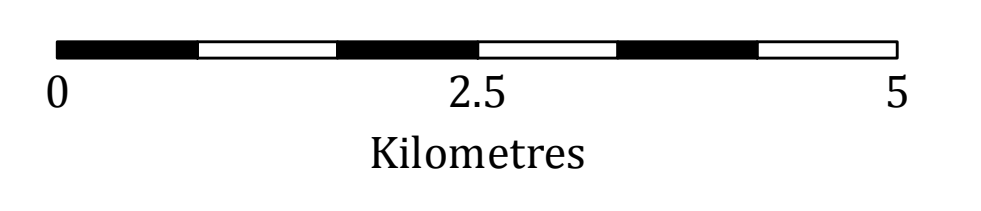
Reference data based on the Toporama 1:50,000 scale topographic reference product developed by Natural Resources Canada (NRCan) and the Land Information Ontario data warehouse, Ontario Ministry of Natural Resources.

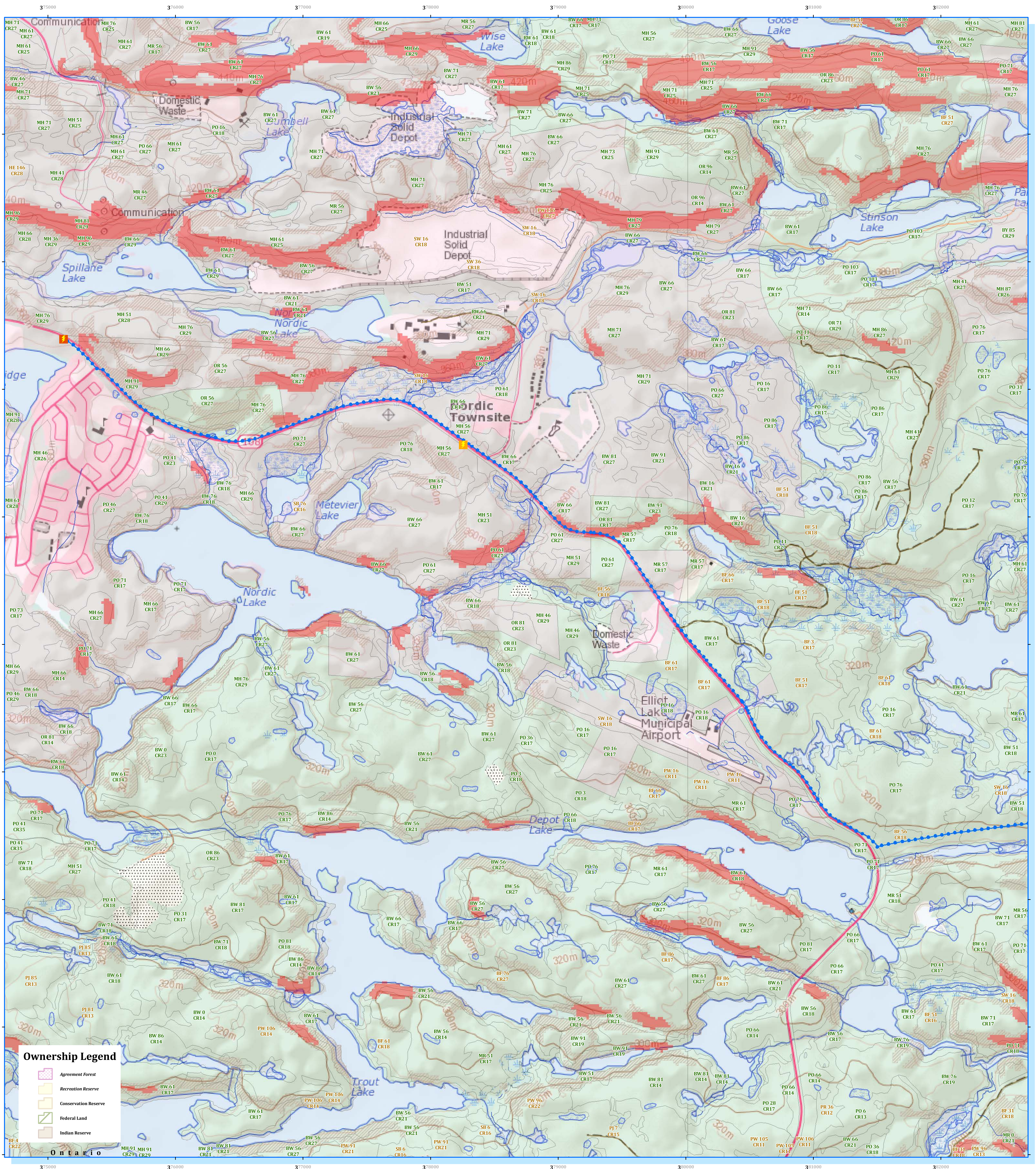
Tile Set F (Serpent River)

- | | | |
|---------------------------------------|---|----------------------------|
| Dam Site | Proposed Powerline | Primary Haul Road |
| Point of Connection (PC) | Proposed Alternate Powerline | Secondary Haul Road |
| Point of Common Coupling (PCC) | Resource / Recreation Access Route (requires field verification) | Winter Haul Road |
| Forest Management Unit | New Access Road | Tertiary Haul Road |
| | Potential New Access Road | |



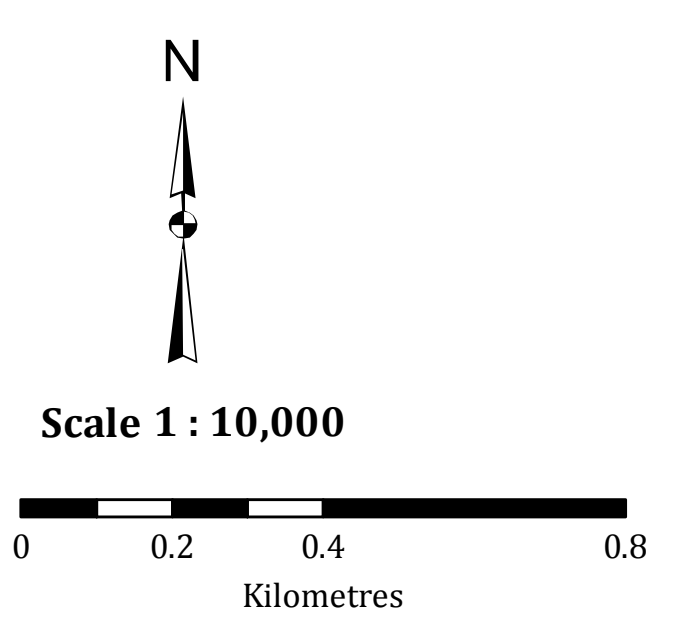
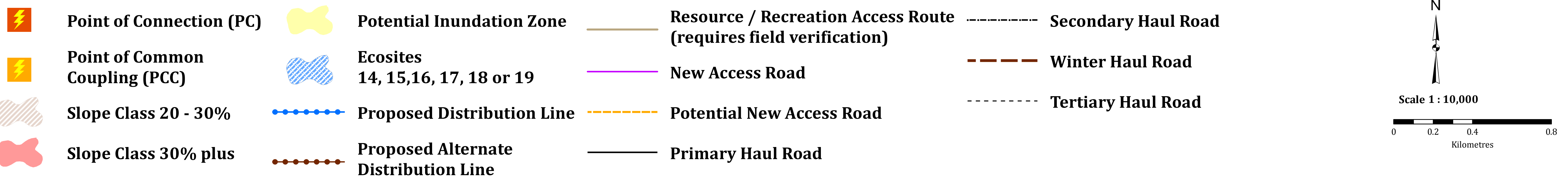
1:45,000

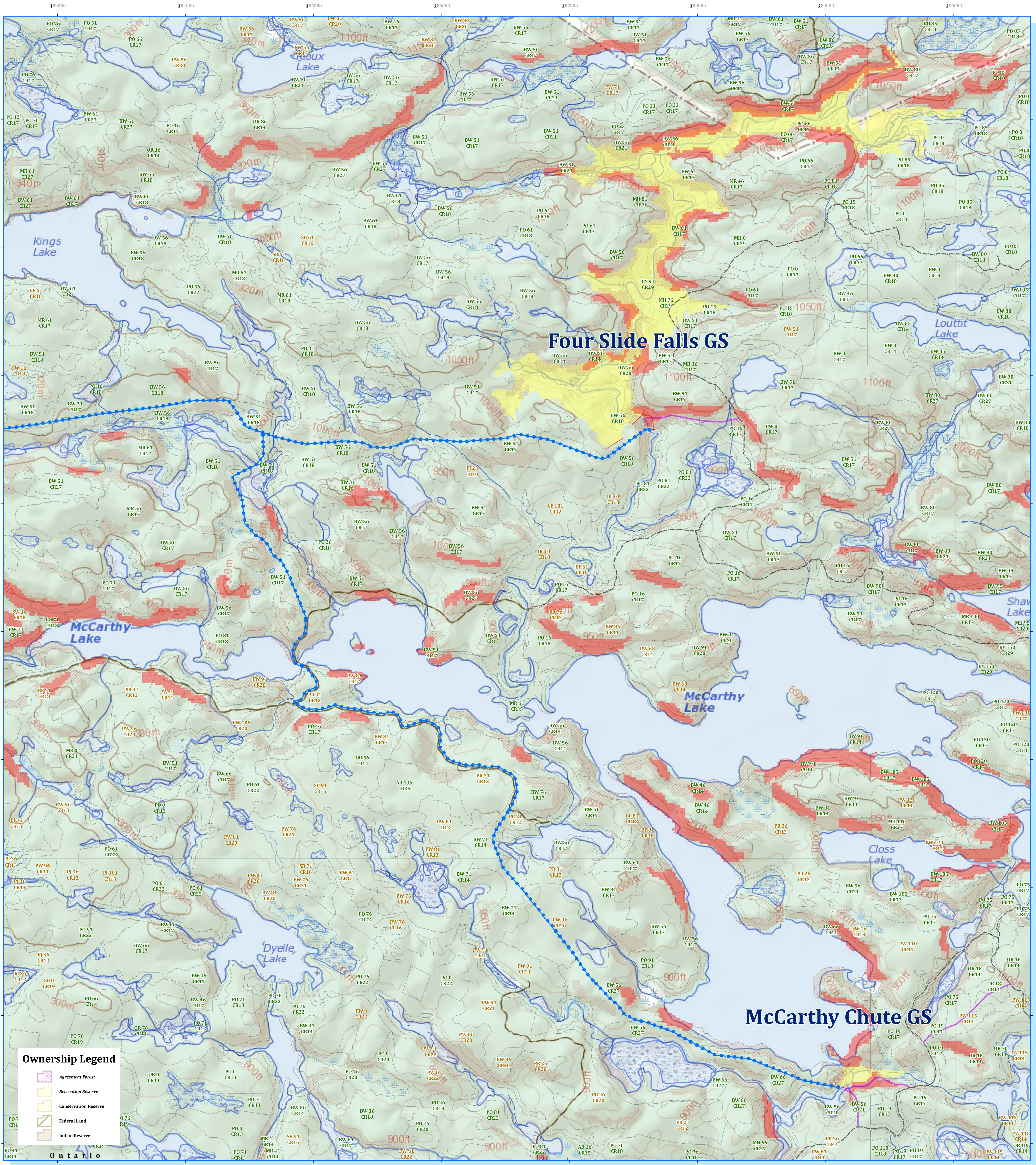




Reference data from the Land Information Ontario data warehouse, Ontario Ministry of Natural Resources. Toporama background from Natural Resources Canada (NRCan), Earth Sciences Sector, Mapping Information Branch, Centre for Topographic Information - Sherbrooke.

Tile_F_30 Serpent River (Four Slide Falls, McCarthy Chute)





Reference data from the Land Information Ontario data warehouse, Ontario Ministry of Natural Resources. Toporama background from Natural Resources Canada (NRCan), Earth Sciences Sector, Mapping Information Branch, Centre for Topographic Information - Sherbrooke.

Tile_F_31 Serpent River (Four Slide Falls, McCarthy Chute)

