

D7 NAVIGABLE WATER UPDATE

MEMO

To: Generation PGM Inc.

From: Ecometrix Inc.

**Ref: Generation Marathon Palladium Project
Site - Navigable Waters Update**

Date: 01 March 2021

Ecometrix Incorporated conducted an assessment of water courses (streams, connecting channels) and waterbodies (small lakes, ponds) that may be affected by the development of the Marathon project as part of the original environmental impact statement (EIS). The assessment was carried out for the purpose of determining what, if any, authorizations under the Navigable Waters Protection Act (NWPA) would be required. As part of the update to the EIS, this assessment has been revisited in consideration of changes to the regulatory setting, changes to the Project and changes to the nature of the site. The updated preliminary assessment is provided below.

Regulatory Framework

The NWPA was superseded by the Canadian Navigable Waters Act (CNWA) in 2019. Notable changes to the regulatory framework included¹:

- a new requirement for approvals of major works that significantly impact navigation on all navigable waters, such as large dams or other works;
- authority for the Minister of Transport to regulate obstructions on all navigable waters;
- a requirement for owners to notify the public and give people the opportunity to ask questions and express concerns before construction begins on all navigable waters;
- authority for the Minister of Transport to review works on navigable waters (not listed in the Schedule to the Act) where there are unresolved navigation concerns;
- a better process with clear criteria to identify navigable waters that should receive extra oversight, and add these to the Schedule. Under the CNWA, Transport

¹ As reproduced from
<https://www.canada.ca/en/services/environment/conservation/assessments/environmental-reviews/navigation-protection/guidebook.html>

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Canada (TC) would provide extra oversight for navigable waters that need it the most and those that are of greatest importance to Canadians, including eligible Heritage and longest wild and free-flowing rivers;

- new powers for the Minister of Transport to study and collect information necessary for the purposes of administering the Act (e.g., studies on cumulative effects related to navigation); and
- a renewed nation-to-nation relationship with Indigenous peoples based on the recognition of rights, respect, cooperation and partnership.

In addition, the CNWA has clarified the definition of a navigable water. This new definition is as follows:

- *“means a body of water, including a canal or any other body of water created or altered as a result of the construction of any work, that is used or where there is a reasonable likelihood that it will be used by vessels, in full or in part, for any part of the year as a means of transport or travel for commercial or recreational purposes, or as a means of transport or travel for Indigenous peoples of Canada exercising rights recognized and affirmed by section 35 of the Constitution Act, 1982, and*
 - *(a) there is public access, by land or by water;*
 - *(b) there is no such public access but there are two or more riparian owners; or*
 - *(c) Her Majesty in right of Canada or a province is the only riparian owner. (eaux navigables)*

In deciding whether a waterway is navigable the following key questions are considered:

- What are the physical characteristics of the waterway (size and depth)?
- Is the waterway used for transport or travel for commercial or recreational purposes?
- Is the waterway used for transport or travel by Indigenous peoples?
- Is the waterway likely to be used in the future?
- Was the waterway used in the past?
- With respect to public access:
 - Is there access by land or water?

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- Are there two or more waterfront owners?
- Is the Crown the only waterfront owner?

Proponents proposing to construct, place, alter, rebuild, remove or decommission a work in, on, over, under, through or across any navigable water, are subject to the requirements of the CNWA and are required to seek approvals for such works in accordance with the CNWA. It is noted that the CNWA only applies to navigable waters as defined in the act; where a water is not considered navigable, it does not fall within the jurisdiction of the CNWA, nor the Navigation Protection Program (NPP), and an authorization to proceed with proposed works is not required. This does not preclude the need to seek permissions to conduct said works under other regulatory instruments such as the Fisheries Act.

The Project

Though the overall scope of the project remains very similar to the original project proposal, Generation PGM has proposed some changes mostly concerning minor changes to the site layout. These changes affect the potential and nature of interactions between the project and water courses and water bodies on the site and updated information is provided herein.

The Site

No significant changes in the configuration of the project site have been identified since the original EIS submission that have materially affected water courses and water bodies.

Updated Assessment of Project Interactions with Navigable Waters

As was the case with the original project proposal, the project will potentially affect water courses and water bodies in six local subwatersheds. Figure 1 provides an overlay of the site footprint with these subwatersheds and indicates the extent of overprinting of water courses and water bodies that can be expected. Table 1 provides the update of the potential impacts from the project on water course and water bodies within the site footprint. The breakdown shown in Table 1 indicates whether a water course or water body has been preliminarily considered to be navigable, based on the definition and key questions provided above. Table 1 also indicates the association of each water course or water body to a mine component, as well as the area or length of the water feature that is affected. Water course and water body names in Table 1 are those provided on Figure 1 for reference.

The following are noted with respect to the updated consideration of navigable waters. The determinations provided below are preliminary based on our interpretation of the CNWA,

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the information that had been gathered through the baseline environment characterization program to support the environment assessment process and information provided by local Indigenous communities and people. The interpretation is subject to review and confirmation with TC through the NPP, as well as further communications with potentially affected Indigenous communities and people.

- Under the new definition of navigable waters, the streams and connecting channels within the Project footprint, as well as those for which culverts will be required, would not likely be considered navigable. This is mainly based on the fact that they are not currently used by vessels for either commercial or recreational purposes, nor in the past, due to their small size, steep gradient and the extent of natural barriers. The streams and connecting channels also do not represent a means to travel from one area to another and most would generally be considered difficult, at best, to access. In addition, information provided through GenPGM consultations with Indigenous communities and people has not identified these streams and connecting channels as historical or current travel routes or portages. The travel routes by indigenous and local communities are Hare Creek, Hare Lake and north to Bamooos, the mouth of Stream 6 (Angler Creek south of Hwy 17) and the Pic River.

The screening below using the key questions identified above is provided for each the streams and connecting channels shown in Table 1 collectively since the answers would be common to all.

What are the physical characteristics of the waterway (size and depth)?	All are small in size; generally not more than 1 m in width and less than 0.5 m in depth. Many are associated with steep gradient and significant barriers. For example, the gradient within connecting channels that drain subwatersheds 101, 102 and 103 from the project site to the Pic River is between ~ 8% and 16%. Barriers (rock jams, log jams, cascade waterfalls, beaver dams) are common to all site-associated subwaters – the locations of these barriers are shown on maps provided in the aquatic environment baseline update report and are provided herein as an attachment for reference.
Is the waterway used for transport or travel for commercial or recreational purposes?	No.
Is the waterway used for transport or travel by Indigenous peoples?	No, based on information in hand. Further consultation is planned.
Is the waterway likely to be used in the future?	There is no basis to assume that future use will be different from past or present use.
Is there access by land or water?	Access to the site is generally limited. There would be no direct access via water. There would be very limited practical access via land, given the density of vegetation and local topography.

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Are there two or more waterfront owners?	The site is on crown land, with mining claims issued to GenPGM.
Is the Crown the only waterfront owner?	The site is on crown land, with mining claims issued to GenPGM.

- A total of 13 numbered waterbodies and a number of other smaller ponds have been identified as being affected by the project (overprinting, loss of water). Our initial interpretation is that these waterbodies do not likely meet the navigable water definition. They are small in size and to our knowledge are not used for transport or travel for commercial or recreational purposes, nor have they been used for this purpose in the past. Many of these waterbodies would generally be considered difficult, at best, to access and they isolated within the landscape. In addition, information provided through GenPGM consultations with Indigenous communities and people has not identified these waterbodies as historical or current travel routes or portages. The travel routes by indigenous and local communities are Hare Creek, Hare Lake and north to Bamoo, the mouth of Stream 6 (Angler Creek south of Hwy 17) and the Pic River.

The screening below using the key questions identified above is provided for each the small ponds and lakes shown in Table 1 collectively since the answers would be common to all.

What are the physical characteristics of the waterway (size and depth)?	All are small in size; many less than 1 ha generally not greater than 2 ha in surface area. The small lakes and ponds and generally associated with, or created by log/rock jams or extensive beaver dams and are isolated in the landscape.
Is the waterway used for transport or travel for commercial or recreational purposes?	No.
Is the waterway used for transport or travel by Indigenous peoples?	No, based on information in hand. Further consultation is planned.
Is the waterway likely to be used in the future?	There is no basis to assume that future use will be different from past or present use.
Is there access by land or water?	Access to the site is generally limited. There would be no direct access via water. There would be very limited practical access via land, given the density of vegetation and local topography.
Are there two or more waterfront owners?	The site is on crown land, with mining claims issued to GenPGM.
Is the Crown the only waterfront owner?	The site is on crown land, with mining claims issued to GenPGM.

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- Subject to confirmation of final design, minor works associated with the “Outfalls and Water Intakes” class are proposed. This includes the effluent discharge structure that will be constructed at Hare Lake. A *Minor Works Order* allows for works to be built if they meet the criteria for the applicable class of works, as well as specific terms and conditions for construction. Works meeting the assessment criteria of the *Minor Works Order* are classed as minor works under the CNWA and may proceed without an application for approval as long as they comply with the legal requirements.
- The mine plan does not include any interaction with the Pic River that would be associated with navigability.

Reference: Generation Marathon Palladium Project Site - Navigable Waters Update

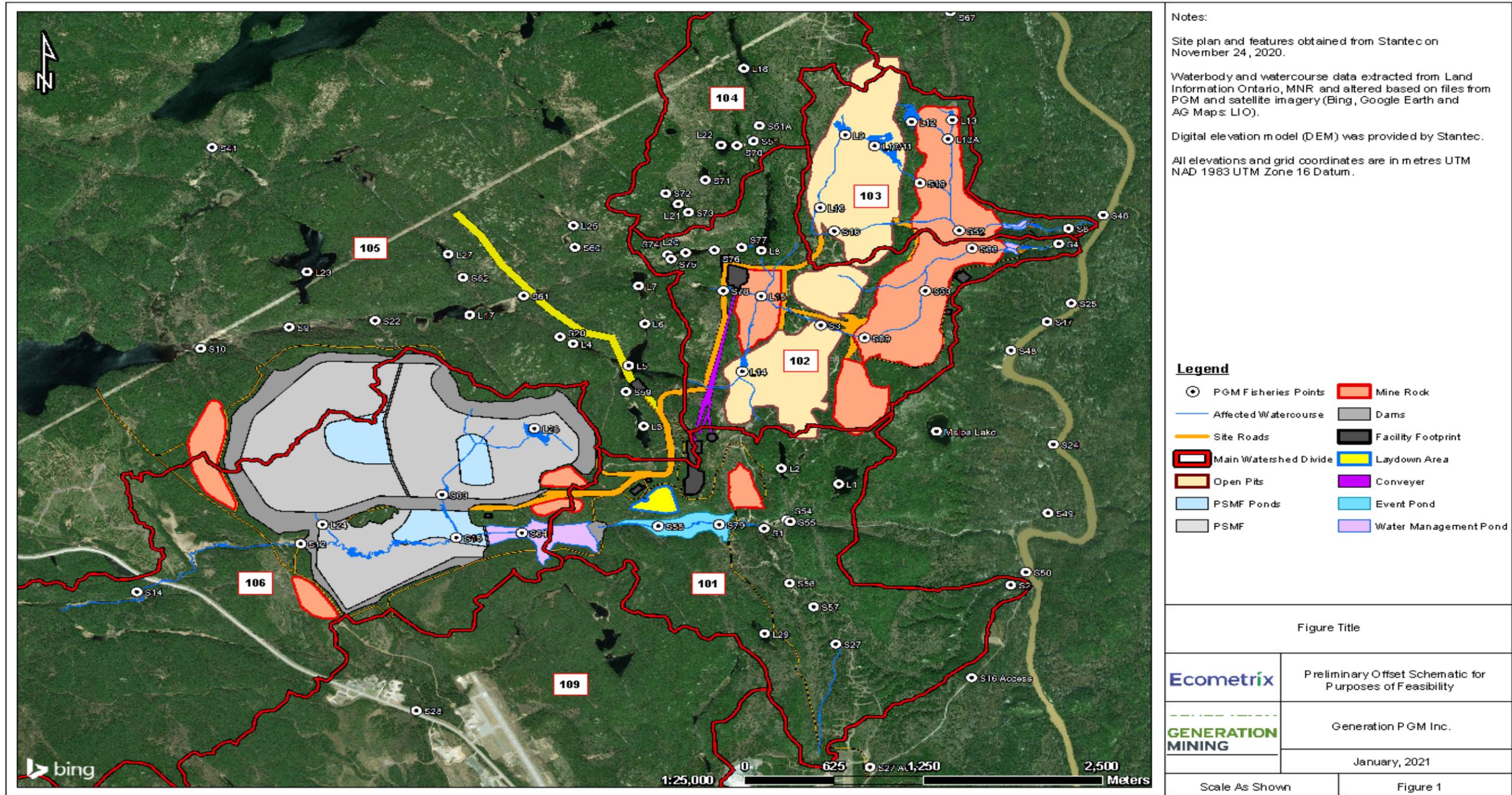


Figure 1: Overlay of the site footprint and local subwatersheds

Reference: Generation Marathon Palladium Project Site - Navigable Waters Update

Table 1: Summary of Navigable Water Screening on the Generation PGM Marathon Palladium Project Site

Mine Component	Waterbody Name	Total Waterbody Area (ha) or Connection Channel Length (m) Affected	Nature of Interaction	Navigable Water?
Primary Open Pit	L9	0.70 ha	Overprinting	No
	L10/L11	2.03 ha	Overprinting	No
	Outlet of L10/11 to extent of MRSA	196.4 m	Channel will become isolated by mine infrastructure	No
	Inlet to L12	66.6 m	Overprinting	No
	L16	0.32 ha	Overprinting	No
	Channel between L9 to L10/11	30.0 m	Channel will become isolated by mine infrastructure	No
	North of L9	70.8 m	Channel will become isolated by mine infrastructure	No
	Connecting channel L9 to L16	617.8 m	Overprinting	No
	L16 outlet stream (From L16 to the MRSA)	871.7m	Overprinting	No
	Central Pit (formerly Satellite Pit #2)	Stream 2 tributary (portion)	338.1m	Overprinting
South Pit (formerly Satellite Pit #3, #4 and #5 Complex)	L14	0.70 ha	Overprinting	No
	L14 Inlet from West	117.5m (inlet) 8.1 m (outlet)	Overprinting	No
	Stream 2 tributary	441.1 m	Overprinting	No
	Stream 2 main stem (portion)	299.2 m	Overprinting	No
	MRSA	L13	0.17 ha	Overprinting
	L13A and small pond north of L13A	0.20 ha	Overprinting	No
	Connecting channel L12 to L13A	245.3m	Overprinting / Channel will become isolated by mine infrastructure	No
	Upstream of L13	77.6 m	Overprinting	No
	Upstream of L13 and Connecting channel L13 to L13A	234.3 m	Overprinting	No
	L10/L11 outlet stream	301.5 m	Overprinting / Channel will become isolated by mine infrastructure	No

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Mine Component	Waterbody Name	Total Waterbody Area (ha) or Connection Channel Length (m) Affected	Nature of Interaction	Navigable Water?
	L13a outlet stream to the confluence with the L16 outlet stream	652.9 m	Overprinting	No
	Stream 3 Downstream of MRSA	415.7 m	Loss of drainage area	No
	L16 outlet stream (portion through MRSA)	293.4 m	Overprinting	No
	Stream 3 main stem below the confluence of the L13a outlet stream and the L16 outlet stream	741.2 m	Overprinting / Loss of drainage area	No
	Stream 2 tributary (portion from S69 to S53)	956.7 m	Overprinting	No
	Stream 2 main stem (portion)	1,622.4 m	Overprinting / Loss of drainage area	No
ROM Stockpile (MRSA West of Central Pit)	L15 outlet stream (East) and pond	93.22 m 0.12 ha	Overprinting	No
	L15 outlet (portion from MRSA to edge of pit)	179.02 m	Overprinting / Channel will become isolated by mine infrastructure	No
	Connecting channel south of L15 to L14	369.5 m	Overprinting / Channel will become isolated by mine infrastructure	No
	L15 inlet stream (west)	151.8 m	Overprinting / Channel will become isolated by mine infrastructure	No
	L15 inlet stream (north)	265.7 m	Overprinting / Channel will become isolated by mine infrastructure	No
	L15 and pond downstream of L15	0.26 ha	Overprinting	No
	Pond Upstream of L15 (South)	0.13 ha	Overprinting / Channel will become isolated by mine infrastructure	No
Process Solids Management Facility (PSMF)	Stream 6 (main stem eastern headwaters, S64 to S15)	526.8 m	Overprinting	No

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Mine Component	Waterbody Name	Total Waterbody Area (ha) or Connection Channel Length (m) Affected	Nature of Interaction	Navigable Water?
	Stream 6 main stem (S15 to S12)	824.1 m	Overprinting	No
	Stream 6 main stem (S12 to tributary downstream S14)	2,004.1 m	Loss of drainage area	No
	Stream 6 main stem ponds (between S64 and S12)	2.1 ha	Overprinting	No
	L26	1.34 ha	Overprinting	No
	L26 outlet stream and ponds (tributary of Stream 6)	1,788.4 m Ponds: 0.52 ha	Overprinting	No
	L24	0.11 ha	Overprinting	No
	L24 inlet and outlet streams	190.0 m	Overprinting	No
Event Pond	S58 east to S1 (stream / ponds)	1,001.7 m (stream) 0.33 ha (ponds)	Overprinting / Loss of drainage area	No
Other (overprinted by Roads)	Various stream portions	2,135.7 m	Overprinting	No
	Stream 6 downstream of PSMF to Tributary	1,989.8 m	Loss of drainage area	No

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Path Forward

As indicated, the determinations provided in this memorandum are preliminary based on our interpretation of the CNW Act. The final determination on which waters are considered navigable will be discussed during communication with TC/NPP staff and potentially affected Indigenous peoples and other interested parties.

Subject to review and confirmation of the interpretation provided herein, proposed mine-related works can advance without need for a specific CNWA authorization. The small on-site connecting channels, ponds and lakes are interpreted at this time as not be navigable and the Hare Lake effluent discharge is thought to meet the criteria of the *Minor Works Order*.

If, as a result of the intended communications the interpretation of navigability should change, and it is determined that the project will affect the navigability of a water course or water body that is considered navigable under the CNWA, an application for an authorization to proceed with said development will be submitted to the NPP in accordance with the CNWA. At present, in the case of navigable waters, an Order-in-Council will be required and TC will develop the Minister's recommendation to be submitted to the Governor-in-Council. This process provides for an exemption of Clauses 21 through 23 of the CNWA through an Order-in-Council, thus allowing the project component to proceed. The development of the recommendation by TC is conducted in parallel and in consultation with the other agencies involved (i.e., Natural Resources Canada), as well as through consultation with the public and Indigenous communities, to ensure that the exemption under the CNWA is in the overall public interest.

Closure

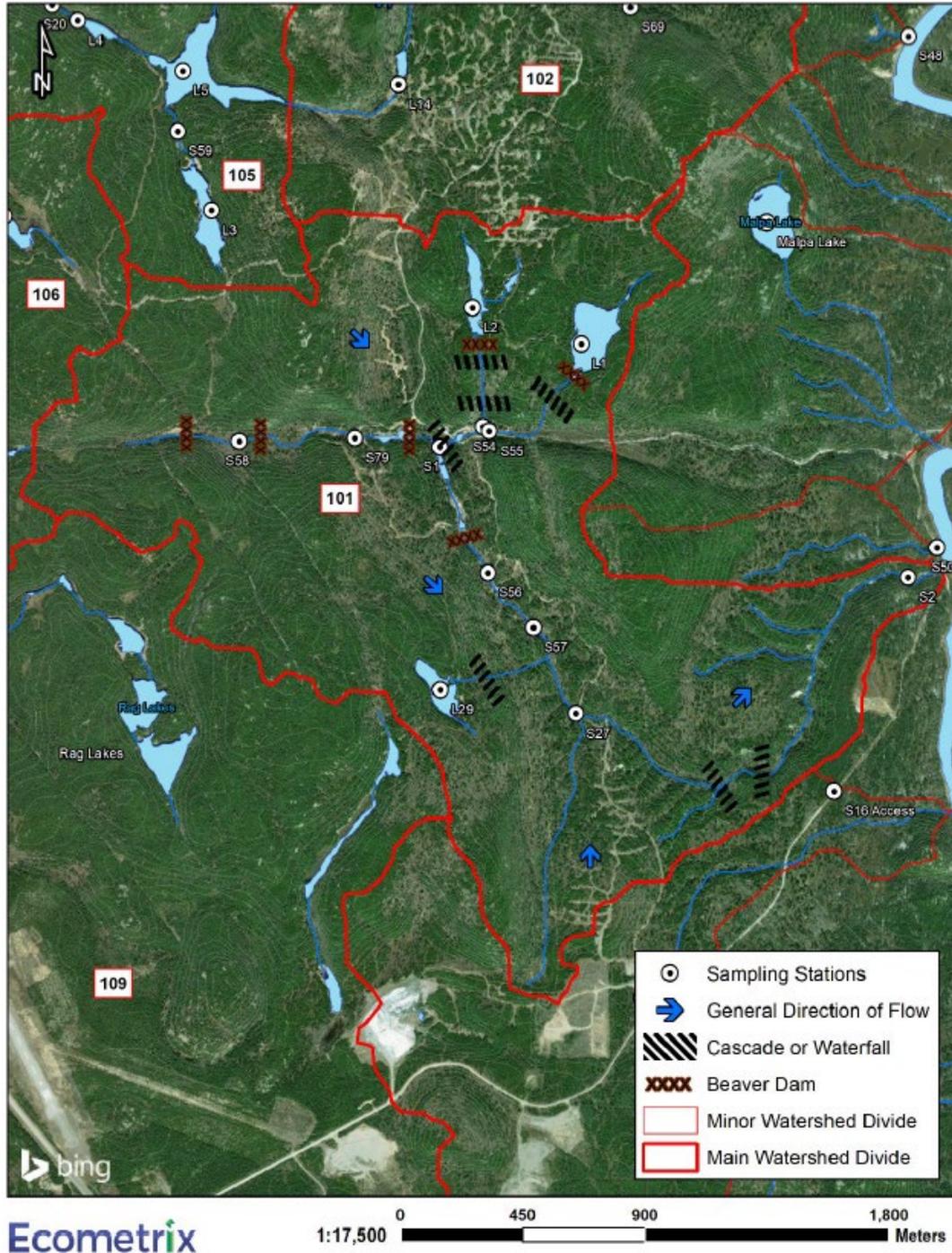
We trust this memo meets your needs at this time. Please do not hesitate to contact us with questions or requests for further information at your convenience.

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Attachment 1 – Subwatershed Maps Showing Barrier in Local Connecting Channels

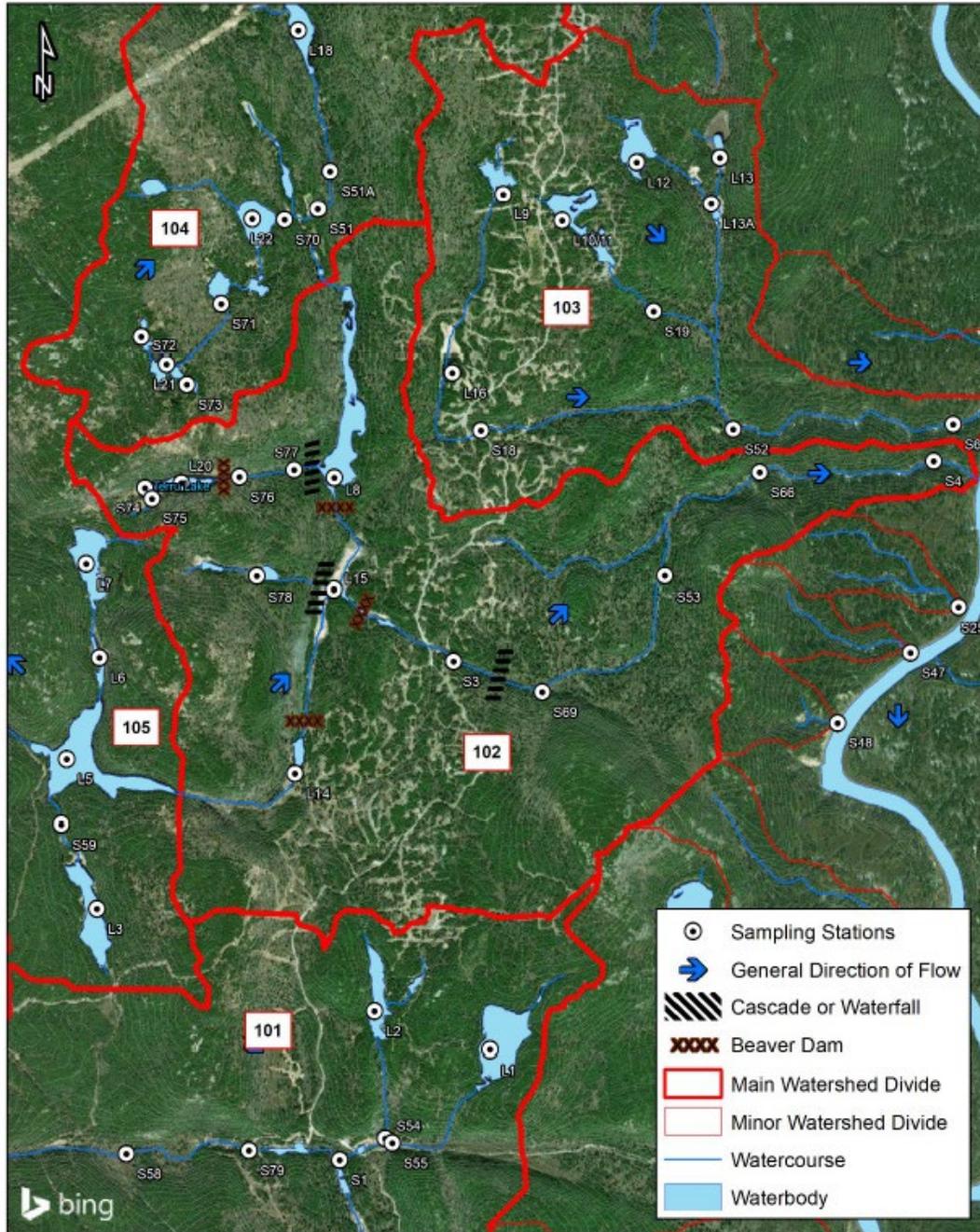
Reference: Generation Marathon Palladium Project Site - Navigable Waters Update

Subwatershed 101



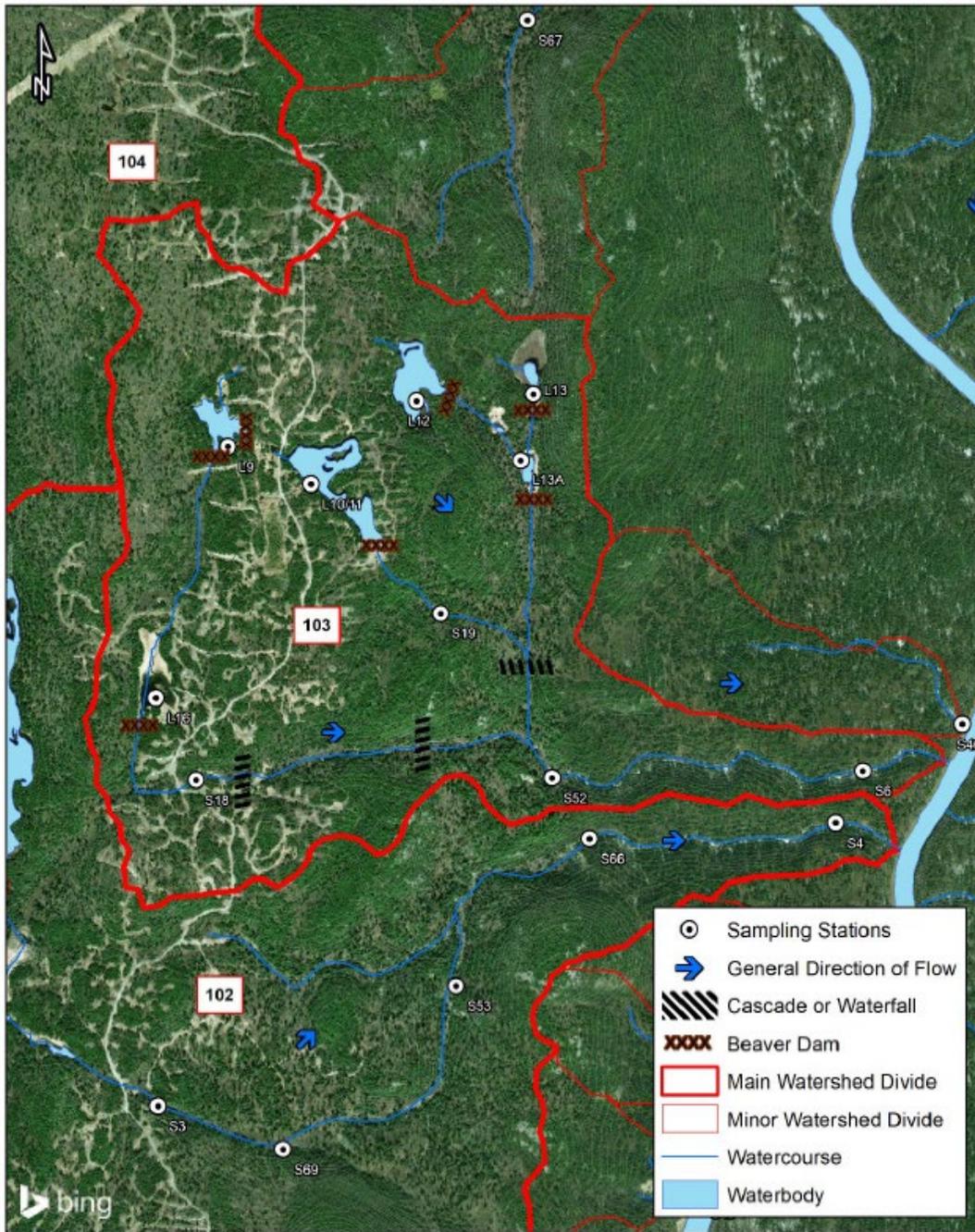
Reference: Generation Marathon Palladium Project Site - Navigable Waters Update

Subwatershed 102



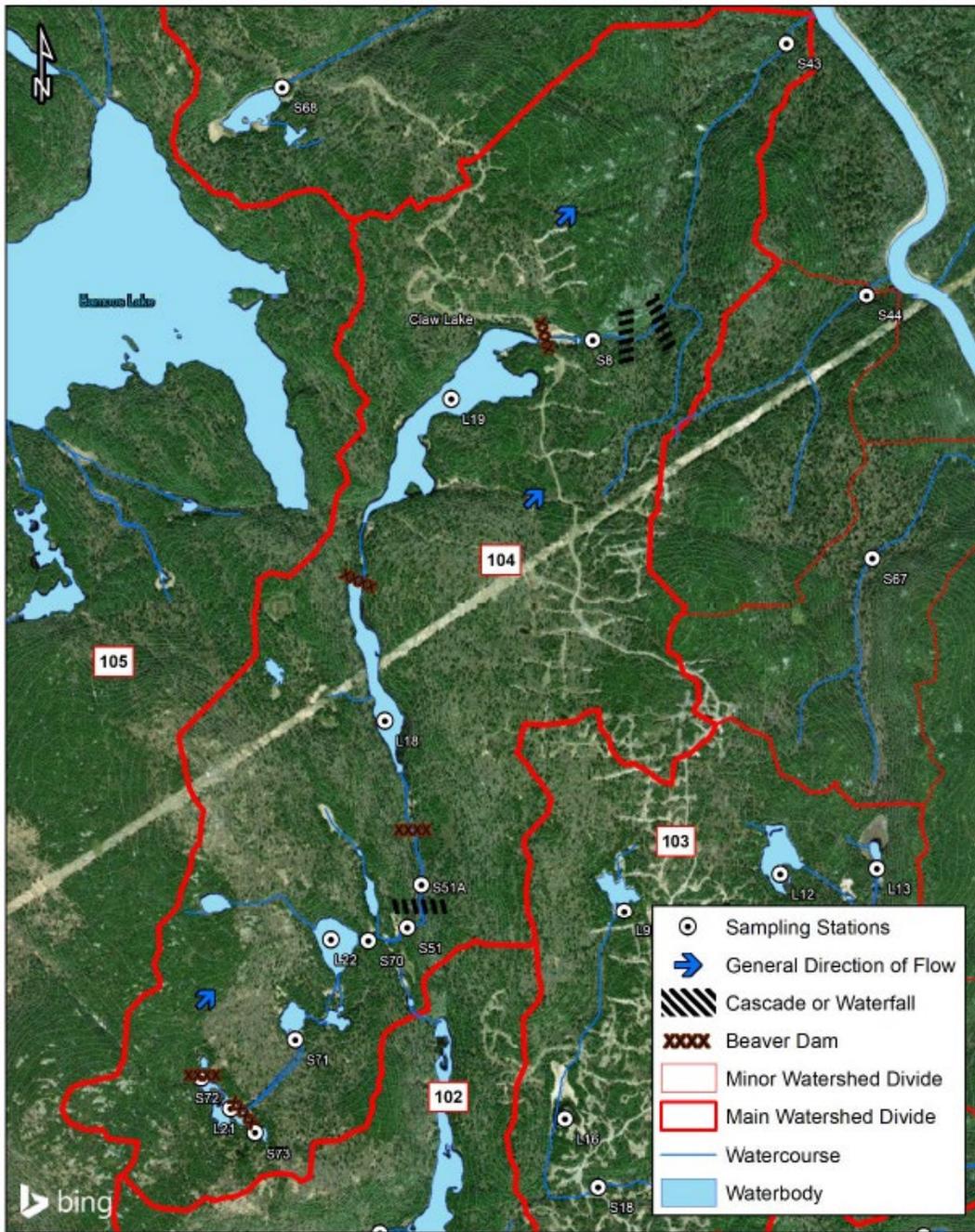
Reference: Generation Marathon Palladium Project Site - Navigable Waters Update

Subwatershed 103



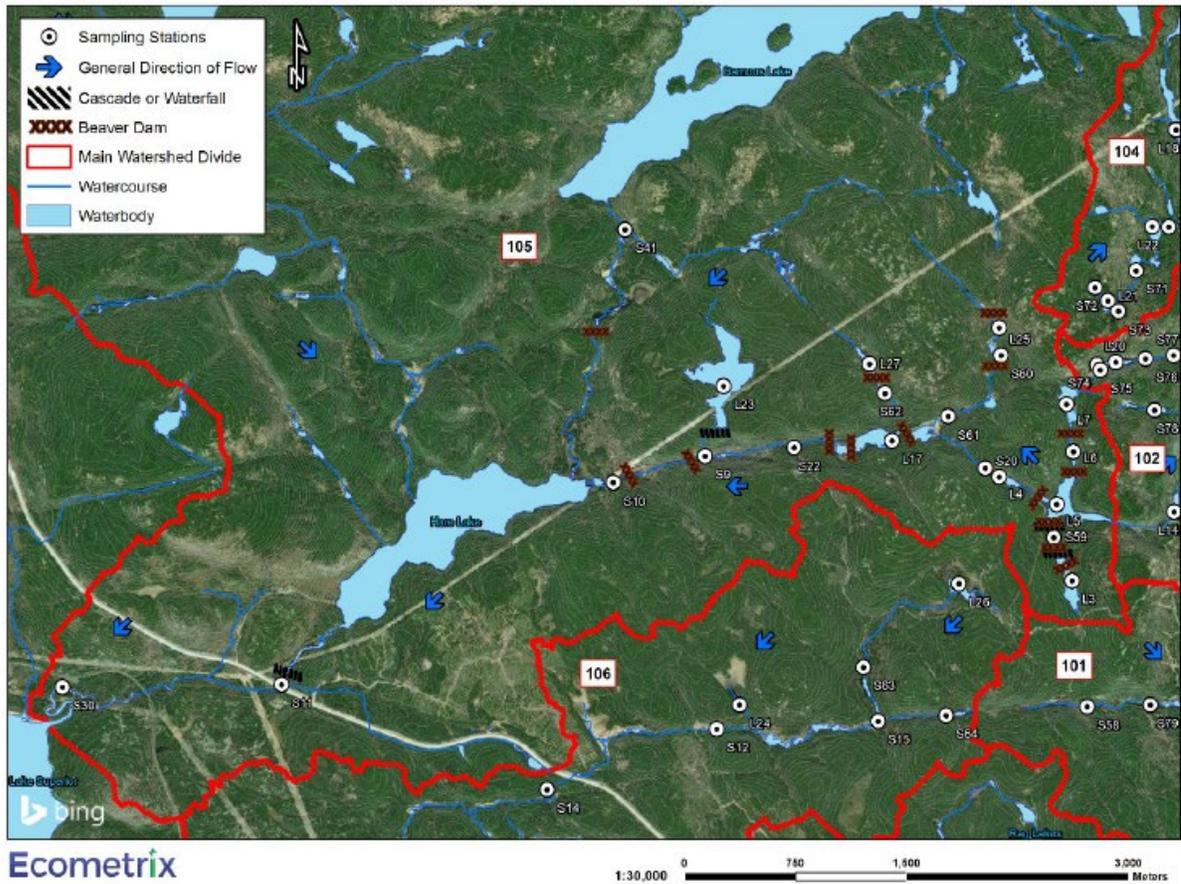
Reference: Generation Marathon Palladium Project Site - Navigable Waters Update

Subwatershed 104



Reference: Generation Marathon Palladium Project Site - Navigable Waters Update

Subwatershed 105



Reference: Generation Marathon Palladium Project Site - Navigable Waters Update

Subwatershed 106

