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NEXTBRIDGE INFRASTRUCTURE LP

Detailed Project Plan for Kama Cliffs Conservation Reserve for the Ontario East-West Tie Transmission Line Project

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1 INTRODUCTION

The purpose of this Detailed Project Plan (DPP) is to provide the Ministry of Environment, Conservation and Parks (MECP) with details on the activities to be undertaken within Kama Cliffs Conservation Reserve (C2234) during NextBridge Infrastructure LP's (NextBridge) Ontario East West Tie Line Transmission Project ('OEWTL' or 'the Project'). Kama Cliffs Conservation Reserve (CR) is located within Workfront 3, which is a priority work front to obtain permitting in order to maintain Project schedule. Kama Hills Provincial Nature Reserve (P2662), Ontario's smallest provincial park (1 ha) is located within the Kama Cliffs CR, but outside of the Project footprint (Attachment A, Figure A-1).

Nine (9) DPPs have been developed to describe Project activities and infrastructure within protected areas, as summarized in Table 1. The purpose of these DPPs is to identify site-specific interaction(s) with known environmental values in protected areas and to describe proposed construction scope, methods, timing, limitations and mitigation measures to avoid, protect and/or restore these habitat(s).

1.1 Regulatory Context

A competitive bidding process was held by the Ontario Energy Board (OEB) for the Project, and selected NextBridge to design and build the Project in August 2013. The Independent Electricity System Operator (IESO, formerly the Ontario Power Authority [OPA]¹) originally identified an in-service date of 2018 for the Project, and in 2014, revised the required in-service date to 2020. Due to additional Project hearings held the OEB in the summer of 2018, the ISD was extended to the fall of 2021.

The Project has been identified as a priority project by the Province of Ontario, and a needed Project by the IESO to meet future electricity demand in northwestern Ontario. The Project's Amended Environmental Assessment (EA) application (Golder, 2018a) was approved in March 2019; the EA approval includes a set of Project EA Conditions and Commitments.

Ontario's protected areas are regulated under the *Provincial Parks and Conservation Reserves Act, 2006* (PPCRA), which sets out the legislative framework for the formal protection of Provincial Parks (PP) and Conservation Reserves (CR) and direction for the MECP to manage these areas. Sections 20 and 21 of the PPCRA outline the Conditions of Approval for Resource Access Roads and Utility Corridors that must be considered and addressed by NextBridge during construction planning, execution, decommissioning and operations, in order to support permit approvals by MECP. Conditions of Approval are described in detail in Section 1.3 (below) and addressed throughout this DPP.

Under EA Commitment 1029 NextBridge will provide a DPP for each PP and CR where construction will occur, which should include, but not be limited to, the following information:

1. The pre-construction field reconnaissance approach (Section 6.1);
2. Construction schedule and design information (Section 4.1.2.3);
3. Approaches to protecting environmental values (Section 0);
4. Training and employment opportunities for Indigenous communities; and,
5. Traditional Ecological Knowledge (TEK)/Traditional Land and Resource Use (TLRU) protocol.

¹ On January 1, 2015, the OPA merged with the IESO to create a new organization that combines the OPA and IESO mandates.

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This DPP provides details on items 1-3 above; additional information surrounding the application of environmental Best Management Practices (BMP) and contingency plans for the Project can be found in the Project Construction Environmental Protection Plan (CEPP) (NextBridge, 2019). Details on items 4 and 5 re: indigenous training, employment, TEK and TLRU are outlined in the Project Overarching DPP (NextBridge, 2019a), and have not been included here based on regulator feedback to avoid redundancy between Project submittals. Key to this DPP is that NextBridge is requesting clear and final written direction from MECP on the requirements and/or restrictions on access development within the CR. Section 4 of this DPP outlines the cost and benefits of the two different construction methods.

1.2 Land Use and Work Permits

A Land Use Permit (LUP), issued by the MECP under the PPCRA is required to allow the Project's transmission line easement (ROW) to exist within a protected area. A Work Permit (WP), issued by the MECP under the PPCRA, is required to clear vegetation, develop or upgrade any temporary roads or watercourse crossings within a protected area. This DPP provides detail to support NextBridge's permit applications for proposed Project activities in Kama Cliffs CR; these applications will be submitted separately, but will refer to this document for construction and schedule details.

In order for LUP or WP to be issued for protected areas crossed by the Project, amendments to individual PP and CR Management Plans and/or Statement of Conservation Interest (SCI) are required under Section 20 and 21 of the PPCRA (as described in Section 2), to allow the development of Project infrastructure within the respective protected area boundaries. This process was triggered by the approval of the Project's Environmental Assessment (EA) by MECP in March 2019.

2 PPCRA SECTION 21 CONDITIONS OF APPROVAL

Section 20 and 21 of the PPCRA (2006) outline the conditions under which new utility corridors may be developed in protected areas. Section 21 outlines the conditions of approval, specifically: that there are no reasonable alternatives, that lowest cost is not the sole or overriding justification, that environmental impacts have been considered and that all reasonable measures will be undertaken to minimize effects. An amendment or an administrative update to each PP management plan, interim management statement, or SCI for each CR is required for MECP to issue work and land use permits in areas where the Project crosses protected areas.

Sections 20 and 21 of the PPCRA are summarized as follows:

Section 20 (2) Utility corridors:

(2) Subject to the policies of the Ministry and the approval of the Minister, with or without conditions, utility corridors, including but not limited to utility corridors for electrical transmission lines, are permitted in provincial parks and conservation reserves. 2006, c. 12, s. 20 (2).

Conditions for approval, resource access road, etc.

(3) In addition to the conditions in section 21, in approving a resource access road or trail or a utility corridor, the Minister must be satisfied that when the road, trail or utility corridor is no longer required for the purpose for which it was approved or will not be used for a period of five years or more,

(a) the road, trail or utility corridor will be closed and effective measures will be taken to prevent its use; and

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(b) rehabilitation and removal of infrastructure will be undertaken at the direction of the Minister. 2006, c. 12, s. 20 (3)

Section 21 – Conditions of Approval:

In approving the development of a facility for the generation of electricity under subsection 19 (2), (3) or (4) or approving a resource access road or trail or a utility corridor under section 20, the Minister must be satisfied that the following conditions are met:

1. There are no reasonable alternatives.
2. Lowest cost is not the sole or overriding justification.
3. Environmental impacts have been considered and all reasonable measures will be undertaken to minimize harmful environmental impact and to protect ecological integrity. 2009, c. 12, Sched. L, s. 21.

2.1 PPCRA Section 21 Route Alternatives Assessment

Project infrastructure crosses through portions of 9 protected areas, as outlined in Table 1. Alternative routing to avoid protected areas to the greatest extent possible was undertaken during the engineering and design and environmental assessment (EA) phase(s), as outlined in the Project's Amended EA Report (Golder, 2018a). The initial alternatives assessment included consultation and engagement with Indigenous communities, regulatory agencies, property owners, interest holders, Crown interests and the general public. A number of alternative routes, including one that avoided PP and CR, were evaluated against the PPCRA Section 21 Conditions of Approval for their potential impact on social (i.e.: proximity to communities or other receptors) and environmental values, with the understanding of Section 21 (2) that lowest cost cannot be the sole or overriding justification for the final routing.

To re-address MNR concern(s) that the final route crossed sensitive environmental features in PP and CR, additional route alternatives assessments were completed, as outlined in Section 3.3.1.6 and Appendix 3-1-B and 3-II of the Amended EA report (Golder, 2018a). Six (6) alternative routes, with new start and end points that avoided PP and CR were compared against a set of indicators, with the focus of determining the best compromise or balance of environmental and/or social impacts (i.e.: aligning the ROW with existing linear infrastructure, avoiding greenfield construction, avoiding communities) and construction feasibility. The comparative evaluation of routes was completed using the method described in Appendix 3-I and discussed in Section 3.3.2 of Appendix 3-II of the Amended EA report (Golder, 2018a). This assessment concluded that the final approved route remains the best balance of assessment criteria.

The final/approved route was selected not solely or primarily due to lower cost, but because it was determined that there are no reasonable alternatives that concentrate linear infrastructure, minimize new access development, limit greenfield disturbance(s). The final/approved route therefore has the smallest permanent Project footprint and minimizes potential environmental and social impacts to the greatest extent possible.

Results of the alternatives assessments for Kama Cliffs CR are summarized in Section 2.1.1, to demonstrate compliance with the PPCRA Section 21 Conditions of Approval.

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Table 1: Protected Areas Crossed by the OEWTL Project.

Workfront	Protected Area Name	Number of Towers	Approx. Project Footprint within Protected Area (ha)
1	Ouimet Canyon PP	0	0
2	Black Sturgeon River PP	2	7.8
3	Ruby Lake PP	1	2.1
3	Kama Cliffs CR	11	32
3, 4	Gravel River CR	22	56.5
4	Gravel River PP	2	5.4
8	Kwinkwaga Ground Moraine CR	0	7.0
9	Pukaskwa River PP	2	4.0
10	Nimoosh PP	2	11.1

2.1.1 PPCRA Section 21 Compliance for Kama Cliffs CR

Four (4) route alternatives were assessed for Kama Cliffs CR; the final route was selected in compliance with PPCRA Section 21 Conditions of Approval. The approved route has the shortest length and smallest overall footprint, and parallels an existing utility corridor, which concentrates operations and maintenance activities for both transmission lines, and their associated disturbances, to a single area.

The approved route will result in the smallest amount of greenfield disturbance and has the lowest potential to impact recreational activities in the CR. Based on the results of the alternative route assessment(s) completed for the Project, which considered potential social and environmental impacts, the final route remains the best route in consideration of Section 21 Conditions of Approval. Lowest cost was not the sole or overriding justification for selection of the final/approved route through the CR.

2.2 Mitigation for Working within Protected Areas

The following general measures for working within protected areas were outlined in the Project CEPP and Amended EA Report (Golder, 2018a):

- Signage will be posted at unauthorized entry points to the CR created by construction access, warning the public of work activity and directing users to the nearest authorized access point;
- No blasting will occur near operating campgrounds, Ontario Trail Network trails or canoe routes on weekends and holidays beginning May Long weekend and ending Labour Day weekend, inclusive;
- Warning signs will be placed 150 m upstream and 100 m downstream of water crossings on scheduled waterways during construction;
- Vegetation clearing within a minimum of 90 m around Category A canoe routes (i.e., Pukaskwa River canoe route, White River canoe route and Dog River canoe route) and their associated portage trails will be limited to where necessary for safety. Compatible vegetation (e.g., below 2 m in height) will be retained where practicable;
- Vegetation clearing within a minimum of 30 m around Category B canoe routes (i.e., Michipicoten River canoe route and Magpie River canoe route) and their associated portage trails will be limited to where necessary for safety. Compatible vegetation (e.g., below 2 m in height) will be retained where practicable;

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- Vegetation clearing around a canoe route or portage trail will be limited to where necessary for safety and compatible vegetation (e.g., below 2 m in height) will be retained where practicable to meet regulatory requirements and minimize visual impacts from activities;
- The Project shall not block or obscure portage trails or recreational access roads on either side of the ROW (e.g., no stockpiled vegetation or soils at the portage access points);
- During construction, keep portages clear of vegetation debris and maintain the existing grade of the portage such that it remains clear, safe and ready for recreational users; and,
- No disturbance of portages outside of the Project Site and access roads will be permitted.

Section 10 and Table 10 outline the Project's EA Commitments that relate to construction and operations in protected areas.

3 OVERVIEW OF KAMA CLIFFS CR

Kama Cliffs CR is located along the north shore of Lake Superior, within MNR's Nipigon District, approximately 18 km east of Nipigon. Kama Cliffs CR includes 3,713 hectares (ha) of Crown land within ecoregion 3W and ecodistrict 3W-3, which is characterized by mature mixed boreal forest and steep geological features. This area is primarily represented by the Pays Plat and Red Rock First Nations communities.

The primary aesthetic feature within Kama Cliffs CR is a vertical bedrock exposure with heights exceeding 200 meters. Prior to the development of the Ontario Living Legacy Land Use Strategy (OLL), the area had a recognized snowmobile and hiking trail system that remains within the CR, and the smaller Kama Hills Nature Reserve PP (see Attachment A, Figure A-1). Kama Cliffs CR also supports opportunities for fishing, snowmobiling, ice climbing and provides scenic viewpoints over Lake Superior.

The 13 km Lower Kama Hiking Trail takes hikers to the top of the cliffs overlooking Kama Point and Lake Superior as well as the Jackpine River Lookout. The 8 km Upper Kama trail includes sections within Kama Hills Nature Reserve PP and is known to local ice climbers as Powerline Falls (Mazukama Falls). This hike has waterfalls, streams, mature cedar forest and scenic views over Lake Superior (see Attachment A, Figure A-1, Overview Map).

The Jackpine River is located on the eastern boundary of the Kama Cliffs CR and supports a sport fishery for a spring run of steelhead trout (*Oncorhynchus mykiss*), which peaks between April and May. The Jackpine River also contains a spawning run of Lake Superior brook trout (*Salvelinus fontinalis*) between late September and October, as well as a pink (*O. gorbuscha*) and coho salmon (*O. kisutch*) run that typically goes from late August into October.

3.1.1 Policy and Management of Kama Cliffs CR

Provincial parks policy has evolved since the establishment of Algonquin Park in 1893. Today, protected areas are governed by three key tools: the PPCRA (2006), the Ontario Provincial Parks Policy Statement (1978), and Ontario Provincial Parks: Planning and Management Policies (1992). The latter was amended by the Ontario's Living Legacy Land Use Strategy (MNR, 1999) as a result of the Lands for Life planning process.

The goal of establishing CR lands is to protect natural heritage values on public lands while permitting compatible land use activities. The establishment of CRs ensures representation of the province's ecosystems and natural features, and provides opportunities for recreation, natural and cultural heritage appreciation and scientific study. Conservation reserves complement provincial parks in protecting representative and specific landscape features, such as the geological formation(s) of the Kama Cliffs.

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Most recreational activities and non-industrial commercial activities that have traditionally occurred in the CR area may continue provided that the use does not impact upon the natural features requiring protection. Recreational hunting and fishing are permitted uses within all new CRs as identified through the OLL Land Use Strategy. The Ontario Government launched the OLL Land Use Strategy to provide direction for future planning and management of protected areas on July 16th 1999 (OLA, 2005). This resulted in the protection of 39 million hectares of Crown land in portions of northern Ontario, including the development of 378 parks and conservation reserves; Kama Cliffs CR was established in 2000 a result of this protected area expansion.

Current non-industrial commercial use includes 2 traplines (NG116 and NG118), 2 bear management areas and 4 baitfish blocks within portions of the CR. In addition, 10 hectares of land associated with aggregate permit MTO 500 204 for Forest Reserve F2234 will revert to the Crown and be included into the CR lands on expiry. Any new uses and commercial activities associated with the CR, such as the development of the OEWTl Project utility corridor, will be considered on a case by case basis, and must pass a 'test of compatibility' to be acceptable. Proposals for future new uses and commercial activities associated with them need to follow guidelines that are set out by the PPCRA (2006, S.O. 2006, c.12), specifically, utility corridors and conditions for approval, resource access roads, and their associated subsections (Ontario, 2006).

As described in Section 2, OEWTl Project development within the CR will require specific licences to allow the ROW easement (LUP), temporary access road and waterbody crossings (WP) and clearing activities (FRL) where the Project is within the CR boundary.

3.1.2 Kama Cliffs CR – Statement of Conservation Interest (SCI) Summary

Management direction for the Kama Cliffs CR is expressed through a Statement of Conservation Interest (SCI), established in 2001 under the provisions of the PPCRA. The Kama Cliffs CR SCI outlines natural heritage values, representation targets and activities that are permitted within the CR. The four (4) key representation targets and values to be protected within Kama Cliffs CR, as described in the SCI (2001) are:

- **Life Sciences:** protection of provincially significant fire-origin mature mixed wood forest on 'mesa-cuesta' plateau terrain.
 - The steep bedrock cliffs also provide potential nesting and foraging habitat for peregrine falcons and high potential for species recovery activities, in accordance with the Peregrine Falcon Recovery Strategy (Ontario Peregrine Recovery Team 2010).
- **Earth Sciences:** protection of steep vertical cliffs and colluvium of the Sibley Group Kama Hill Formation.
- **Cultural Resources:** Pays Plat First Nation have indicated that there are some ceremonial lakes where band members go for healing purposes.
- **Recreational Opportunities:** protection and maintenance of recreational opportunities including but not limited to hiking and access to scenic viewpoints over Lake Superior, fishing, snowmobiling, hunting, canoeing and wildlife viewing (as described above, in Section 3.1).

4 PROJECT INTERACTION(S) WITH KAMA CLIFFS CR

4.1 Construction Access Options: Background and Context

The Project ROW is located at the height of land, on top of the namesake Kama cliffs, next to the existing Hydro One transmission line (Attachment A, Figure A-1). The steep, rocky terrain presents significant challenges for access, construction and reclamation. Consequently, concerns have been raised by MECP and there has been some discussion with respect to access development within the CR and associated commitments. Two (2) options for access have been tabled, as outlined below.

During the Project EA process, MECP expressed concern with respect to the proposed access road within the CR, in particular, this concern focused on potential Project impact(s) to the character of the CR, conflicts with recreational use, and protection of the Mazukama Falls area/trail within Kama Hills Nature Reserve PP. In response to these concerns EA Commitment 1038 was drafted to eliminate the segment of road access to Structure B149, near the west end of the CR, and to construct Structure B149 via helicopter. EA Commitment 1038 states:

NextBridge commits to install the structure at this location (the Kama Cliffs CR) via *helicopter and to remove the access road overlapping the Mazukama Falls area from the Project footprint.*

NextBridge subsequently removed the proposed road segment to Structure B149 and re-designed the proposed road access to avoid Kama Hills Nature Reserve PP, recreational trails and/or Mazukama Falls (see Attachment A, Figure A-1, Overview Map). In subsequent discussions with MECP, it became clear that the framing or interpretation of EA Commitment 1038 was not consistent with the intent of MECP to avoid all road construction in the CR. MECP has since indicated (email correspondence to NextBridge August 28, 2019) that their planners have significant concerns with the revised access plan for Kama Cliffs and are reviewing the EA documentation.

In response to these concerns, NextBridge has tabled two (2) options for construction access, which are outlined in detail below:

1. **Conventional Road Access Option** – approximately 8 km (10.5 ha) of temporary access road from Highway 17 to the top of Kama Cliffs is required mobilize equipment and workforce to build 10 of the 11 structures within the CR (see Attachment A, Figure A-1).
 - o **Note:** Construction of Structure 149 would be via helicopter.
2. **Helicopter Access Option** – to avoid the majority of road construction within the CR, equipment and workforce could be mobilized by helicopter. This is the preferred option, and in this scenario, limited temporary road access would still be required within the approved ROW between structures B150-B158 (see Attachment A, Figure A-1 and Figure A-2).
 - o **Note:** Using helicopter access exclusively to build the Project within the Kama Cliffs CR is preferred, as this would reduce the Project footprint by 10.5 ha, from 33 ha to 22.6 ha. However, the Project was tendered to the Ontario Energy Board (OEB) based on NextBridge's understanding that conventional road access would be permitted within the CR, except at Structure B149. There is a significant cost delta between the two options, with helicopter access being considerably higher in cost. **NextBridge is therefore requesting clear and final written direction from MECP on the requirements and/or restrictions on access development within the CR in order for NextBridge to execute the requirements and consider the cost and schedule impact, and, thereafter, notify the OEB in its next quarterly report of the construction cost and schedule impact.**

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4.1.1 Environmental Features and Interactions: Road Access Option

The Project ROW within Kama Cliffs CR includes eleven (11) permanent transmission towers ('Structures' B148 to B158) constructed on a cleared ROW footprint of approximately 23 ha. Construction of approximately 8 km (or 10.5 ha) of new temporary road, including six (6) temporary waterbody crossings is required to access the 11 structure sites in the CR (Attachment A, Figure A-4). The total Project footprint within the CR would be approximately 33 ha if standard construction road access is permitted and developed.

Table 2 and Figures A-5 to A-7 in Attachment A describe the known environmental features located within CR boundaries and their interaction (or avoidance) of the Project footprint associated with the conventional road access option, as outlined below:

- The Project ROW (23 ha) is within an area of high bat maternity roost potential (Table 2, Attachment A, Figure A-6 and A-6B). In addition, three (3) candidate bat hibernacula sites BH-Ref05, BH007 and BH008 occur in the CR [REDACTED]
- Two (2) Bear Management Areas cross into the CR: NG-21A-016 and a small portion of NG-21A-051. The entire ROW and access route is within NG-21A-016 (see Attachment A, Figure A-6).
- Two (2) seasonal concentration areas for colonial nesting bird breeding habitat (Polygons H00573 and H00566) overlap with the project by approximately 0.8 ha (see Attachment A, Figure A-5). Based on the steep topography in these areas, these areas likely support cliff nesting species, such as the peregrine falcon (*Falco peregrinus*).
 - Structure site B150 falls partially within Polygon H00573 (Table 2, Attachment A, Figure A-5).
- Two Species of Conservation Concern Habitat (SOCCH) polygons for raptors (H1956 and H1957) are located within the southwest corner of the CR above Highway 17. These are located well away from the Project do not interact with the Project footprint (Attachment A, Figure A-5).
- A portion of one (1) Critical Landform Vegetation Association (CLVA-41, 0.4 ha) representing 'Glaciofluvial Outwash/Exposed Rock' overlaps with the Project ROW east of Structure B158; 0.1 ha of the CLVA is potentially impacted (Table 2, Attachment A, Figure A-7).
- One rare vegetation community polygon (B-RVC-TSL-1) representing 'Cliffs and Talus Slopes' (0.9 ha) crosses the ROW west of Structure B158; 0.3 ha of this habitat type interacts with the ROW (Table 2, Attachment A, Figure A-7).
- One (1) Area of Natural and Scientific Interest (or ANSI) representing steep cliff terrain (likely associated with peregrine falcon recovery/habitat) is located within the southwest portion of the CR but does not interact with the ROW or access road. ANSI are areas that display distinct and significantly representative geological or ecological features (Attachment A, Figure A-7).
- Six (6) waterbody crossings are required if the conventional road access option is approved (See Table 2, Section 4.2.2 for details, and Attachment A, Figure A-4).
- Two (2) crossings (6600.00 and 6610.01) will be required to access the ROW if the helicopter access option is selected. Details on waterbody crossings are in Section 4.1.2.3 below.
- The Discontinuous Distribution Range (DDR) of the Lake Superior Coastal Range (LSCR) herd is found within the CR; 33 ha is overlapped by the ROW, 4 m offset, and temporary new road access.

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The ROW and transmission line cross the Jackpine River and exit the eastern boundary of Kama Cliffs CR between towers B158 and B159. Towers B158 and B159 are set well back (over 200 m) from the Jackpine River; therefore, construction will not encroach on the river or riparian area. Stringing of conductor between Tower B158 and B159 can also be completed without interaction with, or impacts to the Jackpine River. Access to Tower B159, located east of the Jackpine River, will be from an access road outside of the CR to the east.

4.1.2 Environmental Features and Interactions: Helicopter Access Option

The (preferred) helicopter access option for Kama Cliffs CR results in a Project footprint of approximately 22.5 ha (ROW only), which represents a reduction of 10.5 ha compared with the conventional road access option. The helicopter access option requires the development of temporary access road between structures B150-B158; however, this falls within the approved/cleared ROW and is therefore not considered as additional Project footprint (i.e.: double counted as ROW and road areas separately).

Table 2 and Figures A-5 to A-7 in Attachment A describe the known environmental features located within CR boundaries and their interaction (or avoidance) of the Project footprint associated with the helicopter access option, as outlined below:

- The Project ROW (23 ha) is within an area of high bat maternity roost potential (Table 2, Attachment A, Figure A-6 and A-6B).
- Three (3) candidate bat hibernacula sites BH-Ref05, BH007 and BH008 occur in the CR [REDACTED] (see Section 4.1.2.1 for details).
- Two (2) Bear Management Areas cross into the CR: NG-21A-016 and a small portion of NG-21A-051. The entire ROW and access route is within NG-21A-016 (see Attachment A, Figure A-6).
- Two (2) seasonal concentration areas for colonial nesting bird breeding habitat (Polygons H00573 and H00566) overlap with the project ROW by approximately 0.8 ha (see Attachment A, Figure A-5). Based on the steep topography in these areas, these areas likely support cliff nesting species, such as the peregrine falcon (*Falco peregrinus*).
 - Structure site B150 falls partially within Polygon H00573 (Table 2, Attachment A, Figure A-5).
- A portion of one (1) Critical Landform Vegetation Association (CLVA-41, 0.4 ha) representing 'Glaciofluvial Outwash/Exposed Rock' overlaps with the Project ROW east of Structure B158; 0.1 ha of the CLVA is potentially impacted by the ROW (Table 2, Attachment A, Figure A-7).
- One rare vegetation community polygon (B-RVC-TSL-1) representing 'Cliffs and Talus Slopes' (0.9 ha) crosses the ROW west of Structure B158; 0.3 ha of this habitat type interacts with the ROW (Table 2, Attachment A, Figure A-7).
- Two (2) water body crossings (6600.00 and 6610.01) will be required to access the ROW if the helicopter access option is selected. Details on waterbody crossings are in Section 4.1.2.3 below.
- The Discontinuous Distribution Range (DDR) of the Lake Superior Coastal Range (LSCR) herd is found within the CR; 22.5 ha overlaps with the ROW and 4 m offset.
- Two Species of Conservation Concern Habitat (SOCCH) polygons for raptors (H1956 and H1957) are located within the southwest corner of the CR above Highway 17. These are located well away from the Project do not interact with the Project footprint (Attachment A, Figure A-5).

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- One (1) Area of Natural and Scientific Interest (or ANSI) representing steep cliff terrain (likely associated with peregrine falcon recovery/habitat) is located within the south west portion of the CR but does not interact with the ROW or access road. ANSI are areas that display distinct and significantly representative geological or ecological features (Attachment A, Figure A-7).

Table 2: Summary of Environmental Features and Interactions for Road Access and Helicopter Access Options in Kama Cliffs CR.

Map Label / Feature ID	Feature	Total Area Within CR (ha)	Area Impacted by ROW (Helicopter and Road Access Options)	Area Impacted by Temporary Road Access Only
Kama Hill	Area of Natural and Scientific Interest (ANSI)	39.1	0.00	0.00
BH-Ref05 Candidate ¹	Bat Hibernacula		See Section 4.1.2.1	
BH007 Candidate	Bat Hibernacula			
BH008 Candidate	Bat Hibernacula			
High	Bat Maternity Roost Potential	34.2	12.0	0.6
NG-21A-012	Bear Management Area	126.9	0.00	0.00
NG-21A-015	Bear Management Area	0.03	0.00	0.00
NG-21A-016	Bear Management Area	2758.5	22.7	10.5
TR-21A-051	Bear Management Area	827.2	0.00	0.00
N/A	Discontinuous Distribution Caribou Range	3712.6	22.7	10.5
H00573	Seasonal Concentration Area – Colonial Nesting Bird Breeding Habitat	19.4	0.8	0.00
H00566	Seasonal Concentration Area – Colonial Nesting Bird Breeding Habitat	60.2	0.84	0.00
H01217	Significant Habitat - Bird Nest - Raptors	11.3	0.00	0.00
H01816	Significant Wildlife Habitat – Waterfowl Nesting Area	21.1	0.00	0.00
B-RVC-TSL-1	Vegetation - EAS Rare Vegetation Community - Cliffs and Talus Slope	0.9	0.32	0.00
CLVA-41	Vegetation - CLVA Landform: Glaciofluvial Outwash Vegetation: Exposed Rock	0.4	0.11	0.00
N/A	Wetlands	28.7	0.00	0.00
H01958	Species of Conservation Concern Habitat (Wildlife)	0.00	0.00	0.00
H01957	Species of Conservation Concern Habitat (Wildlife)	8.7	0.00	0.00
H01956	Species of Conservation Concern Habitat (Wildlife)	0.4	0.00	0.00

4.1.2.1 Bat Habitat

Candidate bat hibernacula polygons BH007 and BH008 are found within Kama Cliffs CR [REDACTED]. These sites are located outside of the Project ROW, but within 200 m of the Project footprint (Tables 2 and 3, and Attachment A, Figures A-6, A-6B). In December 2019, the OEWTLP Project received an Overall Benefit Permit (OBP) from MECP under the *Ontario Endangered Species Act, 2007* for the development of the Project within or within proximity to caribou and bat habitat (Permit #: NR-C-001-19).

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The OBP includes candidate hibernacula sites BH007 and BH008 (BH-HRef01 was not carried forward into the OBP due to Golder survey results indicating low to no potential use) (NextBridge 2019 b,c; Golder 2018c). The NextBridge OBP application (NextBridge, 2019c) provides additional detail and information on these sites and the OBP outlines the specific conditions, timing and/or mitigation requirements for working within bat maternity roosting habitat or near hibernacula (e.g.: restrictions on work activities or timing). Acoustic monitoring at BH007 noted possible-low use, with (3) three recorded passes of little brown myotis and 122 undifferentiated high frequency calls which could be any of the three identified SAR bat species. BH007 is located [REDACTED]

[REDACTED], [REDACTED]. Acoustic monitoring was not conducted at BH008 as the site was deemed to be inaccessible during the Amended EA. Although BH008 is an unconfirmed candidate site, it has been conservatively carried forward as an active site in the permitting process.

Per conditions of the OBP, hand falling is required within the 200 m buffer of hibernacula sites BH007 and BH008 and clearing must be completed outside of the RAP (Sept 1 to May 30). No timing conflict with clearing of bat maternity roosting habitat is anticipated, as clearing will occur outside of the RAP (May 1 to July 31).

Table 3: Summary of Bat Hibernacula data from EWT Project OBP Application (Permit #: NR-C-001-19) for Kama Cliffs CR

Bat Hibernacula ID	Buffer Distance	Area of Cleared ROW within Buffer Area (ha)	Area of Access Road within Buffer Area but Outside of Cleared ROW (ha)		Total Footprint within Buffer Area (ha)	Percentage of the Buffer
			New Access	Upgrades to Existing Access		
BH007	0-100m (3.14 ha)	0.80	0	0	0.80	25%
BH008		0.66	0	0	0.66	21%
BH007	100-200m (9.42 ha)	1.35	0.14	0	1.49	16%
BH008		1.80	0.06	0	1.86	20%
Bat Hibernacula	Distance to Nearest Structure		Distance to Nearest Access Road (m)			
	Structure ID	Distance (m)				
BH007	[REDACTED]	[REDACTED]	[REDACTED]			
BH008	[REDACTED]	[REDACTED]	[REDACTED]			
Shaded cells indicate confirmed hibernacula.						

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4.1.2.2 Waterbody Crossings – Conventional Road Access Option

A total of six (6) waterbody crossings are required in Kama Cliffs CR if the conventional road access option is approved (See Table 4 and Attachment A, Figure A-4). All crossings are temporary clear-span structures.

4.1.2.3 Waterbody Crossings – Helicopter Access Option

Two (2) clear-span structures (6600.00 and 6610.01) will be required to develop road access on the ROW between structures B150-B158 to support helicopter construction (Table 4 and Attachment A, Figure A-4).

Table 4: Waterbody Crossings in Kama Cliffs CR

Access Option	Waterbody Crossing ID	Biophysical Habitat Data						Fish Habitat Value (Spawning/Nursery)			
		Crossing Type ^a	Ford Required (Yes/No)	Bank-full Width (m)	Bank-full Depth (m)	Wetted Width (m)	Wetted Depth (m)	Trout, White-fish	Northern Pike	Walleye, Perch	Forage Species
Access Road	301.00	Clear Span	Yes	-	-	-	-	-	-	-	-
Access Road	302.00	Clear Span ^b	Not Likely	-	-	-	-	-	-	-	-
Access Road	303.00	Clear Span ^b	Not Likely	-	-	-	-	-	-	-	-
Access Road	305.00	Clear Span ^b	Not Likely	-	-	-	-	-	-	-	-
Road & Helicopter Access	6600.00	Clear Span	Yes	3	2	2.5	1.5	Low/Low	Low/Low	Low/Low	Low/Low
Road & Helicopter Access	6610.01	Clear Span ^b	No	0.5	0.31	0.45	0.17	Low/Low	Low/Low	Low/Low	Moderate / Moderate

Notes:

^a All crossing types are temporary.

^b Crossing types changed to a clear span due to lack of biophysical information at the crossing location.

5 CONSTRUCTION ACTIVITIES AND SCHEDULE

5.1 Proposed Construction Timing

Proposed construction timing for Kama Cliffs CR is outlined in Table 5 and 6; all work proceeds from west to east. Construction activities have been scheduled, as much as possible, to avoid or minimize potential effects to known sensitive areas and features, avoid Restricted Activity Periods (RAP) and peak visitor periods (typically June to September) as much as possible, while meeting the mandated Project In-Service Date (ISD). A screening exercise was completed to compare known environmental features within CR boundaries and the proposed construction schedule to RAPs (Section 5.2).

Table 5 and 6 show the proposed timing of activities for the conventional road access and helicopter access options respectively. Timing is similar for both options, with clearing and access development is planned to start in August 2020, followed by foundation installation, assembly and erection through the fall (to November, 2020). Stringing operations are scheduled for July 2021 (Table 5) with reclamation/road decommissioning planned for the fall of 2021.

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Table 5: Proposed Construction Timing for Conventional Road Access Option: Kama Cliffs CR (B148 to B158)

<u>Workfront 3: B148 to B158*</u>		
Construction Activity	Approximate Start Date*	Approximate Finish Date*
Clearing	August 15, 2020	September 1, 2020
Access	September 1, 2020	October 1, 2020
Foundations	September 20, 2020	October 10, 2020
Assembly	October 15, 2020	November 4, 2020
Erection	November 15, 2020	November 29, 2020
Stringing	July 1, 2021	July 11, 2021
Decommissioning and Reclamation	September 1, 2021	September 21, 2021

* Dates are estimates based on the current schedule and may be adjusted based on Project Construction requirements.

Table 6: Proposed Construction Activity Timing for Helicopter Access Option: Kama Cliffs CR (B148 to B158)

<u>Workfront 3: B148 to B158*</u>		
Construction Activity	Approximate Start Date*	Approximate Finish Date*
Permitting / Development of Fly Yard	June 1, 2020	August 31, 2020
Clearing	August 15, 2020	September 1, 2020
Access	N/A	N/A
Foundations	September 20, 2020	October 25, 2020
Assembly	October 1, 2020	October 21, 2020
Erection	November 15, 2020	December 5, 2020
Stringing	July 1, 2021	July 17, 2021
Decommissioning and Reclamation	August 1, 2021	October 15, 2021

* Dates are estimates based on the current schedule and may be adjusted based on Project Construction requirements.

5.2 Restricted Activity Periods

Table 7 outlines the results of RAP screening against the proposed Project schedule for the key environmental features found within Kama Cliffs CR. The proposed August 2020 clearing start date for both access options (road or helicopter access) ensures that clearing work will fall outside of, or near the end of the RAPs for migratory birds, waterfowl, bat hibernacula and bat maternity roosting. Foundation installation, tower assembly and erection work will follow in the late fall 2020, with stringing operations occurring the following summer 2021. Stringing may overlap with RAPs for migratory birds in July 2021; however pre-construction nest sweeps will be completed to develop appropriate mitigation or avoidance strategies for active nest site(s) as required.

For the conventional road access option, adherence to recommended fisheries RAPs for instream works (i.e culvert installation) will not be possible. In addition, to date no biophysical data has been collected for 5 of the 6 required crossings on the conventional temporary road access option (Table 4). All crossings in Kama Cliffs CR will therefore be defaulted to temporary clear-span structures/bridges. The use of clear span structures avoids instream work and therefore, associated timing restrictions for the protection of fish and fish habitat.

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The NextBridge SOP for water crossing installation (NextBridge 2029c, Attachment B) describes biophysical assessments and the decision making process for the selection and timing of water crossings installations(s), in order to support MNRF Work Permit (WP) applications and Fisheries and Oceans Canada (DFO) RFR submissions. The SOP follows guidance provided by MNRF and DFO, as well as mitigation requirements outlined in the MNRF/DFO Protocol for the Review and Approval of Forestry Water Crossings (MNR, 2017). This process also supports the requirement for operational flexibility to install water crossings a designated low-risk sites outside of the recommended timing windows(s), as reviewed by DFO.

Although in-stream works are not anticipated for the installation of clear-span structures, a one-time (over and back) equipment ford across the channel may be required to install the bridge (refer to Section 5.3 for further details). A qualified fisheries professional will provide oversight to select the most appropriate fording location and implement additional mitigation as required.

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Table 7: Construction Timing and RAP Screening for Key Environmental Features

Natural Feature, Habitat, or Species	Timing Restrictions	Recommended Mitigation	Timing Conflict (Y/N) and Mitigation
Migratory birds	Migratory bird nesting period: April 15 to August 31	Avoid clearing activities during the migratory bird nesting period; recommended setbacks from nesting sites varies from 20 m to 300 m depending on the species	N – clearing scheduled for Fall 2020
Waterbodies	September 1 to June 20 (fall and spring spawning); and September 1 to July 15 (fall and spring extended spawning).	Avoid construction activities below the high-water mark (e.g., clearing vegetation, installing or removing equipment crossing structures or fill) during the restricted activity timing window	Y – 6 waterbodies are crossed by new temporary access road, defaulted to clear span to avoid fisheries timing conflicts (2 of these will still be required for the helicopter access option).
SWH – Bat maternity roost habitat	Roosting period: May 1 to July 31 Swarming period: August 1 to August 31 Rankings: <ul style="list-style-type: none"> ■ Known habitat: April 1-October 1 ■ High/moderate potential habitat: May 1 to July 31 ■ Low-no habitat potential: no timing restriction on clearing activities 	Avoid clearing activities during the maternity roosting period; refer to MECP Overall Benefit Permit (OBP) #: NR-C-001-19	N – clearing scheduled during August 2020
SWH – Bat hibernacula habitat	Hibernation period: September 1 to May 1	Refer to MECP Overall Benefit Permit (OBP) #: NR-C-001-19	Y – refer to MECP Overall Benefit Permit (OBP) #: NR-C-001-19 for conditions and mitigation.
SWH – Sharp-tailed grouse's lek	General mating season: March to June	Recommended setbacks from lek is 200 m all year round	N – no known grouse leks.
SWH – Amphibian breeding habitat (wetlands/woodlands)	Breeding period: March 15 to June 7 Hibernation Period: October 1 to March 15	Recommended setbacks from breeding sites varies from 30 m to 120 m depending on the type of habitat and species	N – no amphibian breeding areas anticipated; pre-construction surveys will confirm.
SWH – Raptor nesting sites	Nesting period: March 5 to August 31 <ul style="list-style-type: none"> ■ Bald eagle: March 5 to August 31 ■ Osprey: April 1 to August 15 ■ Northern goshawk: March to June ■ Cooper's Hawk: March to July ■ Sharp-shinned Hawk: April to July ■ Red-shouldered Hawk: March to July 	Recommended setbacks from a raptor nesting site varies from 50 m to 800 m depending on the species <ul style="list-style-type: none"> ■ minimum of 400 m radius buffer on bald eagle nesting site; ■ minimum of 300 m radius buffer on osprey nesting site; ■ minimum of 400 m radius buffer or 28 ha of suitable habitat in the SWH on northern goshawk nesting site; ■ minimum of 200 m radius buffer on barred owl nesting site; ■ minimum of 100 m radius buffer on broad-winged Hawk, cooper's hawk, great horned owl, red-tailed hawk, and long-eared owl nesting site; and minimum of 50 m radius 	N – no conflicts with known raptor nesting site(s) within the CR.

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		buffer on merlin and sharp-shinned hawk nesting site.	
SWH – Turtle breeding habitat	Nesting period: May 15 to July 15	Recommended setbacks from breeding sites varies from 30 m to 300 m depending on the type of habitat and species	N – no conflicts with RAP
SWH – Caribou nursery areas	Nursery areas period: <ul style="list-style-type: none"> ■ May 1 to July 14 (very low tolerance) ■ July 15 to September 15 (low tolerance) 	Avoid construction activities within 10 km of known or potential caribou high use areas	N – located outside of Category 1 caribou nursery area(s) and 10 Km buffer
SWH – Caribou winter use areas	Wintering period: December 1 to March 31	Avoid construction activities within 10 km of known or potential caribou high use areas	N – located outside of Category 1 caribou winter use area(s) and 10 km buffer
SWH – Caribou travel corridor	April and November	Avoid construction activities within 10 km of known or potential caribou high use areas	N – located outside of caribou high use area(s)
SWH – Moose wintering areas	Wintering period: November 1 to March 31	Avoid clearing activities within 300 m from a 3E ecodistrict (refer to Appendix 12-VIII of the amended EA Report)	N – clearing to be completed before November 1
SWH – Moose aquatic feeding areas	Aquatic feeding period: May 1 to June 30	Avoid clearing activities within 120 m from a known aquatic feeding area	N – Construction activities will occur outside of the aquatic feeding period.
SWH – Denning site	Denning period varies per species.	Recommended setbacks from denning sites varies from 20 m to 300 m depending on the species	N -no known denning sites within Project footprint.
Research Plots	-	Setback distances of 0 m, 50 m, 75 m, 78 m, 120 m, 150 m and 1,000 m and protection levels 1 (highest level of protection) to 5 (lowest level of protection).	N – no known Research Plots within Project footprint

5.3 Construction Details: Access Road

Approximately 7.9 linear km (totalling 10.5 ha) of new temporary road access, including six (6) temporary waterbody crossings will be required to access the ROW for construction of ten (10) of eleven (11) structures in Kama Cliffs CR (Attachment A, Figure A-4). As per EA condition 1038, the eleventh structure (B149) will be installed via helicopter. Road profiles are provided in Figure A-4B of Attachment A.

A helicopter program to access structures B148 to B158 will require selection and permitting of a fly-yard site (minimum 10 ha) to support tower assembly for helicopter operations (Table 6). Wherever possible, an existing laydown area, cleared site or area(s) suitable for fly-yard operations along the permitted and cleared ROW (outside of the CR) are preferred sites for fly yards. A 'S-64 Skycrane' helicopter would be used to transport large equipment, foundations materials and tower sections for erection. An 'A Star' or equivalent helicopter would be used for crew transportation for ROW clearing, geotechnical and foundations, erection and stringing activities. Access may still be required along the approved ROW between structures B150-B158 as necessary to support construction.

5.3.1 Waterbody Crossings

5.3.1.1 Waterbody Crossing Installation

The project uses existing access (roads/trails) wherever possible to support clearing and construction activities. The development of new (temporary) road access is also required, which will require installation of temporary waterbody crossings including clear-span bridges, culverts and snowfills. Procedures for crossing type selection, mitigation planning installation and monitoring, based on results of biophysical assessments and pre-construction surveys, are described in the NextBridge SOP for Crossing Installation (2019e, Attachment B), which has been reviewed and vetted by MNRF and the Department of Fisheries and Oceans Canada (DFO). Waterbody crossings will be installed, maintained, and decommissioned according to requirements for the protection of fish and fish habitat and riparian areas outlined in the Project CEPP (Golder, 2018a) and the NextBridge SOP. Additionally, any mitigation resulting from DFO Request for Review (RFR) submissions, as outlined in Letter(s) of Advice (LOA) issued for these crossings, will be adhered to.

Waterbody crossings within the Kama Cliffs CR are summarized in Table 4 and shown in Figure A-4 of Attachment A. All crossings were defaulted to a clear span to avoid the requirement for instream work. Procedures for installation of temporary clear span bridges are as follows:

- A qualified fisheries professional shall review the site and proposed installation procedures prior to installation, and augment mitigation plan(s) as required to prevent damage to fish habitat or riparian areas;
- Mobilize materials (e.g., rip rap, clear-span, footing, approach railings, granular fill) to work area and then stockpile at a location that is set back a suitable distance from the waterbody.
- Mobilize heavy equipment to work area and set up.
- Install and monitor erosion and sediment control measures, as required to prevent impacts to water quality.
- Prepare bridge abutment on one side of the proposed crossing by excavating the footing location and installing the abutment beyond the stream banks and above the high-water mark of the waterbody.

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- Equipment may ford the channel to mobilize the bridge if required:
 - Fording may only occur at a location approved by the Environmental Monitor (a site containing bedrock or boulder substrate is preferred).
 - Fording will be limited to a one-time event (over and back); equipment will be inspected to ensure it is clean and free of any leaks or drips. Disturbance to riparian vegetation will be minimized.
 - Install bridge components under the supervision of an Environmental Monitor, and according to BMPs for the protection of streambed, banks and water quality.
 - Restore banks as required to prevent erosion or sedimentation; leave any erosion and sediment control measures in place until site is stabilized.
 - Ensure all fueling and/or fuel storage is at least 100 m back from the stream channel.

5.3.2 Blasting

The Kama Cliffs CR is characterised by rugged, bedrock controlled topography covered by a layer of shallow mineral soil. As bedrock is close to the surface, there is limited soil management (stripping) and some blasting is required to establish construction access, particularly where surficial bedrock is present. To date no subsurface investigations have been conducted; therefore blasting locations have not yet been finalized. Limited blasting may also be required at some structures footprints to level the worksites for tower erection.

Project requirements for conducting blasting operations are detailed in the Blast Management Plan of the CEPP (Section 8.3 and Appendix L) (Golder 2018a). All blasting activities will be conducted in accordance with the Ministry of Labour's *Occupational Health and Safety Act (1990)*. Blasting plans will be developed by a qualified professional, with blast patterns designed to restrict or limit the total ground disturbance to only the area required for access and construction. Blasting delays (staggered detonation) and blast mats will be used to control noise and reduce fly rock associated with blasting activities, and the potential for impacts outside of the ROW corridor (see Blast Management Plan, Project CEPP (NextBridge, 2019)).

Identified blasting areas will be stripped of all overburden, snow or soil to expose the rock. The driller will mark a drill pattern and load the drilled holes in a manner designed to minimize fly rock, reduce sound levels, prevent over blasting and produce usable blast rock for road construction. All blasting material packaging will be disposed outside Kama Cliffs CR and Kama Hills Nature Reserve PP and according to regulatory requirements and best management practices.

Warning signage, notification(s) and standard blasting warning signals will be used to ensure safe blasting operations for the public. As clearing and access are currently planned to occur within peak park and CR use period (June-September), advanced notice (45 days) of construction activities to recreational uses through formal notification in local newspapers will be conducted, and no blasting will occur on weekends and holidays beginning May Long weekend and ending Labour day Weekend, inclusive (Table 10).

All blasting activities located near a waterbody will comply with applicable environmental guidelines and setbacks for use of explosives near watercourses, including Fisheries and Oceans Canada's Guidelines for Use of *Explosives in or Near Canadian Fisheries Waters* (Wright and Hopky 1998).

Blasting magazines will be located and managed as per stipulations outlined in the *Explosives Act* (1985), and no magazines will be located within CR boundaries. A federal Magazine Licence will be acquired for each magazine

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on the Project; associated permit requirements for security, access and inventory control shall be met. Decommissioning of blasting areas, is further described in Section 7.0.

5.4 Clearing Plan

Table 8 and Figure A-3 describe the proposed clearing methods and associated areas within Kama Cliffs CR, which totals approximately 20.4 ha for the ROW, and 10.7 ha for the access road. Clearing methods will be consistent with the commitments outlined in the Amended Environmental Assessment (EA) Report (Golder, 2018a) and in consideration of MECP feedback.

Wherever possible, mechanical harvesting methods are preferred to remove timber from the ROW and access roads. Retention areas are maintained in areas where vegetation does not represent a hazard to the transmission line or conflict with access roads or structure sites. Retention areas are covered by low and slow growing or ‘compatible’ vegetation (e.g., compatible with the operational standards for transmission lines and North American Electric Reliability Corporation (NERC) standards). Compatible vegetation is typically < 2 m height (or < 3 m mature height) and typically occurs in wet areas or locations where conditions do not support the growth of taller species. Non-Productive areas have no vegetation to remove, and include previously disturbed sites (e.g., existing roads) or grass dominated wetlands.

The practice of ‘stubbing’ or leaving stumps of mature or larger diameter timber will be completed in areas where mechanical clearing occurs to retain wildlife tree values, in accordance with the Hazard Trees and Ecological Integrity Best Management Practices Primer (V2.1) (Ontario Parks, 2018). All riparian areas are cleared by hand-falling. Woody debris (i.e. slash) will be retained on the ROW to provide fauna/flora structure and habitat to the extent possible while satisfying both safety requirements and NERC standards.

Table 8: Clearing Metrics for Kama Cliffs CR (see Attachment A, Figure A-3)

Clearing Method	ROW (ha) ¹	New Temporary Road Access (ha) ²
Mechanical/Mulch	16.4	9.8
Retention	2.9	0
Hand Fall	1.1	0.9
Totals	20.4	10.7
¹ Clearing of ROW would occur for both the conventional access road and helicopter options.		
² Additional clearing areas required, should the conventional road access option occur.		

6 ENVIRONMENTAL PROTECTION AND MITIGATION

The following sections describe site-specific mitigation for features that are not avoided/mitigated through application of RAPs (Table 7, Section 5.2) and how we plan to mitigate.

6.1 Pre-Construction Field Reconnaissance Approach

To protect known or discovered environmentally sensitive features and/or SWH at the site level, pre-construction environmental surveys will be completed by qualified Resource Specialists in advance of clearing or construction operations to identify and/or confirm sensitive features and guide the development and implementation of appropriate site-specific mitigation and monitoring protocols to be developed, as required, in consultation with MECP. Pre-construction environmental surveys shall focus on, but not be limited to:

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- Wetlands;
- CLVA and rare plants;
- Migratory birds/nesting areas;
- Waterfowl nesting areas;
- Known and potential bat maternity roosting habitat;
- Fish and fish habitat (for undocumented stream crossings, or to fill information gaps); and
- Other SWH features – amphibian breeding, reptiles, den sites, etc.

Where previously undocumented SWH or species are identified, these will be reported to the Valard Environment Lead to initiate avoidance and/or site-specific mitigation planning (if not addressed herein) and associated communications with the Owner, Construction Management and MECP. The Biologist/Resource Specialist will provide input on appropriate mitigation, work methods, travel routes and recommended buffer zones. In addition:

- Critical habitats and 'No-go' zones will be identified on site plans and environmental alignment sheets;
- Contingency plans, as outlined in the Project CEPP (NextBridge, 2019) shall be implemented, as appropriate;
- Access or structures may be adjusted away from previously unidentified or microhabitat features, streams or wetlands, if feasible;
- Work crews will be oriented and aware of work activity restrictions associated with SWH;
- 'No-go' zones will be clearly flagged in the field and monitored during construction to ensure work activities avoid identified habitat or features;
- Construction activities may be re-scheduled to avoid RAPs or additional mitigation measures, including construction monitoring, may be required to allow construction to proceed under certain conditions; and
- Approved mitigation measures, such as relocation of the species/feature (if feasible), may be implemented proactively if complete avoidance or work outside of the RAP or recommended buffer zone is not possible.

Throughout construction, Valard's Environmental Management System (EMS) process shall be implemented, which aims to:

- Identify and document critical or sensitive habitats, species or features (known or discovered during pre-construction surveys);
- Screen against construction work plans (based on the 3 week look ahead schedule);
- Identify potential work or timing conflicts;
- Schedule or re-schedule work according to site conditions and/or timing windows;
- Consult with MECP on proposed mitigation, monitor work and implement additional mitigation as required; and
- Document and report to MECP results of any additional mitigation and/or monitoring programs.

6.2 Mitigation Measures for Waterbody Crossings

The proposed installation of waterbody crossings in Kama Cliffs CR (as outlined in Table 4 for both access options) will follow mitigation, reclamation, monitoring and decommissioning protocols as outlined in the OEWTl Project CEPP (Section 5.2.1), procedures and BMPs outlined in the Nextbridge SOP for water crossing selection and installation (NextBridge, 2019e, Attachment B), and any mitigation outlined in the Letters of Advice (LOA) issued by DFO for the crossing sites.

To implement a site-specific mitigation approach, a pre-construction assessment and monitoring of construction at waterbody crossings will be completed under the direction of a qualified fisheries professional as per the SOP (Nextbridge 2019e) and EA requirements. The assessment and monitoring shall consider:

- Biophysical assessment results for the crossing site, including upstream and downstream habitat values;
- Environmental risk based on installation timing, conditions and proposed crossing methods;
- Specific equipment, materials, construction methods, and Environmental Monitoring requirements to complete the work,
- Requirements for crossing site isolation (dam and pump) and fish salvage operations;
- Requirements for erosion and sediment control measures and site restoration;
- Maintenance of water quality and monitoring requirements.

Pre-construction biophysical assessments and mitigation planning for waterbody crossing installation(s) are carried out under the direct supervision of a qualified fisheries professional to avoid impacts to fish and fish habitat and downstream water quality; please refer to Attachment B for details. Stringing operations shall avoid any contact with the bed or banks of the Gravel River.

6.3 Clearing and Vegetation Management

As outlined in Section 4.2, the Project ROW crosses two (2) vegetation polygons within the Kama Cliffs CR (Attachment A, Figure A-7):

- B-RVC-TSL-1 -Vegetation - EAS Rare Vegetation Community - Cliffs and Talus Slope
- CLVA-41 - Vegetation - CLVA Landform: Glaciofluvial Outwash Vegetation: Exposed Rock

Given that both locations are characterized by exposed rock, and located within handfall/retention zones (riparian area) identified for the right bank of the Jackpine River (Attachment A, Figure A-3), disturbance due to ROW clearing is anticipated to be nil to minimal at these sites and potential Project impacts will be minimized. Pre-construction field verification and flagging of these features shall be completed to ensure clearing crews are aware of and avoid these sites as much as possible.

6.4 Erosion and Sediment Control for Construction Activities

Standard or site-specific erosion control measures will be implemented for all work within Kama Cliffs CR, as required. This may include but is not limited to the following:

- **Preservation of existing vegetation** – retain compatible (low-growing) vegetation at erosion-prone sites where practical. Limit clearing to the minimal area required to complete the proposed work(s);

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- **Just-in-Time Grading** – grade only in areas needed for immediate construction activities. This will leave the existing ground cover in place for as long as possible, minimizing the time that soil is exposed to potential erosion; seeding or mulching should be done as soon as possible once the work is completed to re-establish ground cover;
- **Shut Down Considerations** – inspect and maintain erosion and sediment control during shut down periods related to seasonal stoppages, weather-related delays or other issues. Stabilize erosion prone sites prior to planned shut-downs to prevent sediment mobilization;
- **Slope Treatments** – surface roughening is a slope treatment in which depressions or grooves are provided on slopes to help trap seed, reduce runoff velocity and increase infiltration;
- **Seeding** – carried out to stabilize disturbed areas and to establish a temporary cover. Seeding may be either a temporary or permanent practice;
- **Erosion Control Blankets** – typically used on short, steep slopes where there is a high erosion potential and slow vegetation establishment. They typically consist of degradable netting enclosed straw, wood fibre or coconut fibre;
- **Grass lined swales** – shaped sloped depressions constructed to convey run-off. The drainage area should be 2 ha or less and a grade of 1-5%;
- **Buffer strips** – used around construction site perimeters, above steep slopes and around protected/sensitive areas. Often accompanies silt fencing;
- **Silt fences** – used for controlling sedimentation from sheet and/or rill erosion on relatively short slopes; should not be used where the flow exceeds 0.03 m³/s and should not be used to accommodate a drainage area of more than 0.1 ha per 30 m of fencing;
- **Check dams** – temporary or permanent berms used to divert channel runoff to a desired location (not a watercourse or wetland). They should be limited to drainage areas of less than 1 ha and channel slopes of less than 10%;
- **Sediment traps** – temporary sediment containment installations constructed by excavating and/or embanking an area and diverting sediment laden run-off to said area. Outlets must be stabilized and sediment should be removed when it reaches half the design depth of the trap. Drainage area should be less than 2 ha and storage volumes should be at least 25 m³/ha; berms should not be more than 1.5 m high with a minimum top width of 1.5 m and slopes no steeper than 3:1;
- **Inlet protection measures** – considered the last line of defense; installation consists of a permeable barrier installed around an inlet to reduce sediment content in the water before it enters the inlet; and
- **Dewatering** – happens most often when dealing with water during a diversion event; which may be associated with culvert installations, etc.

7 DECOMMISSIONING ACTIVITIES AND SCHEDULE

Decommissioning and reclamation activities will commence after stringing activities and commissioning (QA/QC) as outlined in Tables 5 and 6 for each construction access option: new temporary access road, or helicopter, respectively.

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In all reclamation efforts, crews will clean up debris and re-contour structure sites to ensure positive drainage. Any berms over 1 m and steep excavated slopes will be re-sloped to a stable angle of repose. Any imported gravel for overland roads will be removed and taken to appropriate disposal sites. Geotextile fabric and corduroy material will also be removed. All construction materials will be removed from of the CR. Areas prone to erosion will be seeded with an MECP approved, certified seed mix/native cover crop (e.g., cereal crop) as soon as feasible after construction; conifers may be planted at select locations to enhance site recovery, in consultation with MECP.

As per EA Commitment 131, the following additional mitigation measures will be in place for construction and reclamation activities in the CR:

- Construction equipment will arrive on the Project Site clean (i.e., free of soil and vegetative debris) and be inspected by an Environmental Monitor before entering the park (as per guidance provided in the *Clean Equipment Protocol for Industry* (Halloran *et. al*, 2013).
- Grubbing and stripping will be limited to the transmission structure locations (tower and crane pad sites) and temporary access roads.
- Areas prone to erosion will be seeded with an MECP approved, certified seed mix/native cover crop (e.g., cereal crop) as soon as feasible after construction;
- Conifers will be planted as required at any Project-related disturbance off the transmission line ROW in consultation with MECP.
- Herbicides will not be used during construction or post-completion maintenance. Also, herbicides will not be used within 60 meters of any protected areas near the park boundary.

Considerations for each access option are outlined below.

7.1 Reclamation: Road Access Option

The decommissioning and reclamation program associated with the new temporary access road option will be extensive and require the removal of all temporary water crossings and deactivation/restoration of the 7.9 km temporary access road. This work is planned for September 2021 and is anticipated to be completed within 3 weeks. To decommission blasted areas, blast material will be pulled back to re-contour the road bed to original slopes where possible. Based on the rugged terrain in the Conservation Reserve and the potential for blasting particularly along the proposed road alignment up to the plateau, re-contouring to original slopes may not be possible. Where this is the case, material will be re-contoured to stable angle of repose re-establishing natural drainage patterns. Stockpiled overburden will be spread on top of the blast rock; however, this material will be very limited as soils are anticipated to be shallow over the bedrock areas. The area will be seeded with an MECP approved and certified seed mix to encourage a cover crop; however, re-vegetation success is anticipated to be limited due to blasted rock substrate and lack of topsoil. It is understood that the combination of seeding and natural regeneration may be preferable to importing topsoil for restoration, particularly on steep slopes where slumping may be a risk.

Post-construction reclamation assessments will be required to assess the status of decommissioning and reclamation efforts on the access road. Consultation with MECP may be required to ensure decommissioning meets expectations. Temporary clear-span bridges and all bridge material (deck, rails, stringings and cribs) will be removed and taken off-site. Stream banks will be re-contoured and treated for erosion and sediment control, as needed.

7.2 Reclamation: Helicopter Access Option

Decommissioning and reclamation work associated with the helicopter access option (ROW area only) is planned between early August and mid-October 2021, following stringing operations (Table 6).

Natural regeneration is the preferred method of reclamation where erosion is not expected and in CLVAs. NextBridge Environmental Monitors will inspect decommissioning work to ensure that all construction waste has been cleaned up and removed, and that reclamation efforts meet MECP expectations for the CR. No specific environmental considerations or timing restrictions are anticipated to impact or conflict with proposed decommissioning and reclamation work for the ROW; as noted, helicopter access and avoidance of the access road is the preferred option, as full decommissioning and reclamation of the temporary access road (Section 7.2) is anticipated to be difficult due to the steep terrain and rocky substrate.

8 OPERATIONS ACTIVITIES AND SCHEDULE

Eleven transmission towers (B148 to B158) will remain within Kama Cliffs CR boundaries following construction. Routine operations and maintenance activities will include tower, insulator and conductor inspections and maintenance as well as manual vegetation maintenance, as required to meet operational safety standards. During operations and maintenance activities, the following general procedures apply to all ROW access (refer to Section 1.4 of the Project Overarching DPP (NextBridge, 2019a) for additional information):

- Inspections will be performed via helicopter or unmanned aerial vehicle.
- Herbicides will not be used to control vegetation in or within 60 m of the protected area boundary during operations and vegetation maintenance activities; manual clearing is required within the protected area

Access to structure sites for maintenance and operations activities will be by helicopter; approval and/or Work Permits from MECP will be obtained to conduct routine infrastructure or vegetation maintenance activities within the park boundaries and NextBridge will apply for these in advance of proposed activities. Details on schedule, methods, mitigation and BMPs for routine transmission line and vegetation maintenance activities are outlined in the Operational Environmental Management Plan (OEMP, Golder 2018b and Overarching DPP (NextBridge, 2019a) for the Project.

8.1 Environmental Considerations for Operations

Routine maintenance activities shall be planned and conducted in consideration of known environmental features and timing restrictions (as outlined in Sections 4.1.1 and 4.1.2.3), and in consideration of the PP's peak operating season(s), typically June – September.

9 PERMITTING APPROACH AND SCHEDULE

For Project development within protected areas, all easements and WP are processed by the MECP under the PPCRA. As outlined above, a park management plan amendment is required to issue permits for development of Project infrastructure within PP boundaries. This process was triggered by regulatory approval of the Amended EA submission in March 2019, and is currently in progress by MECP. Permits required from MECP for Project activities within Kama Cliffs CR (Table 9) include:

- **LUP** – required for the transmission line ROW easement.

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- **WP** – required for temporary access roads, watercourse crossings, installation, and repair.
- **Research Authorization Letter** – for fish salvage or pre-construction surveys (amphibian re-location, etc.).
- **Species at Risk** - Overall Benefit Permit or Letter of Authorization for SAR habitat present (i.e.: bat hibernacula or maternity roost habitat).

Table 9: Required Permits, Authorizations and Timing for Kama Cliffs CR

Permit or Authorization	Issuing Authority	Proposed Submission	Review Period	Date Required to support Project Construction
Section 21 Conditions of Approval (PPCRA)	MECP under the PPCRA	N/A	Unknown	July 2020
LUP – ROW Easement	MECP	February 2020	30 days, concurrent with DPP review	July 2020
WP – Temporary Roads/Watercourse Crossings	MECP	February 2020	30 days, concurrent with DPP review	July 2020
Research Permit for Pre-Construction Surveys	MECP	TBD	60 days, concurrent with DPP review	June 2020
Species at Risk Permit Process	MECP	Complete: OBP#: NR-C-001-19 issued by MECP December 2019.	Min 30 days - IGF Min 30 days - AAF Min 90 days - OBP	Complete

*Note: Date Required is based on the current TILOS and is subject to change pending regulatory approval.

10 EA COMMITMENTS

Commitments associated with PP and CR outlined in the Amended Environmental Assessment are summarized in Table 10. It should be noted that many of the instances where MNRF is identified as the regulator, it is now MECP.

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Table 10: EA Commitments Related to Protected Areas

EA Commitment #	Commitment
14	The Owner will provide at least 45 days advanced notice of construction activities to recreational users through formal notification in local newspapers and at protected parks and campsites locations (e.g., park entrances).
20	Work Permits and Land Use Permits will be obtained from MNRF within provincial parks as applicable.
36	The Owner will actively consult with the MNRF, MECP, and other relevant stakeholders on proposed measures to minimize interruption of recreational use and access restrictions to protected areas.
37	Clearly mark the boundaries of protected areas along the right-of-way (ROW).
73	The Owner will work with the Ontario Parks to plan construction around the peak park season, from June to September, where the Project Site is located within a provincial park.
76	No blasting near provincial parks on weekends and holidays beginning May Long weekend and ending Labour Day weekend, inclusive.
79	<p>Implement the following mitigation measures for canoe routes and portages:</p> <ul style="list-style-type: none"> • vegetation clearing within a minimum of 90 m around Category A canoe routes (i.e., Pukaskwa River canoe route, White River canoe route and Pukaskwa River canoe route) and their associated portage will be limited to where necessary for safety and compatible vegetation (e.g., below 2 m in height) will be retained where practicable (MNRF 2015); • vegetation clearing within a minimum of 30m around Category B canoe route (i.e., White River canoe route, Michipicoten River canoe route and Magpie River canoe route) and their associated portage will be limited to where necessary for safety and compatible vegetation (e.g., below 2 m in height) will be retained where practicable (MNRF 2015); • vegetation clearing around a canoe route will be limited to where necessary for safety and compatible vegetation (e.g., below 2 m in height) will be retained where practicable to meet regulatory requirements and minimize visual evidence of disturbance from activities; • retain compatible vegetation (e.g., below 2m in height) around a portage where practicable to meet regulatory requirements; • maintain visibility of portage on either side of the ROW (e.g., no stockpiled vegetation or soils at the portage access points) and access roads for recreational user accessibility; • during construction, keep portages cleared of vegetation debris and maintain the existing grade of the portage in a manner that it is safe for the recreational users; and • no disturbance of portages outside of the Project Site and access roads will be permitted."
90	Construction activities will be staged in protected areas to avoid or minimize potential effects on ecologically sensitive areas, life cycle periods, and peak visitor periods, when construction schedule allows. Mitigation will be applied to reduce negative effects on protected areas.

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EA Commitment #	Commitment
99	<p>Avoidance of the Critical Landform/Vegetation Association (CLVA) in Gravel River Conservation Reserve was not practicable as a change in routing design at that location would result in additional greenfield disturbances. The following measures will be implemented to mitigate potential effect of the Project on this CLVA:</p> <ul style="list-style-type: none"> • Obtain a work permit from the MNRF under the Provincial Parks and Conservation Reserves Act for development within a CLVA; • The Owner will employ the services of qualified Environmental Inspector(s) to guide implementation, monitor and report on the effectiveness of the construction procedures and mitigation measures for minimizing potential impacts; • Clearly mark known site-specific features (e.g., rare plant, wetland, water body, SWH) and associated setbacks as shown on the Environmental Alignment Sheets and the Access and Construction Environmental Maps. • Flag undisturbed adjacent areas to the extent required to protect adjacent seed sources from being affected. • The Owner will review protective and mitigative measures with the General Contractor (Valard). • The Owner will follow weed control and management measures outlined in the Weed Management Plan (refer to Section 8.4)
130	<p>Reduce unauthorized users and access to protected areas by installing signage and other appropriate barriers on access roads where permissible by MNRF/MECP.</p>
131	<p>Implement the following mitigation measures when construction is required in provincial parks:</p> <ul style="list-style-type: none"> • construction equipment, including rig mats, will arrive on the Project Site clean (i.e., free of soil and vegetative debris); • confine grubbing and stripping to the transmission structure locations and new access roads; • seed areas prone to erosion with a native cover crop (e.g., cereal crop) and certified seed mix approved by the applicable regulatory agency as soon as feasible after construction; • plant conifers when reclaiming laydown yards, construction camps, and storage yards and other disturbances located off of the transmission line ROW and in consultation with the landowner or communities and applicable regulatory authority. • the use of herbicides during construction is prohibited.
283	<p>Water body crossings will be designed and constructed in compliance with LRCA, DFO and/or MNRF regulatory permits and approvals, if applicable, recognizing that all newly installed or upgraded crossing structure at mapped or unmapped water bodies are expected to require permitting through one or more of:</p> <ul style="list-style-type: none"> • O. Reg. 239/13 under the Public Lands Act (administered by MNRF for water body crossings on Public/Crown land), • O. Reg. 454/96 under the Lakes and Rivers Improvements Act (administered by MNRF for water body crossings on Private or Crown Land), • Provincial Parks and Conservation Reserves Act (PPCRA) (administered by MNRF for water body crossings within provincial parks and conservation reserves), • the Fisheries Act and Species at Risk Act (administered by DFO), and • O. Reg. 180/06 for the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses under the Conservation Authorities Act (Government of Ontario 1990a; administered by LRCA for water body crossings in LRCA jurisdiction).

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EA Commitment #	Commitment
1029	<p>NextBridge commits to providing a DPP for each construction workfront and each provincial park and conservation reserve where construction will occur. Per the tables of contents agreed upon with the MECP and MNRF, the DPPs will include, but not be limited to, the following information:</p> <ul style="list-style-type: none"> • the pre-construction field reconnaissance approach; • detailed construction schedule and design information; • approaches to protecting environmental values; • training and employment opportunities for Indigenous communities; and • Traditional Ecological Knowledge (TEK)/Traditional Land and Resource Use (TLRU) protocol. <p>The DPPs will be submitted to the MECP and MNRF for review prior to the submission of MNRF permit applications.</p>
1038	<p>NextBridge commits to install the structure at this location (the Kama Cliffs Conservation Reserve) via helicopter and to remove the access road overlapping the Mazukama Falls area from the Project footprint.</p>
1052	<p>Where there are no reasonable alternatives to avoid the CLVA in Gravel River Conservation Reserve, NextBridge will use low-pressure tread equipment and rig mats, and other mitigation measures agreed upon with the MNRF.</p>

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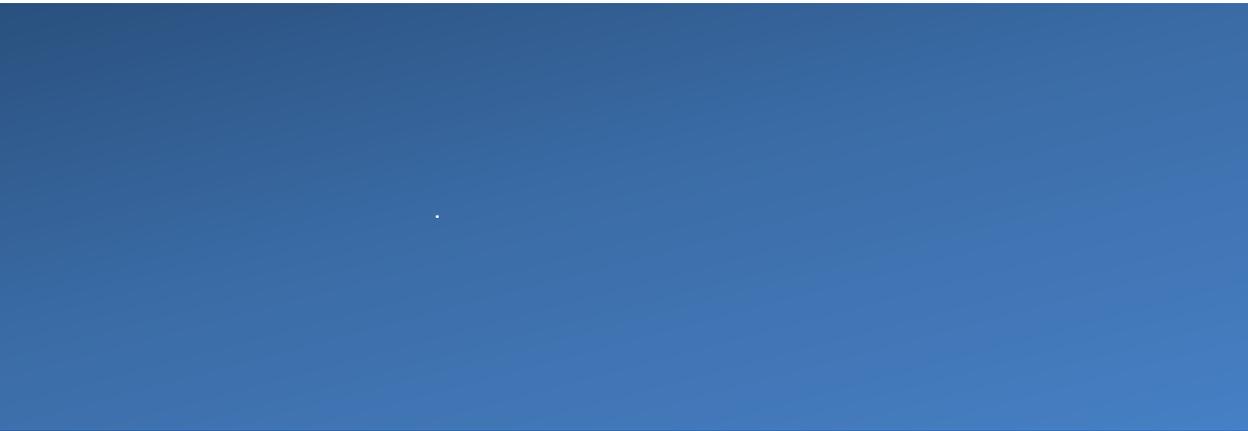
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