WAASIGAN
TRANSMISSION LINE

FINAL ENVIRONMENTAL ASSESSMENT

Section 7.4 Aesthetics

November 2023

Acknowledgements

We wish to acknowledge that the Waasigan Transmission Line Project is located within lands that represent the traditional territories and homelands of the Robinson-Superior Treaty (1850) and Treaty #3 (1873) First Nations, and traverse the Red Sky Métis Independent Nation, Northwestern Ontario Métis Community and Northern Lake Superior Métis Community.

Hydro One also wishes to acknowledge Indigenous artist, Storm Angeconeb, for developing the covering page and wildlife designs throughout the Final Environmental Assessment. Storm is a highly recognized visual artist from Lac Seul First Nation in Treaty #3 and currently resides in Red Lake. Many of her works include animals and birds as representations of herself or those close to her. The artist's description of the covering page is presented below.

Hydro One Environmental Study Art:

What stands out in this art piece is the symbolic representation of solar rays as "Bringing Power"; we can see the environment represented through the wildlife and Ojibwe floral visuals. This artwork is an excellent representation of Hope, Life, and Opportunity, visually portrayed through the Black Bear and her two cubs. The colour theme of this artwork comes from the Waasigan Transmission Line Project brand identity.

Artist: Storm Angeconeb

Table of Contents

Tables

Figures

Appendices

7.4 Visual Aesthetics

Ezhinaagwak

This section describes and summarizes the baseline characterization studies undertaken for the Project and presents an assessment of the effects of the Project on visual aesthetics. For the purposes of this report, visual aesthetics refers to the visual qualities of natural and cultural features that comprise the landscape within the Waasigan Transmission Line Project (the Project) study area.

The assessment follows the general approach and concepts described in Section 5.0.

7.4.1 Input from Engagement

Comments pertaining to visual aesthetics that were raised by Indigenous communities, government officials and agencies, and interested persons and organizations during engagement and how they were addressed in the environmental assessment (EA) are listed in

Table 7.4-1. Comments and responses are provided in the Engagement Summary (Section 4.0). In addition, the Draft EA Report was provided to Indigenous communities, government officials and agencies, and interested persons and organizations for review and comment on May 17, 2023. A high-level summary of the key themes from the comments on the Draft EA Report and related engagement meetings are included in Table 7.4-1. The detailed responses to these comments are included in Appendix 4.0-A.

Table 7.4-1: Summary of Comment Themes Raised during Engagement Related to the Visual Aesthetics

Comment Theme	How Addressed in the Environmental Assessment	Indigenous Community or Indigenous Group/ Stakeholder
Question regarding the differences between landscape and aesthetics, economy and land use, and population and settlement assessment components. Suggestion to have a stand-alone component to evaluate social impacts.	Visual aesthetics considered the visual impacts to the landscape; economy and land use considers how the Project will impact the economic businesses and the ways in which the lands are currently used (i.e., agriculture); population and settlement considers the number of people within a region and the impacts of an influx of workers during construction and maintenance (this would be very different in northern communities compared to larger city centers). These components all fall under a broader category of the socio-economic environment.	Northwestern Ontario Métis Community (NWOMC) and Métis Nation of Ontario Region 2
Concerns regarding the visual impact of the Project.	The potential visual impacts of the Project are assessed in this environmental assessment section. An additional key viewpoint was added to the Final EA Report to illustrate the Project from a concerned landowner's dock on Kabaigon Bay, Shebandowan Lake	Members of the public
Concerns of viewscapes for backcountry canoeists on Pickerel Lake within Quetico Provincial Park.	Additional text was added in Section 7.4.7.3.1.3 to characterize the effects with Quetico Provincial Park and to canoeists.	Ontario Parks

Comment Theme	How Addressed in the Environmental Assessment	Indigenous Community or Indigenous Group/ Stakeholder
Feedback shared to Hydro One regarding how aesthetics contribute to the perceptions NWOMC and Region 2's citizens have on the places where Métis practices are conducted. How the perceptions of NWOMC and Region 2's citizens could change during the construction and operational project phases, or how the rights and interests of NWOMC and Region 2's could be impacted as a result are not considered.	Section 7.4 has been updated to recognize this feedback shared by NWOMC and Region 2. Additional context has also been added to the assessment of effects to the indicator of Sense of Place in Section 7.8 to reflect these comments.	NWOMC and Region 2

7.4.2 Information Sources

Information for the visual aesthetics baseline characterization was collected from review of the following sources:

- City of Dryden tourism and recreation information (City of Dryden, 2017a);
- Geographic Information System (GIS) base mapping data provided by the City of Dryden (City of Dryden, 2017b);
- GIS base mapping data provided by City of Thunder Bay (City of Thunder Bay, 2022);
- City of Thunder Bay tourism and recreation information (Visit Thunder Bay, 2022);
- Town of Atikokan tourism and recreation information (Visit Atikokan, 2022);
- Recreational Facilities, provided by Hydro One Network Inc (Hydro One), (Hydro One, 2022);
- 3D data for hydro tower structures and lines provided by (Valard 2022);
- Canadian Digital Elevation Model (CDEM) and Canadian Digital Surface Model (CDSM) with a resolution of ~20 m;
- Ontario Ecological Land Classification (ELC) inventories to identify natural landform and land cover features (Crins et al. 2009, Wester et al. 2017);

- Base mapping data obtained from the Ministry Natural Resources and Forestry (MNRF) through Ontario GeoHub (MNRF 2022a);
- Areas Of Concern (AOCs) provided by the Ministry Natural Resources and Forestry (MNRF 2021);
- Management plans for Forest Management Units, provincial parks and municipalities to determine resource and development patterns and existing management objectives related to visual aesthetics (MNRF 2022c);
- Forest Resource Inventory (FRI) data with 0.5 m resolution obtained from MNRF for satellite imagery copyright © 2023 Environmental Systems Research Institute (ESRI 2022) and its licensors, used under license, all rights reserved (MNRF 2022b);
- LiDAR elevation data with a resolution of approximately 0.1 m and approximately 520 m wide area along the right-of-way (ROW) and aerial imagery for the Project provided by SNC Lavalin (SNC 2021);
- WSP Photographic inventories collected during field surveys – October 2 to November 2, 2022;
- Indigenous Knowledge studies, comments and engagement feedback shared on the Draft EA by Indigenous communities; and
- Comments and engagement feedback, including photos, shared by government and public stakeholders.

For the purposes of this assessment, sufficient information was deemed to be available from the references listed above to assess the potential effects of the Project on visual aesthetics.

7.4.3 Criteria and Indicators

Criteria are components of the environment that are considered to have economic, social, biological, conservation, aesthetic, or ethical value, as described in Section 7.4.3. **Indicators** are an aspect or characteristic of a criterion that, if changed as a result of the Project, may demonstrate a physical, biological or socio-economic effect.

The criteria and indicators for visual aesthetics were initially outlined in the Amended Terms of Reference (ToR). Feedback from Indigenous communities, government officials and agencies, and interested persons and organizations received during engagement was incorporated into the preliminary criteria and indicators approved in the Amended ToR.

The criteria and indicators selected for the assessment of potential Project effects on the visual aesthetics, and the rationale for their selection, are provided in Table 7.4-2. The indicators listed in Table 7.4-2 have been modified from original Amended ToR for the following reasons:

- "Proximity to mapped or known public scenic viewpoints and visual aesthetics Areas of Concern (AOCs) (MNRF 2021) in the study area" and "Anticipated visibility of the Project from key scenic viewpoints and visual aesthetics AOCs in the study area" have been changed to "Visibility of the Project". The word "Public" has been removed from this indicator because some viewing locations are from privately owned lands, such as golf courses or ski hills. The word "scenic" has been removed from this indicator because some viewing locations might be viewing the Project from areas that do not have a scenic view of the landscape, such as parking lots or a clearcut. "Visibility of the Project" identifies locations within the RSA with visibility of the Project, which includes "Viewpoints" and "Key Viewpoints" that are specific locations where field photographs are taken and later used during the effects assessment. There were no "AOCs" identified in the MNRF data (2021) within the local study area. Therefore, "AOCs" were removed from the indicator.
- "Visual contrast of the Project relative to the existing landscape from key viewpoints" has been changed to "Visual contrast of the Project relative to the existing landscape". An overall qualitative description of the Project's visual contrast within the existing landscape was described, in addition to the quantitative assessment of the Project's contrast from the key viewpoints. Therefore, the words "from key viewpoints" have been removed from this indicator.
- "Compatibility of the Project with the Visual Landscape" was removed as an indicator because compatibility and visual contrast are similar, and it would be redundant to use both in the visual effects assessment.

Table 7.4-2: Summary of Visual Aesthetics Criteria and Indicators

Criterion	Rationale	Indicators	Measurement of Potential Effects
Visual Landscape (Aesthetics)	• Commitment to avoid or minimize adverse effects to existing scenic views and visual aesthetics.	Change to the visual landscape considering: • Visibility of the Project. • Visual contrast of the Project relative to the existing landscape.	• Qualitative assessment of the change to the visual landscape during construction. • Qualitative and quantitative assessment of the change to the visual landscape during operations and maintenance.

Visual aesthetics was selected as the criterion on which to focus the assessment of potential effects of the Project on landscape views and visual aesthetics. Aesthetics is the visual character or condition of the visual resources (i.e., topography, water features, vegetation, cultural features) of a landscape area that is related to the landscape's ability to provide scenic appeal for viewers. The visual aesthetics of the environment has value to individuals, society, and the economy and particularly to persons involved in recreational, tourism and residential land use activities.

The indicators used to characterize changes for the visual aesthetics criterion are described as follows:

- **Visibility of the Project:** Refers to locations that are related to visual aesthetics and have potential visibility of the Project. These locations are derived from GIS data, engagement and publicly available information and identified through GIS visibility analysis. Visibility of the Project also refers to the visible area (hectares) of the Project (determined through visibility analysis) from key viewpoint locations. Key viewpoints refer to photo viewpoint locations along the length of the Project and specially seven sites selected as representative viewpoints for the visual effects assessment, including simulations. Details are provided in Section 7.4.5.2.3.

- **Visual contrast of the Project relative to the existing landscape:** Refers to the level of visual contrast between the Project components and the visual aesthetics of the existing landscape. Contrast ratings are made by comparing the basic elements of form, line, color, and texture of the existing landscape with the proposed Project. Photographic simulations can be used to guide the assessment of expected future conditions. Factors to be considered when assessing visual contrast from the Project include distance, angle of observation, length of time the Project is in view, relative size or scale, lighting conditions, spatial relationships and atmospheric conditions (USDI BLM 1986a).

While no specific comments on the indicators for the visual aesthetics assessment were shared through engagement, comments on the Draft EA shared by NWOMC and Region 2 reflect that elements of visual aesthetics, such as scenic quality, differ from that of the public where connection to land, elements of locationality, and ‘Sense of Place’ are all contributing factors to the NWOMC and Region 2’s cultural identity. While the assessment of visual aesthetics provided here represents an assessment of the visibility of the Project and visual contrast relative to the existing landscape, context to how predicted change may relate to the practice of rights, interests and use of lands and resources, including ‘Sense of Place’ are assessed further in Section 7.7 (First Nations Rights, Interests and Use of Lands and Resources) and Section 7.8 (Métis Rights, Interests and Use of Lands and Resources).

7.4.4 Assessment Boundaries

7.4.4.1 Temporal Boundaries

The Project is planned to occur in three stages:

- **Construction stage**: the period from the start of construction to the start of operation (in-service date).

- **Operation and maintenance stage**: the period from the start of operation and maintenance activities through to the end of the Project life.

- **Retirement stage**: the period from the end of the Project life and start of retirement activities through to the end of final reclamation of the Project.

As described in Section 3.0, the Project will be operated for an indefinite period and the timing of retirement, or decommissioning, is not known at this time as it is anticipated that upgrades to reinforce or rebuild portions of the Project may occur over its lifetime to maintain its longevity. Further, potential visual effects and mitigation measures to be identified during the EA for the construction of the Project will likely equally apply to the potential removal of the Project at a future point in time, should it ever be required. Further, decommissioning of the Project is expected to have a positive net effect on aesthetics criteria and indicators (e.g., returning the ROW to a natural state and removing structures that effect the visual landscape). Therefore, the construction scenario assessed as part of the EA is considered bounding and potential visual effects and mitigation measures (Section 7.4.9) for retirement are not identified separately in this EA.

The scale and character of changes to the existing visual aesthetics would be cumulative and reach their full extent at the commencement of operations. The quantitative component of the aesthetics assessment will primarily focus on the Project effects at the operations and maintenance stage as the visual disturbance during this period would represent the largest extent and long-term viewing conditions likely to be experienced by viewers. Project components and activities, however, may overlap in time for viewers. For example, following construction, temporary laydown areas and some access roads will be decommissioned, and reclamation and revegetation (human-facilitated and natural) will occur during the operation and maintenance stage. Therefore, the qualitative component of the aesthetics assessment will consider the net effects of the Project that occur during the construction, and the operation and maintenance stages.

7.4.4.2 Spatial Boundaries

Viewing distance affects the visible level of detail in the landscape whereby visual elements of the landscape are more discernible and prominent the closer they are to the observer (USDI BLM 1986a). As viewing distance from the Project increases, detail and sensitivity to alteration decreases.

Viewing distance zones were measured outward from the Project footprint to help define the influence of viewing distance and support the determination of study areas. These distances were defined as foreground and middle-ground based on distances consistent with research on the visibility thresholds for 230 kV transmission line structures (Sullivan et al. 2014).

A summary for the spatial boundaries of visual aesthetics for the Project is described in Table 7.4-3 and presented on Figure 7.4-1.

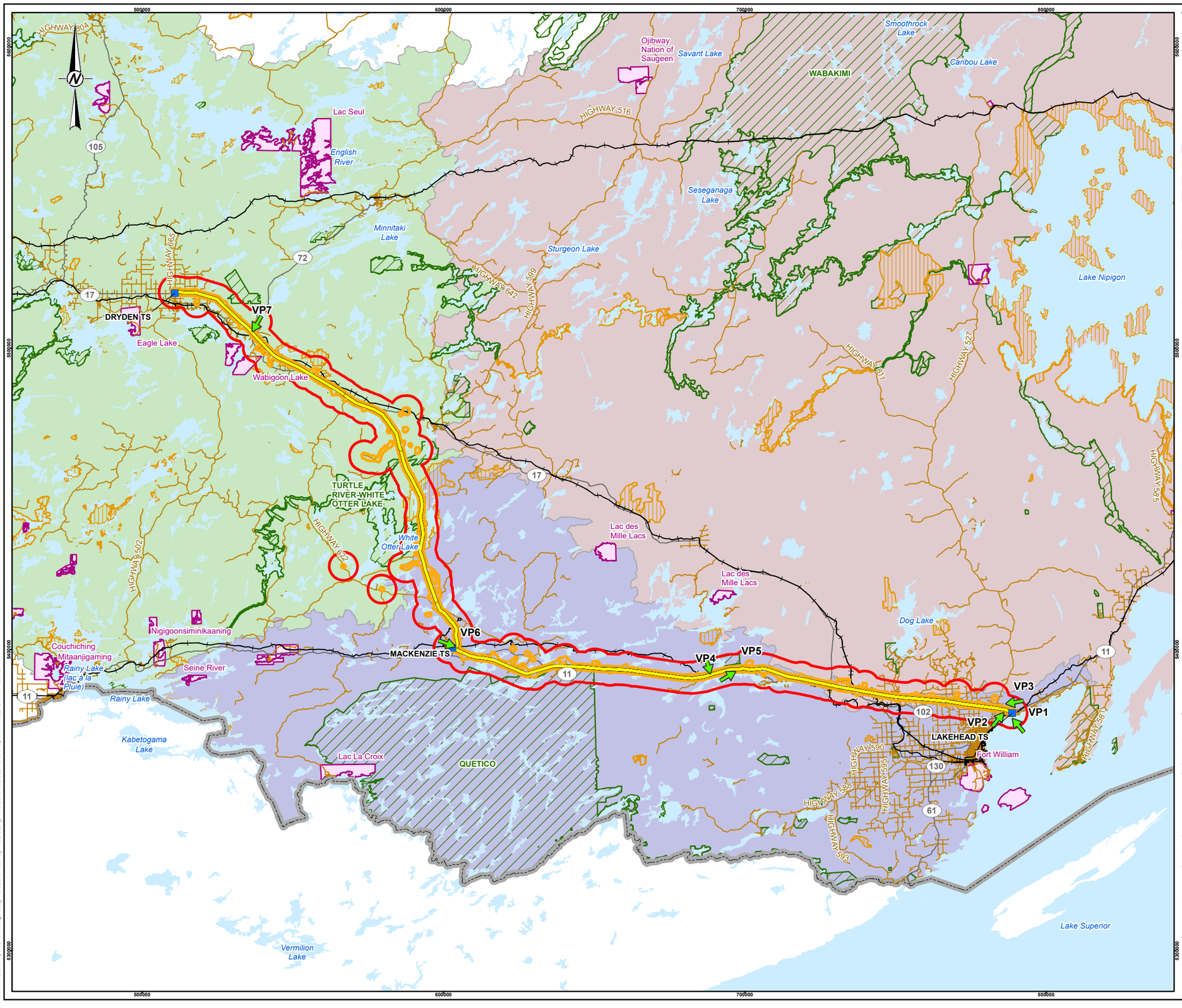
Table 7.4-3: Summary of Visual Aesthetics Spatial Boundaries

Spatial Boundary	Area (ha)	Description	Rationale
Project footprint	4,073	The Project footprint includes: • Typical 46 m wide transmission line ROW; • Widened ROW for the separation of circuits F25A and D26A for 1 km; • Modifications of the Lakehead TS, Mackenzie TS, and Dryden TS; • Access roads (improved existing roads and new); • Temporary supportive infrastructure associated with construction including fly yards, construction/stringing pads, laydown areas, construction camps, and helicopter pads; and • Aggregate pits.	To capture the potential direct effects of the physical footprint of the Project.

Local study area	89,098	Includes the Project footprint and:
		• A 1 km buffer on the transmission line ROW (including the ROW for circuits F25A and D26A); and
		• A 500 m buffer on the ancillary components including:
		  ◦ TS expansion areas;
		  ◦ Access roads (improved existing roads and new);
		  ◦ Temporary supportive infrastructure; and
		  ◦ Aggregate pits.
			To capture potential local direct and indirect effects of the Project on the visual aesthetics criteria that may extend beyond the Project footprint. This area is established to assess the potential effects of the Project from foreground (1 km from the ROW) viewing distances. Where visual details are most easily discernible by viewers.

Spatial Boundary	Area (ha)	Description	Rationale
Regional study area	449,003	• Includes a 4 km buffer on the local study area.	To provide a regional landscape context to assess the cumulative and regional effects on the visual aesthetics criteria. This area is established to assess the potential effects of the Project from middle ground (1 to 5 km from the ROW) viewing distances where changes to the landscape may be visible but are less discernible than foreground viewing distances.

ROW = right-of-way; TS = Transformer Station



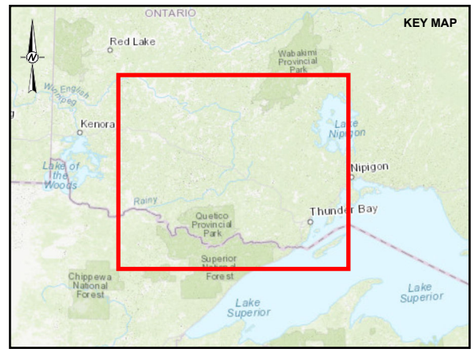
LEGEND

- KEY VIEWPOINT LOCATION AND VIEWING DIRECTION
- 230 KV TRANSFORMER STATION (TS)
- RAILWAY
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- INTERNATIONAL BORDER
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- WATERBODY
- CONSERVATION RESERVE
- PROVINCIAL PARK

ECOREGION

- LAKE NIPIGON
- LAKE WABIGOON
- PIGEON RIVER

KEY MAP



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REFERENCE(S)

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2. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
3. PROJECT DATA PROVIDED BY HYDRO ONE INC.; JANUARY 2023
4. PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
VISUAL AESTHETICS STUDY AREA

CONSULTANT

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DESIGNED	CS
PREPARED	PM/DB
REVIEWED	HK
APPROVED	CS

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7.4.5 Description of the Existing Environment

This section describes the specific methods and standards used in the collection of data to represent the existing visual aesthetics in the RSA.

7.4.5.1 Baseline Characterization Data Collection Methods

The baseline characterization data are a temporal snapshot that represents the existing condition of visual resources and reflects the visual aesthetics of the landscape in the RSA prior to Project construction. An inventory of visual resources was established to characterize the existing visual conditions of the landscape, including visual effects from previous and current land use activities, against which potential effects of the Project on visual aesthetics were assessed. This section describes the specific methods and standards used to collect data that represent the existing or baseline characterization environment.

There are currently no provincial standards for either the assessment of visual effects or the management of visual resources in Ontario. Accordingly, the approach used in this assessment follows established international guidance for best practices for visual impact assessment (LI/IEMA 2013) and adapts elements of the United States Department of the Interior Bureau of Land Management's (USDI BLM) Visual Resource Management (VRM) system, which is a standardized method for visual inventory and assessment developed for a variety of resource management planning situations, including transmission line planning (USDI BLM 1986a). Specifically, methods for the assessment of the baseline characterization were applied from the Visual Resource Inventory BLM Manual Handbook H 8410-1 (USDI BLM 1986a). These methods draw on landscape design principles and public perception research and use criteria that can be consistently identified and evaluated for assessing the character of existing visual settings and rating the visual effects of a project's features on the surrounding landscape. Application of this method allowed the assessment to be conducted consistently throughout the RSA and reduced the subjectivity associated with assessing visual aesthetics.

The baseline characterization was developed through desktop review of existing information, including review of the regulatory and policy setting, classification of landscape character, visibility analysis, photographic field surveys and landscape analysis.

7.4.5.1.1 Landscape Characterization and Analysis

Landscape character refers to the distinct and recognizable patterns resulting from a combination of physical elements (e.g., landform, water, and vegetation) and cultural elements (e.g., land use patterns, cultural modification, and historic features) for different areas in a landscape (Horner + Maclennan and Envision 2006). The character of the landscape within the RSA varies relative to combinations in the landscape's biogeoclimatic, terrain, and land use settings. To assess the general qualities of the landscape context, the RSA was classified into distinct units of landscape character based on intersecting ecosystem classification units defined in the ELC systems (Crins et al. 2009). For the assessment of baseline characterization

visual aesthetics, the description of these units was used in combination with observations from available photographic field surveys to inform an understanding of the visual character.

7.4.5.1.2 Structure Visibility Analysis

Visibility modelling and analysis with a GIS identifies areas across a landscape that can be seen from one or more viewpoints, often called a viewshed. This method was used to map the visible areas with potential line-of-sight to the transmission structures within the ROW for Project out to 5 km from the ROW, which is referred to as the visibility modelling extent. Visibility modelling was performed with point features representing the proposed tower tops and a Digital Surface Model (DSM) that contains elevation data for natural and artificial features (e.g., buildings, structures, trees, and bare earth) within 5 km from the ROW. The DSM was primarily created from LiDAR data (SNC 2021) and FRI data (MNRF 2022). Where LiDAR data and FRI data was not available, Natural Resources Canada (NRCan 2022) DSM data was used. All the DSM datasets were combined into a 5 m resolution surface model and used for the visibility modelling.

Considering the resolution of the spatial data used and the potential for additional limitations to natural visibility (e.g., atmospheric conditions, etc.), the visibility analysis results reflect a conservative estimation of the visibility of the transmission structures for the Project.

The GIS data was compiled to determine the number of viewing locations where the transmission towers may be visible within 5 km from the ROW. The GIS data was supplied by the following publicly available sources:

- City of Dryden tourism and recreation information (City of Dryden 2017a);
- GIS base mapping data provided by the City of Dryden (City of Dryden 2017b);
- GIS base mapping data provided by City of Thunder Bay (City of Thunder Bay 2022);
- City of Thunder Bay tourism and recreation information (Visit Thunder Bay 2022);
- Town of Atikokan tourism and recreation information (Visit Atikokan 2022);
- Base mapping data obtained from the Ministry Natural Resources and Forestry (MNRF) through Ontario GeoHub (MNRF 2022a); and
- AOCs provided by the Ministry Natural Resources and Forestry (MNRF 2021).

7.4.5.1.3 Photographic Field Survey

A photographic field survey was conducted between October 2 to November 2, 2022, to capture baseline landscape photographs, geographic information, and observations from a number of representative viewpoints to document existing viewing conditions within the RSA. Photographs were taken from the viewpoints in the direction of the Project with a professional quality Digital Single Lens Reflex (DSLR) camera (Cannon EOS 6D). For this assessment, panoramic images

were captured to present a wide field of view that depicts the full extent of the Project that an observer could experience from each viewpoint location. One photograph which was captured by a seasonal resident (Property Owner, Shebandowan Lake 2023) was not taken with same methods used to capture the baseline photos between October 2 to November 2, 2022. A zoom setting was used to capture the photo and there was no information for the focal length to compare with the average range of human vision. However, the photo was used in the effects assessment to address visual impact concerns from seasonal residents located on lakes near the transmission line. A detailed observation log describing geographic information gathered using a global positioning system (GPS), camera settings, and details about viewing conditions including viewing angles, viewing duration, and observations about the location use, were documented at each viewpoint location. Each surveyed location is identified by a unique viewpoint identification number in the photographic inventory observation logs (see Appendix 7.4-A).

Given the large number of potential viewing locations within the RSA (366,232 ha), it was not feasible to visit all potential viewing locations that may be affected by the Project. Considering this, it was necessary to select a subset of representative viewpoint locations to characterize the baseline landscape. The selection of the representative viewpoints to conduct photographic field surveys was based on the following visual aesthetics criteria (LI/IEMA 2013, USDI BLM 1986a):

1. Proximity to features that provide publicly accessible viewing, including roads, trails, waterbodies, parks, and recreation amenities near residential areas;
2. Ease of access and use by a range of viewers and user groups, including recreational users, tourists, motorists, and residents;
3. Representation of a range of viewing angles and distances; and
4. The potential for unobstructed views of the Project.

Some locations were identified as sensitive scenic locations from which to take photographs; however, the photographs could not be taken from these locations at the time of the field survey. The reason for choosing these locations as viewpoints and why the photographs could not be taken during the field survey are described below.

Turtle River – White Otter Lake Provincial Park was initially identified as a location from which to take photos because it is a waterway class provincial park, as described in Section 7.4.5.2.1, and the ROW crosses the provincial park between Balmoral Lake and Elbow Lake. Potential viewing locations may include canoeists portaging between Balmoral Lake and Elbow Lake. However, at the time of survey the location where the ROW crosses the provincial park was not easily or safely accessible by boat or road.

Criteria defined above for use in selection of potential representative viewpoints to conduct photographic field surveys are intended to provide examples of the viewpoints that may be widely experienced by potential viewers. It is recognized that changes to visual aesthetics may

occur in areas of use or importance that are less readily accessible or widely viewed, including areas of importance to Indigenous communities. Considerations of how quality of experience/sense of place in areas of use for traditional purposes, including sensory disturbance through Project-related changes visual landscape (aesthetics) are discussed further in Section 7.7 (First Nations Rights, Interests and Use of Lands and Resources) and Section 7.8 (Métis Rights, Interests and Use of Lands and Resources).

7.4.5.1.4 Landscape Analysis

Determining the value of the landscape's existing visual quality incorporated input from engagement and consultation related to concerns regarding visual quality, results from the landscape characterization analysis describing the context of the Project area, results from the photographic field surveys from the seven selected key viewpoints, and systematic ratings based on dimensions of scenic quality, and viewing distance from criteria established in the USDI BLM VRM system.

Visually referencing the photographic survey images from the seven key viewpoints, the scenic quality of the existing landscape was described and classified based on factors related to the characteristics of landscape features (e.g., landform, vegetation, and water). A combination of these values, along with the delineation of viewing distance, provided an overall landscape rating to determine the value of the existing landscape visual quality and support the analysis of Project-related visual effects.

7.4.5.1.4.1 Scenic Quality Rating

The baseline scenic quality assessment is an evaluation of the overall existing scenic appeal of a view, as determined by its visual characteristics and the relationship of its natural and cultural features. Once established, the baseline scenic quality is compared with the Project to determine the level of visual contrast as described in Section 7.4.7.2.2. The analysis of scenic quality is based on established research in perceptual psychology and the premise that all landscapes have some scenic value, but those with visual diversity, with harmonious composition, and/or that contain distinct features have the greatest potential for high scenic quality (USDI BLM 1986a).The dimension of scenic quality of the landscape was described and classified based on factors related to landscape features and visual design elements by reviewing topographic, landcover, cultural feature spatial data, results from the landscape unit character analysis, and available orthographic and photographic images for each of the seven key viewpoints. Scenic quality for key viewpoints was characterized using the following descriptive categories (USDI BLM 1986a):

- High – views are generally strongly visually composed, containing a diverse arrangement of landscape features; alterations may fundamentally alter the visual character of the landscape.

- Moderate – views that have some distinct dimension or character; landscape features may demonstrate a degree of visual composition and a moderate amount of visual diversity; landscape alterations may be evident.
- Low – views that are typically uniformly composed with limited visual diversity and few or no prominent landscape features; landscape alterations may be prominent.

As described in Section 7.4.5.1.3, criteria defined above are intended to be applied as an indication of experience by a wide range of potential viewers. Additional considerations of how quality of experience/sense of place in areas of use for traditional purposes, including sensory disturbance through Project-related changes visual landscape (aesthetics) are discussed further in Section 7.7 (First Nations Rights, Interests and Use of Lands and Resources) and Section 7.8 (Métis Rights, Interests and Use of Lands and Resources).

7.4.5.2 Results

7.4.5.2.1 Regulatory and Policy Setting

There are no specific Ontario government policies for the management of visual aesthetics, and no regional government visual aesthetics management policy exists for the RSA. Existing strategic land and resource plans identify concerns and general guidance related to visual aesthetics, but no specific measures are provided for management of visual resources.

The majority of the Project is located on Ontario Crown forest lands and the RSA intersects six established Forest Management Units (FMU): Dryden FMU, Wabigoon FMU, Boundary Waters FMU, Dog River-Matawin FMU, English River FMU and Lakehead FMU. Forest management plans for each of these management units were reviewed for applicable regulations or policies related to the management of visual resources (MNRF 2022d). In addition, the Management Guidelines for Forestry and Resource-Based Tourism (MNRF 2022c) were reviewed as they describe a range of practices, tools, and techniques for protecting resource-based tourism values, which include visual aesthetics and scenic views when developing forest management.

Similarly, the Management Guidelines for Forestry and Resource-Based Tourism (MNRF 2022) indicate that visual effects (e.g., harvest areas or logging roads visible from resource-based tourism lakes or waterbodies) are an issue of importance at the resource-based tourism/forestry interface.

Management plans for the provincial parks, conservation reserves and protected areas that are intersected by the Project footprint were reviewed for guidance related to the management of visual resources within the park boundaries. Further information about these protected areas are provided in section 7.1. Two provincial parks, one conservation reserve and two other protected areas are intersected by the Project footprint:

- Turtle River – White Otter Lake Provincial Park (waterway class park). Waterway class parks protect recreational water routes and representative and significant terrestrial and aquatic ecosystems and associated natural and cultural features (MNRF 2022a). The Project ROW crosses the provincial park and the Project uses an existing access road within the park where no improvements are required.
- Quetico Provincial Park – The park's numerous lakes and streams, its rich history and its wild, undeveloped landscape all contribute to its reputation as an area of unparalleled wilderness canoeing opportunity where visitors travel by non-mechanized means and experience expansive solitude, challenge and personal integration with nature (MNRF 2022a). The north-eastern boundary of Quetico Provincial Park is approximately 170 m from the ROW and it is possible that the Project may be visible from open areas or elevated locations within the park. The only Project component that crosses the provincial park is an existing access road where no improvements are required.
- Campus Lake Conservation Reserve – Access to the conservation reserve is principally by floatplane, or by water and portage. Recreational use of the area is lower in comparison to more accessible recreational areas. An existing canoe route forms a loop through the reserve from the adjacent Turtle River – White Otter Lake Provincial Park. An existing transmission line corridor bisects the conservation reserve, running north and south to the west of Sandford, Mabel and Campus Lakes (MNRF 2023). The Project will parallel the existing transmission line corridor through the conservation reserve.
- White Otter Enhanced Management Area A – This area is considered a remote access enhanced management area and is relatively undeveloped and has limited access (MNRF 2023). The Project will parallel the existing transmission line corridor and crosses the enhanced management area between Ann Bay and Sandford Lake, as well as between Walt and Herb Lakes and Mabel Lake.
- Swamp River ANSI – This Earth Science ANSI is approximately 140.5 ha in size and is located northwest of Shebandowan on the eastern side of the Swamp River. Based on information available within the MNRF Crown Land Use Policy Atlas, the Swamp River ANSI is located on private lands and, therefore, is subject to conformance with the *Planning Act* (MNRF 2023a). An existing transmission line corridor is located directly north of the ANSI. The Project will parallel the south side of the existing transmission corridor and overlap approximately 0.6 ha of the ANSI. No other Project components are proposed within the ANSI (e.g., structures or access roads).

7.4.5.2.2 Landscape Characterization and Analysis

The regional setting for the RSA is characterised by the Ontario Shield Ecozone, which comprises Ontario's portion of the boreal forest (Crins et al. 2009, Environment Canada and Agriculture and Agri-Food Canada 1999). The topography of the Ontario Shield Ecozone is generally gently rolling terrain with broadly sloping uplands and frequent depressions and deposits (i.e., eskers, moraines, drumlins, and faults) that form the area's numerous lakes,

streams, ponds, and wetlands. This terrain is predominantly covered by coniferous boreal forest in the northern and central part of the ecozone, and mixed and deciduous forests of hardwoods in the southern portion of the ecozone (Crins et al. 2009). Wetlands (i.e., fens and bogs) are located throughout in poorly drained areas and feature grasses and sedges with generally sparse and small coniferous trees. Historically, the boreal forest experienced patterns of natural disturbance related to wildfire, insect outbreaks, windthrow and disease. In the more recent decades, large-scale harvesting and fire suppression has contributed to forest composition and structure leading to changes in the pattern of forested lands (Carleton 2001).

Ecoregions, as sub-units of the ecozones, are areas characterized on the basis of distinct sub-continental climatic regimes and bedrock geology leading to differences in predominant vegetation (Crins et al. 2009). Ecoregions were identified within the RSA and define distinct landscape character units for the purposes of understanding landscape characteristics and related visual qualities. The extent of the ecoregions is presented on Figure 7.4-1. Areas used for the exercise of Section 35 rights, including areas of importance to Indigenous communities are present across these ecoregions, discussed further in Section 7.7 (First Nations Rights, Interests and Use of Lands and Resources) and Section 7.8 (Métis Rights, Interests and Use of Lands and Resources).

Three ecoregions were identified within the RSA to define distinct landscape character units for the purposes of understanding landscape characteristics and related visual qualities. These consist of the following ecoregions.

- **Pigeon River (Ecoregion 4W)**

  This landscape character unit overlaps approximately 194.6 km of the ROW from Lakehead TS in the Municipality of Shuniah to the south end of Campus Lake Conservation Reserve. The topography is irregular and undulating with landforms that include rounded or flat-topped ridges and broad sloping uplands. There are several water bodies in this unit including the Kaministiquia River, Pigeon River and Marmion Lake. Land cover consists of mostly dense mixed coniferous forest. Characteristic species include white spruce (*Picea glauca*), balsam fir (*Abies balsamea*), eastern white pine (*Pinus strobus*), aspen (*Populus tremuloids*), paper birch (Betula papyrifera), and jack pine (*Pinus banksiana*). The landscape near the Project footprint is a mixture of natural land cover with agricultural lands and/or rural residences near the settlements of Thunder Bay and Atikokan. Other land uses include transportation infrastructure (i.e., rail and roadway), utility corridors, aggregate mining, and forestry. Potential viewing locations in this landscape character unit are primarily related to locations along Highway (Hwy) 11, from residential sites, and recreational boating and tourism locations on local rivers and lakes.

- **Lake Wabigoon (Ecoregion 4S)**

  This landscape character unit overlaps 130.9 km of the ROW from the Campus Lake Conservation Reserve to Dryden TS. The topography is low and gently rolling with broad sloping uplands, moraine ridges and depressions that form numerous larger lakes in this unit. Lakes within the RSA include Wabigoon Lake, Raleigh Lake and White Otter Lake. Other evident land uses include forestry, agriculture, transportation infrastructure (i.e., rail and roadway), utility corridors (i.e., natural gas pipeline, electrical transmission line), and mining and mineral exploration.

- **Lake Nipigon (Ecoregion 3W)**

  An approximately 33.2 km section of the ROW crosses through this landscape character unit between the settlements of Toimela and Shabaqua Corners. Topography within the unit is generally gently rolling and is broken by moraine ridges and depressions. There are numerous large to moderate sized water bodies in this unit such as such as Dog Lake and Lac des Mille Lacs, and the Kaministiquia River, but very few within the RSA. The dominant land cover is a combination of mixed forest and coniferous forest with small areas of sparse forested areas. Almost all of the unit features natural land cover with evident forestry, infrastructure (i.e., rail and roadway), utility corridor (i.e., natural gas pipeline, electrical transmission line), and mining and mineral exploration land uses.

7.4.5.2.3 Structure Visibility Analysis and Viewpoint Identification

Based on the results of the desktop visibility analysis, a number of locations related to visual aesthetics (e.g., roads, waterbodies, recreational areas) and with visibility of the Project components were extracted as GIS data. The GIS data was then tabulated by feature type within 1 km and 5 km of the ROW to support the selection of the representative viewpoints for further analysis. The results of this assessment are summarized in Table 7.4-4:.

Table 7.4-4: Viewing Locations within 1 km and 5 km of the Right-of-Way

Feature Type	Visible Number within 1 km of the ROW	Visible Number within 5 km of the ROW
Road Network	548	1,710
Trail Network	35	73
Crown Land Non-Freehold Disposition	1	3
Cottage Residential Site	19	67
Lake Trout Lake	24	52
First Nation Reserve	0	1
Provincial Park	2	5
Waterbody	657	1,453
Recreational Facilities	0	1
Tourism Establishment Area	12	23
Tourism Lakes	3	6

Feature Type	Visible Number within 1 km of the ROW	Visible Number within 5 km of the ROW
Recreation Point	1	4
Conservation Reserve	3	5
Golf Courses	1	5
Ski Hills and Resorts	1	2
Cities/Towns	3	3
AOCs	0	0

AOCs = Areas of Concern; GIS = Geographic Information System.

Knowledge shared on areas of use by Indigenous communities include features and sites, in addition to and sometimes aligned with available mapped GIS data features representing viewpoints.

Based on the results of Table 7.4-4, three general types of viewing locations were identified within 1 km and 5 km of the ROW that will potentially be affected by the Project. These consist of the following:

1. **Permanent and Seasonal Residential Viewers:** Residential viewers can be local residents, owners or renters of a residential property or settlement area. Residential viewers generally have a higher sense of ownership of views and a desire to maintain the existing landscape as it contributes to their quality of life. Residential viewers tend to experience frequent and continual viewing opportunities. Within 5 km of the ROW, permanent residential viewers include numerous rural residential properties in communities such as Thunder Bay, Shuniah, Dinorwic, Atikokan, Shebandowan, Kaministiquia, Lappe and Dryden. Seasonal residential viewers include the many cottages or camps, predominantly located on the shores of the numerous lakes within 5 km of the ROW, such as Shebandowan Lake.
2. **Land Users and Recreational Viewers:** Land users include Indigenous community land users who may be hunting, fishing, trapping or gathering in the area. Tourists and recreational viewers provide or participate in recreational uses such as boating, canoeing, hiking, camping, or wildlife viewing. Land users and recreational viewers are often focused on their activity and tend to be sensitive to the visual disturbances that would adversely affect the setting of their activity. Land users and recreational visitors are transitory and tend to experience somewhat frequent and sustained viewing opportunities relative to the type and popularity of the activity. Ski hills and resorts within 5 km of the ROW include Lappe Ski Centre, Mount Baldy Ski Area, and Mount Fairweather Ski Hill. Major parks, conservation reserves and protected areas with recreational opportunities within 5 km of the ROW include Turtle River – White Otter Lake Provincial Park, Campus Lake Conservation Reserve, Kashabowie Provincial Park, Quetico Provincial Park, Aaron Provincial Park and the White Otter Enhanced Management Area.

3. **Motorists:** Motorists experience views from the roadway. By necessity, the driver of a motor vehicle focuses less on the view outside the vehicle and more on the roadway while passengers are free to view the adjacent landscape from a variety of viewing angles. Motorists move at higher speeds than other groups and have temporary and/or intermittent viewing opportunities. Within 5 km of the ROW, this includes local motorists and travelers passing through the region. Local motorists will experience more frequent viewing than travelers, although travelers may be more aware of the landscape if they take a particular route for its scenic qualities. Major transportation routes include the Hwy 17 and Hwy 72.

Preliminary visibility analysis and viewpoint selection criteria conducted in Section 7.4.5.1.3 identified numerous potential viewing locations for the Project. These included land-based and water-based viewing locations representing travel routes, residents, recreational and commercial tourism use areas, and locations identified for Indigenous use and/or interest.

Given the large number of locations visited within 5 km of the ROW during the photographic field survey, it was not feasible or necessary to create photo simulations from all the viewpoints. The effects of the Project become repetitive after a certain number of photo simulations are created and are not necessary to establish the net effects. Therefore, seven key viewpoints were identified from a select number of photo viewpoint locations with representative viewing opportunities along the entire length of the Project for the visual effects assessment. The range of viewing scenarios that were considered include:

- Viewpoints with scenic landscape settings (i.e., lookouts, expansive views, waterfalls, lakes).
- Viewpoints with potential for high visibility of the Project based on the visibility analysis displayed in Appendix 7.4-B, such as vantage points very close to the Project with very little vegetative screening or from higher elevations.
- Viewpoints farther away from the Project to depict the Project from longer distances with a less discernible level of detail.
- Viewpoints with potential for a large number of receptors that would have a view of the Project (i.e., transportation corridors, tourists, recreation users, campgrounds, and large settlements).
- Viewpoints with viewing opportunities of the Project that are easily accessible to the public.
- Viewpoints with high potential effects (worst case scenario) to be conservative for the visual effects assessment.
- Viewpoints selected based on criteria from visual guidelines (LI/IEMA 2013; USDI BLM 1986a).

The key viewpoints include land-based and water-based viewing opportunities and are accessible by Hwy 11, Hwy 17, and Hwy 72 or local roadways that are within 5 km of the ROW. These locations also represent foreground, middle-ground, and background viewing distances. Table 7.4-5 identifies the seven key viewpoints selected within 5 km of the ROW and describes the typical activities that occur at each location, the potential nearby Project components that may present visual effects at each location based on preliminary visibility analysis, and the viewing distance to the nearest Project components at each location. The locations of the key viewpoints are presented on Figure 7.4-1.

Table 7.4-5 below lists the seven key viewpoints that were selected, the type of receptor to be expected and the rational for choosing each key viewpoint.

Table 7.4-5: Rationale for Key Viewpoint Selection

Viewpoint (VP)	Name	Type of Receptor	Rationale for Key Viewpoint Selection
VP1	Lake Superior	Recreational boaters, anglers	Represents view from a middle ground viewing distance at a popular water based recreational location where the existing Lakehead TS, ROW, and transmission line infrastructure are visible.
VP2	Thunder Bay KOA Campground	Campground users	Represents view from a foreground viewing distance at a popular tourism and recreational site where the existing ROW and transmission structures are visible.
VP3	Mount Baldy Ski Resort	Recreational skiers	Represents an elevated view from a middle ground viewing distance at a popular recreation destination where the existing ROW and transmission line infrastructure are visible in the distance.
VP4	Kashabowie Road	Lodge and resort guests	Represents view from a foreground viewing distance to an access road to known tourism destinations where the existing ROW and transmission line infrastructure are visible. Access was not available to take photographs from the lodge and resort.
VP5	Kabaigon Bay, Shebandowan Lake	Seasonal resident, recreational boaters, anglers	Represents view from a middle ground viewing distance at a typical dock on a shoreline where the existing ROW and transmission line infrastructure are visible.
VP6	Little Falls Scenic Lookout, Atikokan	Recreational site users, hikers, picnic	Represents the view from a foreground viewing distance at a known tourism and recreation site recognized for aesthetic quality where existing transmission structures are visible.

Viewpoint (VP)	Name	Type of Receptor	Rationale for Key Viewpoint Selection
VP7	Hwy 72, Dinorwic	Local motorists travelling to and from Sioux Lookout	Represents view from a foreground viewing distance at a typical Hwy 72 crossing where existing ROW and transmission line infrastructure are visible.

Hwy = highway; KOA = Kampgrounds of America; ROW = right-of-way; TS = Transformer Station; VP = Viewpoint

7.4.5.2.4 Baseline Scenic Quality Assessment

Dimensions of scenic quality were assessed for each of the seven key viewpoints and combined into a rating describing the existing level of scenic quality at each location. The results of this assessment are summarized in Table 7.4-6. The locations of key viewpoints are presented on Figure 7.4-1 and Figure 7.4-2 through to Figure 7.4-8.

Table 7.4-6: Viewpoint Scenic Quality Rating Summary

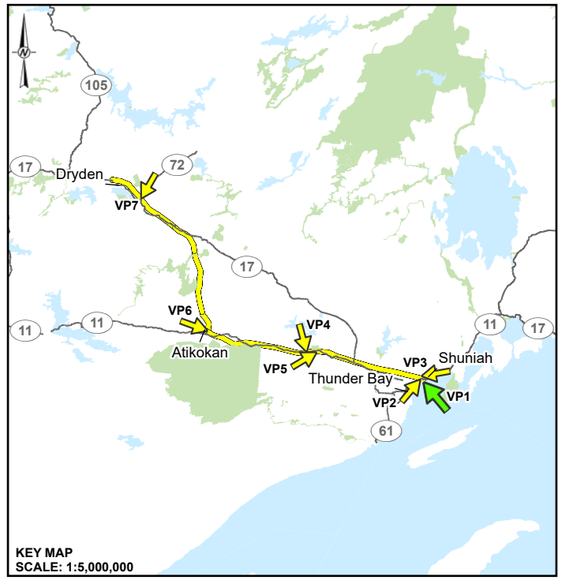
View point	Name	Scenic Quality Rating	Description	Scenic Quality Rationale
VP1	Lake Superior	High	Approximately 350 m from the shoreline and 1.5 km from the Lakehead TS. Existing ROWs can be seen leading north up a hill and to and from Lakehead TS.	Scenic quality rationale include: • Dominant waterbody; • Variety of forest vegetation types; • Topographic variation; • Residential development of suitable character; and • Visible transmission infrastructure.
VP2	Thunder Bay KOA Campground	Medium	Gravel roads lead to camping sites, a dog park, a garage, and maintenance yard. There is an office near the front entrance with a store.	Scenic quality rationale include: • Evident forest vegetation; • Some topographic variation; • Evident facility development and infrastructure; and • Adjacent road development.

View point	Name	Scenic Quality Rating	Description	Scenic Quality Rationale
VP3	Mount Baldy Ski Resort	High	Looking west from the main trail at Mount Baldy Ski Resort. The existing ROW can be faintly seen extending into the distance in a westerly direction.	Scenic quality rationale include: • High variety of forest vegetation types; • Panoramic, expansive view; and • Visible water.
VP4	Kashabowie Road	Low	Gravel Road leading to Kashabowie Lake Lodge & Campground and Birch Point Resort.	Scenic quality rationale include: • Dominant utility corridor clearing and infrastructure; • Disturbed forest vegetation; and • No topographic variation.
VP5	Kabaigon Bay, Shebandowan Lake	High	View from a private dock on Kabaigon Bay. The existing ROW can be seen, from approximately 1.2 km, where it approaches a crossing over Kabaigon Bay.	Scenic quality rationale include: • Dominant waterbody • Variety of forest vegetation types; • Evident facility development and infrastructure; • Disturbed forest vegetation; and • Some topographic variation.
VP6	Little Falls Scenic Lookout, Atikokan	High	View of the falls and the pool of water below. Existing H-frame wood pole transmission line structures can be seen above the tree line on the opposite side of the river.	Scenic quality rationale include: • Dominant waterbody; • Evident waterfall feature; • Mixed mature forest vegetation; and • Recreational development.
VP7	Hwy 72, Dinorwic	Low	View of the existing ROW where it crosses Hwy 72 and McHugh Creek.	Scenic quality rationale include: • Dominant utility corridor, clearing and infrastructure; • Disturbed forest vegetation; and • Little topographic variation.

Hwy = highway; KOA = Kampgrounds of America; ROW = right-of-way; VP = Viewpoint

EXISTING CONDITIONS

PROJECT SIMULATION



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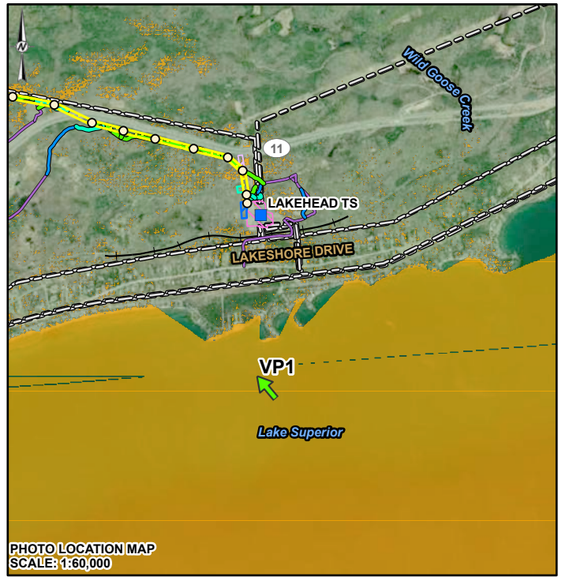

PHOTO LOCATION MAP
SCALE: 1:60,000

LEGEND

- KEY VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- OTHER VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- 230 kV TRANSFORMER STATION (TS)
- RAILWAY
- EXISTING TRANSMISSION LINE
- AREAS THAT ARE POTENTIALLY VISIBLE FROM THE VIEWPOINT
- TOWER LOCATION
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- TEMPORARY LAYDOWN AREA (PULL SITE)
- HELICOPTER PAD

PROJECT VISIBILITY ANALYSIS DATA
APPROXIMATE AREA OF ROW VISIBLE FROM THE VIEWPOINT: 16.01 HA
NUMBER, TYPES AND APPROXIMATE HEIGHTS OF STRUCTURES VISIBLE FROM THE KEY VIEWPOINT: 8 230KV DOUBLE CIRCUIT TRANSMISSION TOWERS, AND 3 230KV DOUBLE CIRCUIT GUYED TANGENT TRANSMISSION TOWERS, 37M TO 61M HIGH

PHOTOGRAPH VIEWPOINT TECHNICAL DATA
CAMERA COORDINATES (UTM NAD 83): E N
CAMERA ELEVATION (CGVD28): M
APPROXIMATE DIRECTION: DEGREES T.N.

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. PHOTOGRAPHIC INVENTORIES COLLECTED DURING FIELD SURVEYS – OCTOBER 2 – NOVEMBER 2, 2022.

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CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

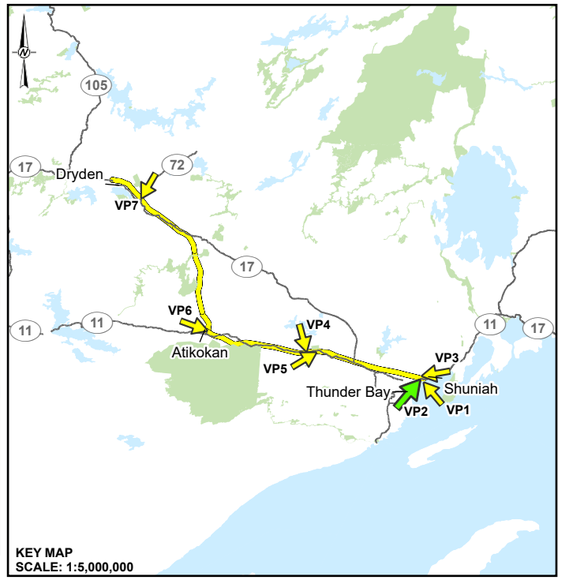
CONSULTANT

YYYY-MM-DD	2023-10-03
DESIGNED	PJM
PREPARED	JR
REVIEWED	HK
APPROVED	CS

TITLE
VIEWPOINT 1 - VIEW FROM LAKE SUPERIOR

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0024	1	7.4-2

EXISTING CONDITIONS



KEY MAP
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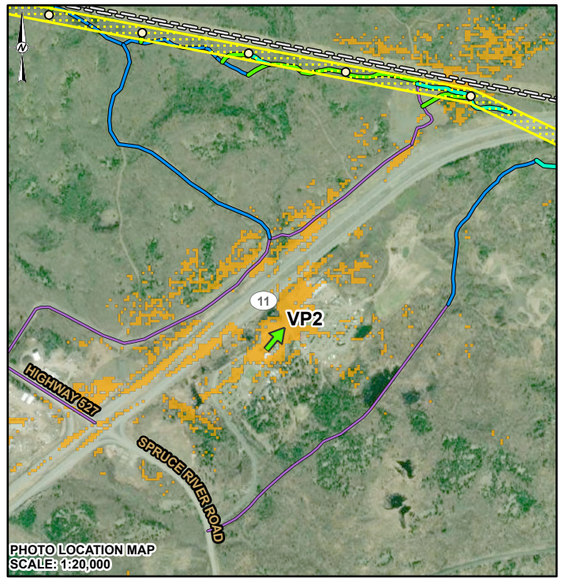
PROJECT SIMULATION



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LEGEND

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- OTHER VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- EXISTING TRANSMISSION LINE
- AREAS THAT ARE POTENTIALLY VISIBLE FROM THE VIEWPOINT
- TOWER LOCATION
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE

PROJECT VISIBILITY ANALYSIS DATA
APPROXIMATE AREA OF ROW VISIBLE FROM THE VIEWPOINT: 2.35 HA
NUMBER, TYPES AND APPROXIMATE HEIGHTS OF STRUCTURES VISIBLE FROM THE KEY VIEWPOINT: 2 230KV DOUBLE CIRCUIT TRANSMISSION TOWER, 48M HIGH

PHOTOGRAPH VIEWPOINT TECHNICAL DATA
CAMERA COORDINATES (UTM NAD 83): 786025.11E 5379125.38N
CAMERA ELEVATION (CGVD28): 257.91M
APPROXIMATE DIRECTION: 310.00 DEGREES T.N.

NOTE(S)
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CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

CONSULTANT
wsp

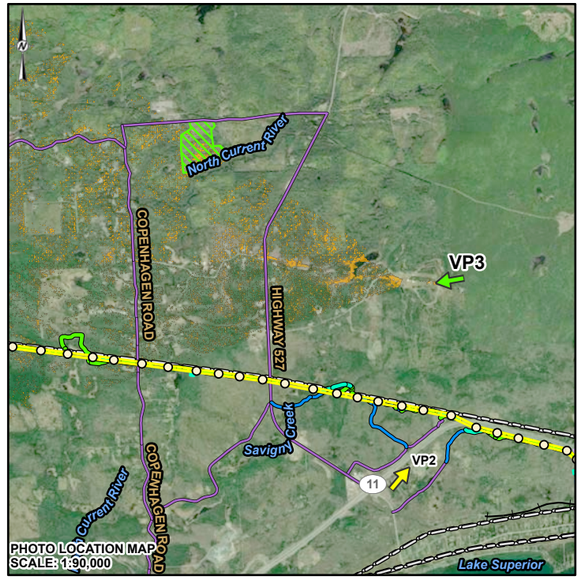
YYYY-MM-DD	2023-10-03
DESIGNED	PJM
PREPARED	JR
REVIEWED	HK
APPROVED	CS

TITLE
VIEWPOINT 2 - VIEW FROM THUNDER BAY KOA CAMPGROUND

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0024	1	7.4-3

EXISTING CONDITIONS

PROJECT SIMULATION



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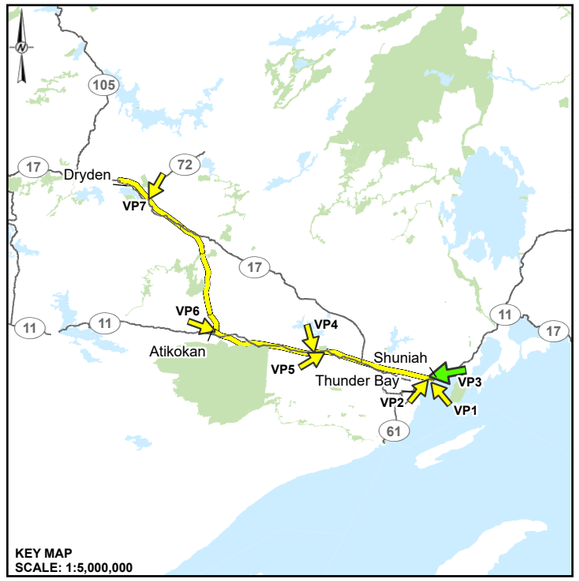

KEY MAP
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LEGEND

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- OTHER VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- RAILWAY
- EXISTING TRANSMISSION LINE
- AREAS THAT ARE POTENTIALLY VISIBLE FROM THE VIEWPOINT
- TOWER LOCATION
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- TEMPORARY LAYDOWN AREA (PULL SITE)
- HELICOPTER PAD
- FLY YARD

PHOTOGRAPH VIEWPOINT TECHNICAL DATA
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CAMERA ELEVATION (CGVD28): 485.98M
APPROXIMATE DIRECTION: 170.00 DEGREES T.N.

PROJECT VISIBILITY ANALYSIS DATA
APPROXIMATE AREA OF ROW VISIBLE FROM THE VIEWPOINT: 19.75 HA
NUMBER, TYPES AND APPROXIMATE HEIGHTS OF STRUCTURES VISIBLE FROM THE KEY VIEWPOINT: 3 230KV DOUBLE CIRCUIT TRANSMISSION TOWERS AND 22 230KV DOUBLE CIRCUIT GUYED TANGENT TRANSMISSION TOWERS, 36M TO 65M HIGH

NOTE(S)
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CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
VIEWPOINT 3 - VIEW FROM WEST SLOPE AT MOUNT BALDY SKI RESORT

CONSULTANT

YYYY-MM-DD	2023-10-03
DESIGNED	PJM
PREPARED	JR
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0024	1	7.4-4

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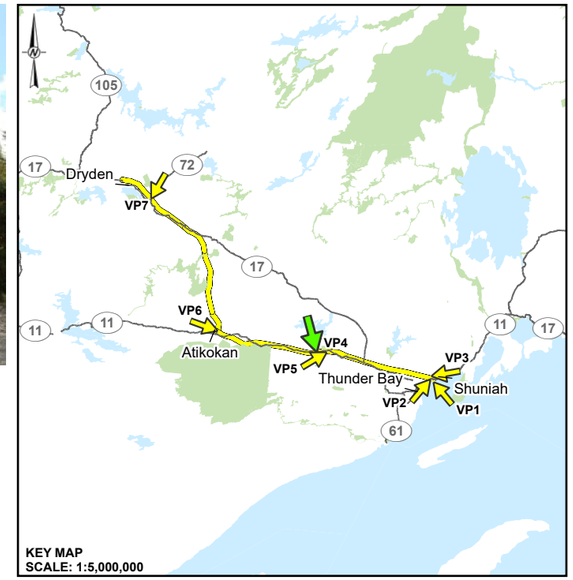

KEY MAP
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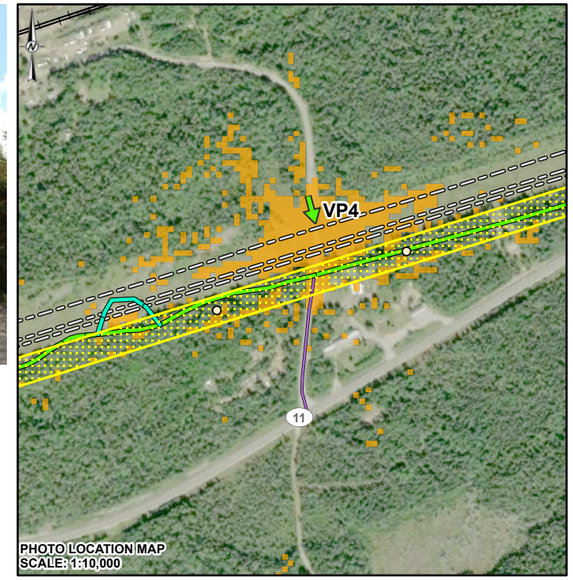
PROJECT SIMULATION



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LEGEND

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- OTHER VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- RAILWAY
- EXISTING TRANSMISSION LINE
- AREAS THAT ARE POTENTIALLY VISIBLE FROM THE VIEWPOINT
- TOWER LOCATION
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE

PROJECT VISIBILITY ANALYSIS DATA
APPROXIMATE AREA OF ROW VISIBLE FROM THE VIEWPOINT: 4.8 HA
NUMBER, TYPES AND APPROXIMATE HEIGHTS OF STRUCTURES VISIBLE FROM THE KEY VIEWPOINT: 2 230KV DOUBLE CIRCUIT TRANSMISSION TOWERS AND 2 230KV DOUBLE CIRCUIT GUYED TANGENT TRANSMISSION TOWERS, 45M TO 65M HIGH

PHOTOGRAPH VIEWPOINT TECHNICAL DATA
CAMERA COORDINATES (UTM NAD 83): 688592.63E 5391704.38N
CAMERA ELEVATION (CGVD28): 461.07M
APPROXIMATE DIRECTION: 75.00 DEGREES T.N.

NOTE(S)
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CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

CONSULTANT
wsp

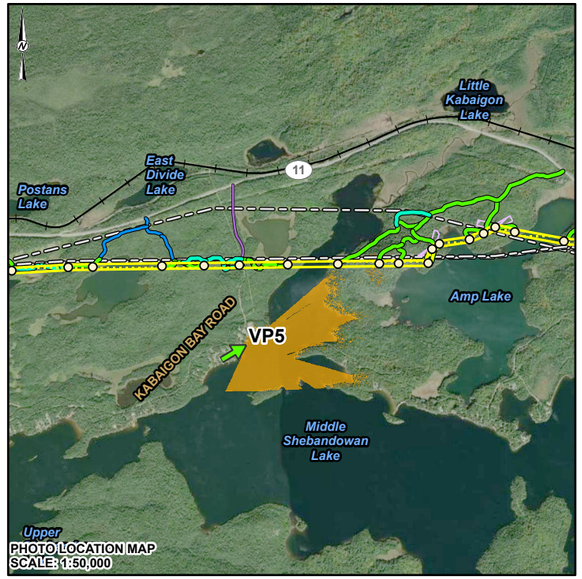
YYYY-MM-DD	2023-10-03
DESIGNED	PJM
PREPARED	JR
REVIEWED	HK
APPROVED	CS

TITLE
VIEWPOINT 4 - VIEW FROM KASHABOWIE ROAD

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0024	1	7.4-5

EXISTING CONDITIONS

PROJECT SIMULATION



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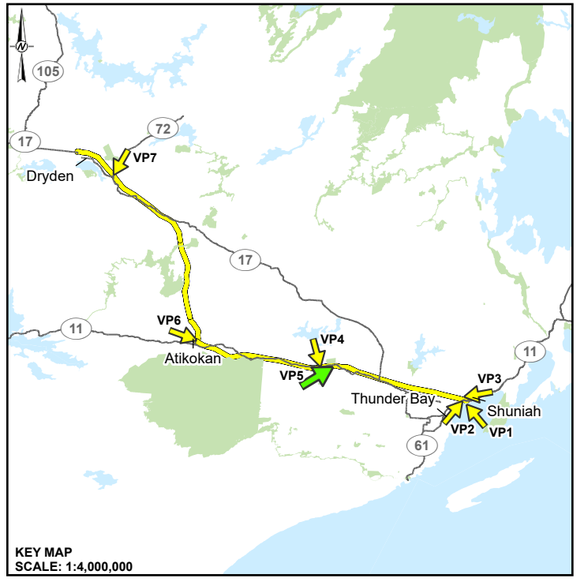

KEY MAP
SCALE: 1:4,000,000

LEGEND

- KEY VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- OTHER VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- RAILWAY
- EXISTING TRANSMISSION LINE
- AREAS THAT ARE POTENTIALLY VISIBLE FROM THE VIEWPOINT
- TOWER LOCATION
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE
- TEMPORARY LAYDOWN AREA (PULL SITE)

PHOTOGRAPH VIEWPOINT TECHNICAL DATA
CAMERA COORDINATES (UTM NAD 83): 697088.50 E 5392739.12 N
CAMERA ELEVATION (CGVD28): 450.21 M
APPROXIMATE DIRECTION: 57.00 DEGREES T.N.

PROJECT VISIBILITY ANALYSIS DATA
APPROXIMATE AREA OF ROW VISIBLE FROM THE VIEWPOINT: 0.05 HA
NUMBER, TYPES AND APPROXIMATE HEIGHTS OF STRUCTURES VISIBLE FROM THE KEY VIEWPOINT: 1 230KV DOUBLE CIRCUIT TRANSMISSION TOWERS AND 1 230KV DOUBLE CIRCUIT GUYED TANGENT TRANSMISSION TOWERS, 36M TO 65M HIGH

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. PHOTOGRAPH COLLECTED JUNE 26, 2023.

REFERENCE(S)
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3. PROJECT DATA PROVIDED BY HYDRO ONE INC.; JANUARY 2023
4. PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
VIEWPOINT 5 – VIEW FROM KABAIGON BAY, SHEBANDOWAN LAKE

CONSULTANT

wsp

YYYY-MM-DD	2023-10-03
DESIGNED	PJM
PREPARED	JR
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0024	1	7.4-6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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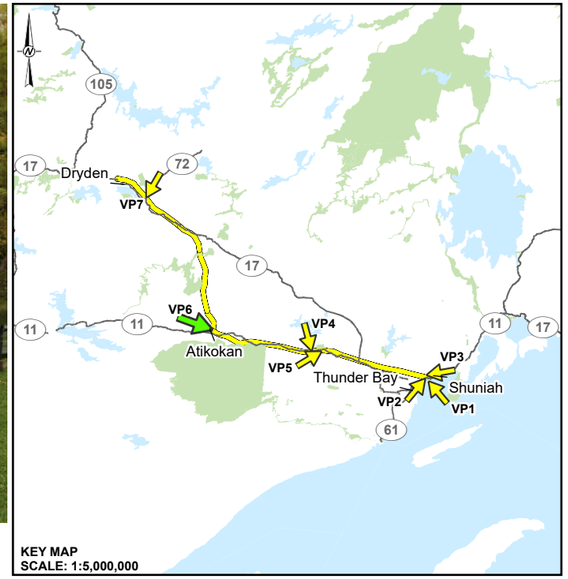
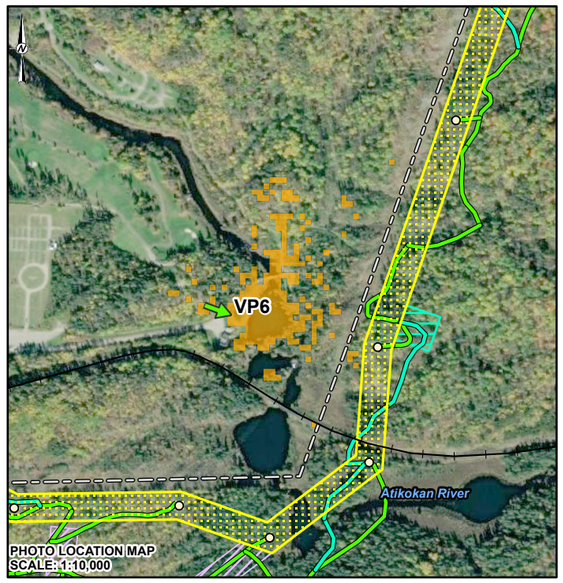


KEY MAP
SCALE: 1:5,000,000

PROJECT SIMULATION



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LEGEND

- KEY VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- OTHER VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- RAILWAY
- EXISTING TRANSMISSION LINE
- AREAS THAT ARE POTENTIALLY VISIBLE FROM THE VIEWPOINT
- TOWER LOCATION
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE
- TEMPORARY LAYDOWN AREA (PULL SITE)
- HELICOPTER PAD

PROJECT VISIBILITY ANALYSIS DATA
APPROXIMATE AREA OF ROW VISIBLE FROM THE VIEWPOINT: 0.00 HA
NUMBER, TYPES AND APPROXIMATE HEIGHTS OF STRUCTURES VISIBLE FROM THE KEY VIEWPOINT: 1 230 KV SINGLE CIRCUIT TRANSMISSION TOWER, 30 M HIGH

PHOTOGRAPH VIEWPOINT TECHNICAL DATA
CAMERA COORDINATES (UTM NAD 83): 604073.09E 5400860.77N
CAMERA ELEVATION (CGVD28): 394.14M
APPROXIMATE DIRECTION: 20.00 DEGREES T.N.

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. PHOTOGRAPHIC INVENTORIES COLLECTED DURING FIELD SURVEYS – OCTOBER 2 – NOVEMBER 2, 2022.

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3. PROJECT DATA PROVIDED BY HYDRO ONE INC.; JANUARY 2023
4. PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

CONSULTANT
wsp

YYYY-MM-DD	2023-10-03
DESIGNED	PJM
PREPARED	JR
REVIEWED	HK
APPROVED	CS

TITLE
VIEWPOINT 6 - VIEW FROM LITTLE FALLS SCENIC LOOKOUT, ATIKOKAN

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0024	1	7.4-7

PATH: S:\Client\HydroOne\Waasigan\09_PRO\J20137728\40_PROD\0024_Visual\20137728-0024-G-0002DB.aprx PRINTED ON: AT: 12:37:15 PM

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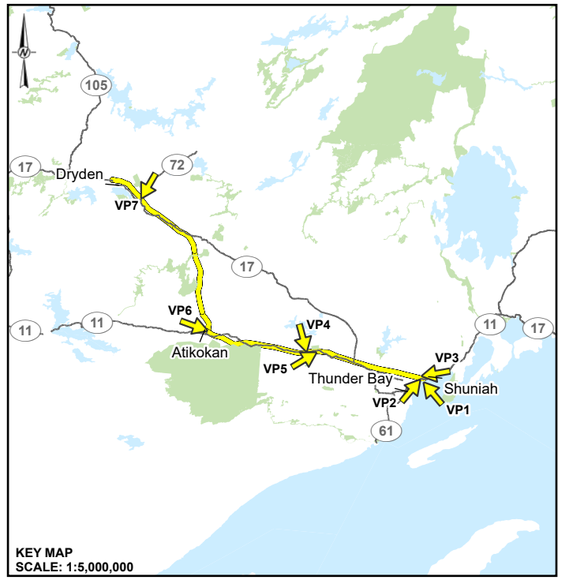
EXISTING CONDITIONS



KEY MAP
SCALE: 1:5,000,000

PROJECT SIMULATION

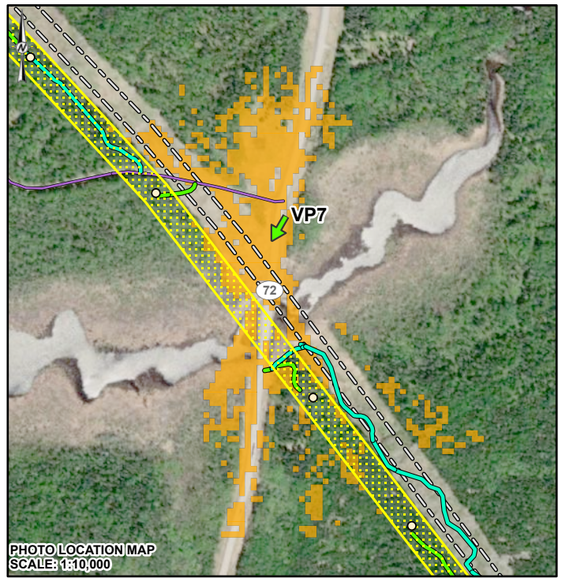


PHOTO LOCATION MAP
SCALE: 1:10,000

LEGEND

- KEY VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- OTHER VIEWPOINT LOCATION AND VIEWING DIRECTION (WSP (GOLDER) 2022)
- EXISTING TRANSMISSION LINE
- AREAS THAT ARE POTENTIALLY VISIBLE FROM THE VIEWPOINT
- TOWER LOCATION
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE

PROJECT VISIBILITY ANALYSIS DATA
APPROXIMATE AREA OF ROW VISIBLE FROM THE VIEWPOINT: 2.91 HA
NUMBER, TYPES AND APPROXIMATE HEIGHTS OF STRUCTURES VISIBLE FROM THE KEY VIEWPOINT: 1 230 KV SINGLE CIRCUIT TRANSMISSION TOWER AND 4 230 KV SINGLE CIRCUIT GUYED TANGENT TRANSMISSION TOWERS, 36 M TO 53 M HIGH

PHOTOGRAPH VIEWPOINT TECHNICAL DATA
CAMERA COORDINATES (UTM NAD 83): 536520.34E 5505368.10N
CAMERA ELEVATION (CGVD28): 373.19M
APPROXIMATE DIRECTION: 120.00 DEGREES T.N.

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. PHOTOGRAPHIC INVENTORIES COLLECTED DURING FIELD SURVEYS – OCTOBER 2 – NOVEMBER 2, 2022.

REFERENCE(S)
1. BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF.

3. PROJECT DATA PROVIDED BY HYDRO ONE INC.; JANUARY 2023
4. PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

CONSULTANT
wsp

YYYY-MM-DD	2023-10-03
DESIGNED	PJM
PREPARED	JR
REVIEWED	HK
APPROVED	CS

TITLE
VIEWPOINT 7 - VIEW FROM HWY 72, DINORWIC

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0024	1	7.4-8

7.4.6 Potential Project-Environmental Interactions

Potential Project-environment interactions were identified through a review of the Project description and existing environmental conditions. The linkages between Project components and activities and potential visual aesthetic effects are identified in Table 7.4-7.

Table 7.4-7: Project–Environment Interactions for Visual Aesthetics

Criteria	Indicator	Project Stage Construction[a]	Project Stage Operation and Maintenance	Project Stage Retirement	Description of Potential Project Environment Interaction
Visual Landscape (Aesthetics)	Change to the visual landscape considering: • Visibility of the Project. • Visual contrast of the Project relative to the existing landscape.	✓	✓	✓	• Change to the visual landscape during construction • Change to the visual landscape during operations and maintenance

✓ = A potential Project-environment interaction could result in an environmental or socio-economic effect.

a) As described in Section 6.3.4.1, the construction scenario assessed as part of the EA is considered bounding and potential and mitigation measures for retirement are not identified separately in this EA.

7.4.7 Potential Effects, Mitigation Measures, and Net Effects

This section provides the potential effects, appropriate mitigation measures and predicted net Project effects for visual aesthetics. A summary of the potential effects, mitigation measures, and net effects are presented in Table 7.4-12.

7.4.7.1 Effects Assessment Methods

This section outlines the methods used to predict and characterize effects of Project-related changes to visual aesthetics. This represents the visual effects that are predicted to result from Project components and activities during construction, and operations and maintenance.

Visual impact assessment is a process that employs systematic analysis to evaluate visual effects to landscapes and viewing opportunities based on the potential for a Project-related disturbance to change the visual qualities and character of the existing visual aesthetics. The visual impact assessment approach applied in this report uses a combination of professional methods to determine how the visual character of the Project would create a visual change in the landscape and affect the current visual aesthetics.

Changes in the indicators defined in Section 7.4.3 were assessed relative to the existing or baseline characterization environment to understand potential Project-related visual effects, as follows:

- Visibility of the Project was estimated using visibility analysis (visibility mapping) results to predict where the Project will be visible and quantitatively measure how visible the transmission structures will be from the key viewpoints; and
- Visual contrast of the Project was determined by qualitative evaluation of the visual character of the Project from simulated images for key viewpoints.

The effect of the visibility of the Project and its visual character were further used to describe the severity of net effects by assessing the level of the visual impact after the application of mitigation measures.

7.4.7.1.1 Project Visibility

Visibility of Project Components

Changes in visibility were characterized using results from the preliminary visibility analysis conducted in Section 7.4.5 and observations of the predicted viewing conditions to quantitatively measure and describe the visibility of Project. The results of the preliminary visibility analysis are provided on the figures in Appendix 7.4-B. Most of the Project is predicted to be partially or fully screened by landforms and/or vegetation and would be either not visible or have limited visibility from many viewing opportunities along major roadways (i.e., Hwy 11), and at most recreation and tourism sites, parks, and communities or settlements within 5 km of the ROW.

However, as described in Section 7.4.5.1.2, the Digital Surface Model (DSM) used for the visibility analysis contains elevation data for natural and artificial features (e.g., buildings,

structures, trees, and bare earth). As a result, visibility of the towers for the Project is overestimated in Appendix 7.4-B (e.g., a tower may only be visibly from the top of a tree or building). The level of visibility is more accurate in large open areas with fewer obstructions (e.g., lakes and large fields). In addition, a portion of the DSM was created using Natural Resources Canada data (NRCan 2022) where LiDAR or FRI data were not present. This occurs between Figures 20 and 27 of Appendix 7.4-B. This data is typically at 20 m resolution, which overestimates the level of visibility of the Project compared to areas that use data with finer resolution.

Where the ROW alignment parallels roadways in close proximity, or crosses perpendicular to a roadway or waterbody, visible portions of transmission structures, conductors, and ROW clearing are likely to be visible.

Project Visibility from Key Viewpoints

A secondary visibility analysis was conducted to quantify the areas of the ROW that are visible from each key viewpoint, the number of visible structures and viewing distances to the Project from the key viewpoint.

7.4.7.1.2 Visual Assessment

7.4.7.1.2.1 Landscape Modelling

Simulated views of the baseline characterization and net effects from the key viewpoints were created using Autodesk 3D Studio Max (3ds Max 2021) software for landscape modelling. 3ds Max allows spatial data to be incorporated into a data driven 3D landscape model that simulates the terrain surface, vegetated landcover, built features, and atmospheric conditions of the landscape. Topography and vegetation features were imported into 3ds Max from base mapping, digital elevation model (DEM) and DSM data. 3D Project components, including structures and lines with design specifications were also incorporated into 3ds Max from 3D AutoCAD files (Valard 2022). Images from the key viewpoint locations were rendered from 3ds Max and photo simulations were created by compositing the rendered images of the Project components with the photographs to illustrate the potential visual effects from the viewpoints Simulated images from each key viewpoint of the baseline characterization and net effects landscapes supported evaluation of the incremental change in visual character by determining a level of visual contrast of the Project.

7.4.7.1.2.2 Visual Contrast

Characterization and rating of the level of visual contrast introduced by the Project was used to determine the overall visual character of the Project in comparison to the baseline characterization setting and determine the level of visual impact to the existing visual aesthetics. This assessment was carried out following the USDI BLM's Visual Resource Contrast Rating system (USDI BLM 1986a). The USDI BLM visual contrast rating system is a systematic process used to analyze potential visual effects of proposed projects and activities. The premise of the system is that the degree to which a proposed project or activity will affect the visual

aesthetics of a landscape depends on the visual contrast created between the Project footprint and the existing landscape. Contrast can be assessed qualitatively by comparing the Project components with the major features in the existing landscape. Specific methods were applied from the Visual Resource Inventory BLM Manual Handbook H-8431-1.

The degree of contrast visible from key viewpoints was determined by describing the Project components related to landform and water, vegetation and built structures using the visual dimensions of colour, form, line, and texture and comparing these to the baseline characterization landscape conditions. Assessment results for each visual dimension were combined into an overall rating of contrast for Project related disturbances to the baseline characterization. The rating classes for overall visual contrast are characterized as follows:

- None – the element contrast is not visible or perceived.
- Weak – the element contrast can be seen but does not attract attention.
- Moderate – the element contrast begins to attract attention and begins to dominate the characteristic landscape.
- Strong – the element contrast demands attention, will not be overlooked, and is dominant in the landscape (USDI BLM 1986a)

These ratings and definitions were used to describe the level of contrast presented by the visual character of the Project within the baseline characterization viewing conditions.

7.4.7.1.2.3 Detailed Visual Impact Assessment from Key Viewpoints

A visual impact assessment was completed for each key viewpoint to determine how the predicted level of visual contrast from the Project is related to assessed scenic quality. This was conducted as a qualitative assessment of the level of visual impact that the Project-related disturbances are predicted to have on the existing visual aesthetics and character.

The contrast ratings (Table 7.4-10) were compared to the Scenic Quality Rating (Table 7.4-6) to determine the level of visual impact of the Project for each key viewpoint. The resulting ratings of visual impacts are defined as follows:

- **Negligible:** a very minor loss or alteration to one or more key elements/features of the existing landscape.
- **Low:** minor loss or alteration to one or more key elements/features of the existing landscape and/or introduction of elements that may be characteristic within the existing landscape.
- **Moderate:** partial loss or alteration to one or more key elements/features of the existing landscape and/or introduction of elements that may be prominent and may partially change the existing landscape character.

- **High:** a loss of or major alteration to key elements/features of the existing landscape and/or introduction of elements considered to change in the existing landscape.

Table 7.4-8 shows the combination of the scenic quality ratings and the visual contrast ratings, which describe the predicted level of visual contrast of the Project features, and the resulting overall visual impact ratings.

Table 7.4-8: Visual Impact Rating System

		Visual Contrast Rating None	Visual Contrast Rating Weak	Visual Contrast Rating Moderate	Visual Contrast Rating Strong
Scenic Quality Rating	**Low**	Negligible	Low	Low	Moderate
Scenic Quality Rating	**Medium**	Negligible	Low	Moderate	Moderate
Scenic Quality Rating	**High**	Low	Moderate	Moderate	High

Note: based on the Guidelines for Landscape and Visual Impact Assessment (LI/IEMA 2002)

7.4.7.2 Change to the Visual Landscape During Construction

7.4.7.2.1 Potential Effects

Visual disturbances are expected to begin during the construction stage and continue incrementally towards the commencement of the operations and maintenance stage. Visual disturbances from the modifications at the transformer stations are expected to be limited given the presence of the existing station and infrastructure.

Construction activities related to the transportation and distribution of personnel, equipment, and materials along access roads, the ROW, and at aggregate pits, temporary construction camps and laydown areas will create temporary changes in visual aesthetics within the RSA.

Construction activity related to surveying and flagging, clearing and grubbing, topsoil stripping, grading, and surfacing will involve crews working progressively in localized areas along the ROW, access roads, temporary laydown areas, turnaround areas, aggregate pits, and temporary construction camps. Vegetation removal will occur in accordance with FMU policies and guidelines (MNRF 2022d). Merchantable timber that will be felled, de-limbed, mulched, or piled at the edge of the ROW will be visible until it can be collected for transport. Non-merchantable vegetation, such as small trees and branches, will be dispersed on the ROW, stockpiled in windrows (no greater than 0.3 m high) a few metres from the edge of the ROW, or piled and burned on-site. Smoke from the burning of slash and debris will be visible in localized

areas where the ROW is being cleared. Small trees and branches that are dispersed on the ROW, or stockpiled in windrows, will be visible until decomposition occurs.

Dust control may be required for the access roads, which will minimize the potential visual effect from the movement and operation of construction equipment and vehicles. Upon completion of Project construction, aggregate pits, construction camps, helicopter pads, temporary laydown areas, and portions of the access road system will be re-vegetated. Revegetation of disturbed areas will re-establish the natural appearance of these areas over time and eliminate the visual effect. Most of these construction activities and components would likely be visible only to those viewers adjacent to the sites and expected to be short in duration.

New access roads will produce a disturbance in forested areas resulting from vegetation removal, grading and gravel surfacing. Changes will likely be most evident where they are visible in foreground viewing distances. The upgrade of existing access roads (e.g., widening, surface hardening) will also result in limited vegetation removal. In areas of flat terrain, roads will not be easily seen due to vegetation screening, unless viewed from a high angle viewing location.

Construction activities related to the erection of transmission structures and conductors will occur throughout the construction stage and result in long-term effects into operation and maintenance. These effects are assessed further as part of the operation and maintenance stage in Section 7.4.7.3.

Overall, construction activities, supporting facilities and vegetation clearing will add evidence of built industrial features that will contrast with the predominantly natural character of the RSA. However, the local setting currently includes existing disturbance patterns from roadway infrastructure (i.e., Hwy 11) and the existing transmission structures (i.e., Hydro One transmission lines), which will reduce the visual contrast of these components.

7.4.7.2.2 Mitigation Measures

Mitigation measures for effects to visual aesthetics during construction have been incorporated into the Project design and will be implemented to minimize negative effects. Mitigation measures considered in the potential effects analysis for visual aesthetics included the following:

- Avoiding new Project footprint disturbances, to the extent practicable, such as using existing roads and trails, and disturbed areas (e.g., area of alteration related to forestry cut blocks, utility corridors).
- Vegetation clearing around canoe routes, portages, and recreational trails will be limited to where necessary for safety standards and compatible vegetation will be retained where practicable to meet regulatory requirements and minimize visual evidence of disturbance from Project activities.

- Retaining existing vegetation and landforms, to the extent practicable, to provide screening of activity and Project components.
- Removing unnecessary facilities, and reclaiming temporary access roads and water crossings, helicopter pads, temporary laydown areas, aggregate pits, and temporary construction camps.
- Hydro One will work with parks administrators and the MNRF to implement appropriate protocols within affected parks and protected areas as required, including managing merchantable timber cleared by the Project. Trees of merchantable value will be felled, de-limbed, mulched, or piled at the edge of the ROW according to clearing contract requirements.
- Small trees and branches will be dispersed on the ROW or piled and burned on-site in accordance with the *Forest Fires Prevention Act* and Regulation 207/96 Outdoor Fires under this Act.
- Slash and debris resulting from mechanical clearing operations will be spread to ensure depths do not exceed 0.3 m or will be piled and burned. Slash and debris windrows are not expected to be required, but if they are required the windrows will be left open at all roads or access trails, along property lines, and along wetlands and watercourses to provide access for wildlife not capable of crossing the low vegetation pile The windrows will be allowed to decompose naturally.
- Areas of non-merchantable vegetation that must be cleared will be piled and burned or mulched.
- Hydro One will plant seedlings along new off-ROW access roads in conservation reserves and provincial parks (limited to roads that require new clearing and new construction). Where existing roads and trails are used, these areas will be reclaimed to their pre-existing condition to the extent practicable. In addition, Hydro One will plant seedlings in the one temporary helicopter pad within the Campus Lake Conservation Reserve following construction.
- New, on-ROW trails will be reclaimed, and topsoil will be rolled back over the reclaimed road. Areas that are subject to erosion, and waterbody crossing locations that have been removed after construction will be seeded with an approved forestry seed mix as appropriate.
- The reclaimed on-ROW access road will naturally vegetate along with the remainder of the right-of-way and will be managed to support vegetation that is compatible with the safe operation of the transmission line.
- Monitoring and managing reclamation activities to address potential visual effects, including soil erosion and revegetation; and

- Controlling dust through implementation of a Dust Control Plan.

7.4.7.2.3 Net Effects

Construction activities, supporting facilities and vegetation clearing will introduce visible disturbances to the existing landscape during construction that can negatively affect visual aesthetics. Visibility of supporting facilities and maintenance of vegetation disturbances related to the construction of the Project can contrast with the existing landscape and negatively affect visual aesthetics. These potential effects have been identified as having a net effect because it is predicted that there will be a change to the visual aesthetics (e.g., maintenance of the visual aesthetics of the Project area relative to the existing surrounding landscape) after the implementation of mitigation measures identified above. Therefore, these net effects are carried forward to the net effects characterization, including an assessment of significance.

7.4.7.3 Change to the Visual Landscape During Operations and Maintenance

7.4.7.3.1 Potential Effects

A general overview of the operation and maintenance activities is provided in Section 3.4.2. The following key operation components and activities are relevant to the assessment of potential Project visual effects:

- Operation of the transmission line and stations on a continuous basis;
- Maintenance and inspection of the transmission line and stations and associated infrastructure, ROW and permanent access roads; and
- Vegetation management.

Vegetation encroaching on electrical clearance limits will be removed or pruned along the ROW to provide clearance for the transmission line and maintenance crew access. A select number of access roads will remain in place to provide access for transmission line maintenance activities and may require re-clearing prior to entry. It is assumed that 30% of all access roads (existing and new access) will be permanent.

The erection of transmission structures, clearing of vegetation along the ROW and permanent access roads, and grading along access roads will create visual effects that will last beyond construction and into the operation and maintenance stage. Long-term visual changes will be caused primarily by the presence of visible transmission structures, conductors, and mechanical vegetation clearing in forested areas for the ROW and permanent access roads.

Maintenance activities will occur on a regular, or as needed, basis and visibility will be limited to viewers intermittently seeing vehicles, equipment, and maintenance personnel along the ROW, at the transformer stations and along access roads. Similar to construction, these activities will be temporary, and will have a localized effect on visual aesthetics.

7.4.7.3.1.1 Project Visibility from the Key Viewpoints

As described in the effects assessment methods, a secondary visibility analysis was conducted to quantify the areas of the ROW and number of transmission structures that are visible from each of the seven key viewpoints. A summary of the visible areas of cleared ROW, the number of visible structures and viewing distances to the Project from the key viewpoints is provided in Table 7.4-9.

Table 7.4-9: Project Visibility from the Key Viewpoints

Viewpoint	Name	Number of Visible Structures	Visible Area of ROW Clearing (ha)	Approximate Viewing Distance to the Project (m)
VP1	Lake Superior	11	16.0	1,500
VP2	Thunder Bay KOA Campground	2	2.4	800
VP3	Mount Baldy Ski Resort	25	19.8	4,600
VP4	Kashabowie Road	4	4.8	65
VP5	Kabaigon Bay, Shebandowan Lake	2	0.1	1,100
VP6	Little Falls Scenic Lookout	1	0	227
VP7	Hwy 72, Dinorwic	5	2.9	81

Ha = hectares; Hwy = highway; KOA = Kampgrounds of America; ROW = right-of-way; VP = Viewpoint

Based on the results in Table 7.4-9, there are a large number of structures and a large area of ROW clearing that will potentially be visible from VP1 and VP3. However, the Project is being viewed from a middle ground viewing distance (>1 km) and the Project features are not easily discernible give the greater distances as shown in the simulation on Figures 4.7-2 and 4.7-4.

VP2 has a view of the Project components from a foreground viewing distance that is approaching the limit for LSA and there is only one tower that is clearly visible and one other tower slightly visible above the tree line. The transmission lines are not discernable from this viewing distance.

At viewpoint locations VP4, and VP7, the viewers have a similar foreground viewing distance from one side of the existing ROW. Visible ROW clearing is also similar for these three viewpoints. The Project features are very discernable given the close proximity of the viewers.

At VP5, viewers have a middle ground viewing distance at slightly over 1 km from the visible ROW clearing. This visible area of ROW clearing will be small at approximately 0.1 ha. Two towers will be visible above the tree line, with the second tower being slightly larger than the first

tower at the top of the hill. The transmission lines may be discernable from this viewing distance. The photograph for VP5 was zoomed in greater than other photos captured for this assessment and does not represent what the average human eye would see, meaning that features in the photo may be more discernible than viewing with the naked eye.

At VP6, the viewers have a foreground viewing distance and only one structure will be visible with some lines above the existing tree line. The ground surface where the ROW will be cleared will not be visible. The tops of trees that will be cleared may potentially change the existing skyline.

7.4.7.3.1.2 Visual Contrast of Project Components

Changes in visual aesthetics were characterized by qualitatively evaluating the Project components from key viewpoints that were determined to have a view of the Project to determine the potential level of contrast of the Project within the baseline characterization environment. Simulated images of the Project elements visible from each key viewpoint were used to illustrate and evaluate the predicted visual contrast using the methods detailed in Section 7.4.8.1.3. An overall contrast rating was assigned for each key viewpoint. A summary of the visual contrast ratings is provided in Table 7.4-10 along with a rationale for the rating of each visual dimension used in the evaluation. Simulations characterizing the visual effects of the Project are shown on Figure 7.4-2 through to Figure 7.4-8.

Table 7.4-10: Visual Contrast Ratings for the Key Viewpoints

Viewpoint	Name	Visual Contrast Rating	Rationale
VP1	Lake Superior	Weak	Additional horizontal linear clearing is visible but is within existing disturbance pattern.
VP2	Thunder Bay KOA Campground	Moderate	Vertically oriented tower and horizontal transmission conductors contrast with landforms and vegetation but are small within the setting.
VP3	Mount Baldy Ski Resort	Weak	Vertically oriented towers contrast with forest vegetation but are subordinate in scale and occupy a very small part of the setting.
VP4	Kashabowie Road	Moderate	Additional horizontally oriented transmission conductors and vertically oriented transmission structures contrast with landforms and vegetation but are small within the setting.
VP5	Kabaigon Bay, Shebandowan Lake	Moderate	Additional horizontally oriented transmission conductors and vertically oriented transmission structures contrast with landforms and vegetation but are small within the setting.

Viewpoint	Name	Visual Contrast Rating	Rationale
VP6	Little Falls Scenic Lookout	Weak	Vertically oriented tower portion contrasts with vegetation but is small within the setting.
VP7	Hwy 72, Dinorwic	Moderate	Additional horizontally oriented transmission conductors and vertically oriented transmission structures.

Hwy = Highway; KOA = Kampgrounds of America; VP = Viewpoint.

7.4.7.3.1.3 Visual Impact of the Project

Results for visual impact ratings for each key viewpoint are summarized in Table 7.4-11.

The landscape, as viewed from Lake Superior at VP1, has existing modifications from transmission corridors and infrastructure. The Project's linear clearing and infrastructure will result in additional alterations that may be noticeable, but will be subordinate elements within the view resulting in a moderate visual impact rating.

The landscape at VP2 is already modified due to the existing transmission structures. A portion of the Project's ROW clearing and transmission structures (i.e., tower and conductors) will be visible behind the campground facility development. It is anticipated that visual contrast will be moderate and Project elements may be noticeable but subordinate elements within the view resulting in a moderate visual impact rating.

The landscape, as viewed from Mount Baldy Ski Resort at VP3, has existing modifications from transmission corridors and infrastructure. At VP3, visible portions of the Project clearing and infrastructure are predicted to be distant, inconspicuous elements within the broad, panoramic view. While the visual contrast is weak, the scenic quality rating at this viewpoint location is high, resulting in a moderate visual impact rating.

The landscapes at viewpoint locations VP4, and VP7 are already modified due to the existing transmission ROW clearing and infrastructure. Viewers at these locations will experience moderate visual effects due to additional vegetation clearing and the installation of additional transmission infrastructure. Project components are anticipated to generally not attract the attention of viewers at these existing modified landscape settings. The visual impact rating at these viewpoints locations is low.

The landscape at VP5 is already modified due to the visibility of a small area of existing ROW clearing and existing transmission structures (i.e., tower and conductors) that are visible above the tree line. The Project's linear clearing and infrastructure will result in additional alterations to the landscape. The zoomed in single frame photograph used in the simulation for figure 7.4-6 does not capture the surrounding landscape character the way that a panoramic photograph taken with a 50 mm lens would. However, knowing the distance of slightly over 1 km from the

Project and the expansive views of the surrounding landscape from the edge of the lake, it is anticipated that visual contrast will be moderate, and the Project elements may be noticeable but subordinate elements within the view. Due to the high visual quality rating and the introduction of elements that may be prominent and may partially change the existing landscape character, the visual impact was rated moderate.

At VP6, the view to the scenic water features will remain the dominant focal point of the landscape scene. The small portion of the Project elements that are not screened by mature vegetation may be noticeable but are predicted to be subordinate in the view. While the visual contrast is weak, the scenic quality rating at this viewpoint location is high, resulting in a moderate visual impact rating.

In the locations where views of vegetation clearing and transmission structures and conductors are unobstructed or viewers are located adjacent to the visible Project components, the Project is predicted to be more visually prominent within the landscape and result in a more evident level of disturbance. Overall, the visual impact of the Project is expected to be low to moderate and would be likely to result in minimal disturbance to most viewing opportunities within the RSA, which is expected to retain the existing visual character.

Based on results of the visual impacts from the key viewpoints, the visual impact to private property owners is expected to be low to moderate as well given the existing transmission line ROW clearing and infrastructure adjacent to or near their properties; however, the rating will also be dependant on their proximity to, and visibility of, the Project components.

The Project is not proposed to be directly adjacent to, or pass through, any First Nation reserves. The northeastern portion of the Wabigoon Lake Ojibway Nation reserve is within the RSA (as shown on Figure 7.4-1); however, this area is expected to have limited visibility given the distance away from the Project, as shown in the structure visibility mapping (Appendix 7.4-B). There are no other First Nation reserves within the visual aesthetics RSA. First Nation and Métis community members are expected to experience some visual impacts near the Project components using lands or travelling through their traditional territory.

Based on results of the visual impacts from the key viewpoints, the visual impact to campers and recreational users at Provincial Parks is expected to be low to moderate given the existing transmission line ROW clearing and infrastructure adjacent to or near the Parks; however, the rating will also be dependant on their proximity to, and visibility of, the Project components. Visibility Mapping (Appendix 7.4 B) shows that the Project will be visible from some Provincial Parks and the lakes within them. The views from the lakes and rivers within the Provincial Parks will be similar to Figures 7.4-2 and Figure 7.4-7 where water will be visible in the foreground and transmission line infrastructure will be visible above the tree line, and at some locations, ROW clearing may also be more visible.

The Project will cross Turtle River – White Otter Lake Provincial Park and there is potential for recreational users such as back country canoeists and snowmobilers to come in close proximity to the Project. A canoeing route that is also used as a snowmobile route will cross

approximately 76 m of ROW and another 23 m of road access easement. However, the presence of existing, adjacent transmission line ROW clearing, and infrastructure will result in moderate visual effects.

The Project will cross Campus Lake Conservation Reserve and there is potential for recreational users such as back country canoeists and snowmobilers to come in close proximity to the Project. Canoeists and snowmobilers will cross the ROW and road access easements at multiple locations within the reserve. However, the presence of existing, adjacent transmission line ROW clearing, and infrastructure will result in moderate visual effects. Recreational use of the area is also relatively low given the limited existing access.

The Project ROW will not be passing through Quetico Provincial Park and will be adjacent to existing transmission line ROW clearing and infrastructure. However, given the park's wilderness classification, the volume of park users and that structures may be visible in new areas depending on the structure height, the visual impact to Quetico Provincial Park, will be moderate. Some project structures will be visible above the tree line from Win Lake, within the LSA and Quetico Provincial Park at a distance of approximately 0.75 km. Many of the other open areas within Quetico Provincial Park, such as Pickerel Lake, are outside the LSA; however, recreational users to the Path of the Paddle Trail are expected to have some visibility of the Project structures from the RSA.

The Project structures will be visible above the tree line from Aaron Provincial Park. However, the visual impact to campers and recreational water users at the Park is expected to be low given the distance from the Project (approximately 2.5 Km) and the presence of the existing, adjacent transmission line ROW clearing and infrastructure.

The visual impact to recreational users at Kashabowie Provincial Park is expected to be low given the Park lies outside the LSA and the majority of the park is densely treed with limited visibility of the Project. The Project is also adjacent to existing transmission line ROW clearing and infrastructure.

The Project will cross the White Otter Enhanced Management Area and there is potential for recreational users, such as back country canoeists and snowmobilers, to come in close proximity with the Project. Canoeists and snowmobilers may cross the ROW and road access easements at multiple locations within the enhanced management area. However, the presence of existing, adjacent transmission line ROW clearing, and infrastructure will result in moderate visual effects.

The Project will overlap approximately 0.6 ha of the Swamp River ANSI. The effects are expected to be moderate as the ROW will be located within the presence of existing, adjacent transmission line ROW clearing, infrastructure, and existing access road.

Table 7.4-11: Visual Impact Ratings for the Key Viewpoints

Viewpoint	Name	Scenic Quality	Visual Contrast	Visual Impact Rating	Rationale for Impact Rating
VP1	Lake Superior	High	Weak	Moderate	Alteration to the existing landscape through the introduction of Project components that are evident and may partially change the existing landscape character for viewers at this location.
VP2	Thunder Bay KOA Campground	Medium	Moderate	Moderate	Alteration to the existing landscape through the introduction of Project components that are evident and may partially change the existing landscape character for viewers at this location.
VP3	Mount Baldy Ski Resort	High	Weak	Moderate	Alteration to the existing landscape through the introduction of Project components that are evident and may partially change the existing landscape character for viewers at this location.
VP4	View from Kashabowie Road	Low	Moderate	Low	Minor loss or alteration to one or more key elements or features of the existing landscape and/or introduction of elements that may be characteristic within the existing landscape.
VP5	Kabaigon Bay, Shebandowan Lake	High	Moderate	Moderate	Alteration to the existing landscape through the introduction of Project components that are evident and may partially change the existing landscape character for viewers at this location.
VP6	Little Falls Scenic Lookout	High	Weak	Moderate	Alteration to the existing landscape through the introduction of Project components that are evident and may partially change the existing landscape character for viewers at this location.

Viewpoint	Name	Scenic Quality	Visual Contrast	Visual Impact Rating	Rationale for Impact Rating
VP7	Hwy 72, Dinorwic	Low	Moderate	Low	Minor loss or alteration to one or more key elements/features of the existing landscape and/or introduction of elements that may be characteristic within the existing landscape.

Hwy = Highway; KOA = Kampgrounds of America; VP = Viewpoint.

7.4.7.3.2 Mitigation Measures

Mitigation measures for effects to visual aesthetics during the operations and maintenance stage have been incorporated into the Project design and will be established to minimize negative effects. Mitigation measures considered in the potential effects analysis for visual aesthetics included the following:

- Selection and location of structures to minimize visibility and visual contrast with the existing conditions during operations and maintenance.
- Maintenance will be performed to Hydro One's vegetation standard. Vegetation that will impede Hydro One's standing and falling clearance distances to the conductor will be addressed by Hydro One Forestry Services. Clearance distances align with the NERC Vegetation Management standard FAC-003 and the minimum vegetation clearance distance required to prevent flashover.
- Use of vegetation management practices to maintain vegetation within the transmission line ROW. For example. implementation of a "wire zone – border zone" approach to vegetation management (Ballard et al. 2007) in the ROW. This method manages vegetation in the two zones, where herb/grass/forb species are promoted in the wire zone, and shrub/short tree species are promoted in the border zone. This approach allows for the safe delivery of electricity while also fostering wildlife habitat and biodiversity, and simultaneously developing overall aesthetics and decreased long-term vegetation management costs.

7.4.7.3.3 Net Effects

The erection of new transmission structures and continued visibility of built structures and maintenance of vegetation disturbances related to the operation and maintenance of the Project can contrast with the existing landscape and negatively affect visual aesthetics. These potential effects have been identified as having a net effect because it is predicted that there will be a change to the visual aesthetics (e.g., maintenance of the visual aesthetics of the Project area relative to the existing surrounding landscape) after the implementation of mitigation measures identified in Table 7.4-12 below. Therefore, these net effects are carried forward to the net effects characterization; including an assessment of significance.

7.4.7.4 Summary of Potential Effects, Mitigation Measures, and Predicted Net Effects

Table 7.4-12 provides a summary of the Project-environment interactions assessment, mitigation measures and net effects.

Table 7.4-12: Potential Effects and Mitigation Measures to Visual Aesthetics

Project Component or Activity	Potential Effect	Mitigation Measures	Net Effect
Project activities during the construction stage: • Clearing, grading, grubbing of vegetation, and stockpiling of materials along the ROW and other access and construction areas and construction of infrastructure (e.g., access roads, temporary laydown areas, and temporary construction camps); • Assembly and erection of transmission structures including staking of structure and guy anchor locations and transformer stations; • Conductor installation, including cable splicing; and • Reclamation of aggregate pits, decommissioned access roads, temporary laydown areas, and temporary construction camps.	Change to the visual landscape during construction	**Mitigation measures to visual aesthetics include:** • Avoiding new Project footprint disturbances, to the extent practicable, such as using existing roads and trails, and disturbed areas (e.g., area of alteration related to forestry cutblocks, utility corridors). • Vegetation clearing around canoe routes, portages, and recreational trails will be limited to where necessary for safety standards and compatible vegetation will be retained where practicable to meet regulatory requirements and minimize visual evidence of disturbance from Project activities. • Retaining existing vegetation, and landforms, to the extent practicable, to provide screening of activity and Project components. • Removing unnecessary facilities, and reclaiming aggregate pits, temporary access roads and water crossings, helicopter pads, temporary laydown areas, and temporary construction camps. • Hydro One will work with parks administrators and the MNRF to implement appropriate protocols within affected parks and protected areas as required, including managing merchantable timber cleared by the Project. Trees of merchantable value will be felled, de-limbed, mulched, or piled at the edge of the ROW according to clearing contract requirements. During operation and maintenance, the Project will follow standards that can set out directions that involve the removal of any non-compatible vegetation from the ROW.	Net change to the visual landscape during construction

Project Component or Activity	Potential Effect	Mitigation Measures	Net Effect
		• Small trees and branches will be dispersed on the ROW or piled and burned on-site in accordance with the *Forest Fires Prevention Act* and Regulation 207/96 Outdoor Fires under this Act. • Slash and debris resulting from mechanical clearing operations will be spread to ensure depths do not exceed 0.3 m or will be piled and burned. Slash and debris windrows are not expected to be required, but if they are required the windrows will be left open at all roads or access trails, along property lines, and along wetlands and watercourses to provide access for wildlife not capable of crossing the low vegetation pile. The windrows will be allowed to decompose naturally. • Areas of non-merchantable vegetation that must be cleared will be piled and burned or mulched.	

Project Component or Activity	Potential Effect	Mitigation Measures	Net Effect
		• Hydro One will plant seedlings along new off-ROW access roads in conservation reserves and provincial parks (limited to roads that require new clearing and new construction). Where existing roads and trails are used, these areas will be reclaimed to their pre-existing condition to the extent practicable. In addition, Hydro One will plant seedlings in the one temporary helicopter pad within the Campus Lake Conservation Reserve following construction. • New, on-ROW trails will be reclaimed, and topsoil will be rolled back over the reclaimed road. Areas that are subject to erosion, and waterbody crossing locations that have been removed after construction will all be seeded with an approved forestry seed mix. • The reclaimed on-ROW access road will naturally vegetate along with the remainder of the right-of-way and will be managed to support vegetation that is compatible with the safe operation of the transmission line. • Monitor and manage reclamation activities to address potential visual effects, including soil erosion and revegetation. • Control dust through implementation of a Dust Control Plan.	

Project Component or Activity	Potential Effect	Mitigation Measures	Net Effect
Project activities during the operation and maintenance stage: • Operation and maintenance of transmission line, transmission line ROW and permanent access roads; and • Operation and maintenance of transformer station and connection facility.	Change to the visual landscape during operations and maintenance	• Selection and location of structures to minimize visibility and visual contrast with the existing conditions during operations and maintenance. • Maintenance will be performed to Hydro One's vegetation standard. Vegetation that will impede Hydro One's standing and falling clearance distances to the conductor will be addressed by Hydro One Forestry Services. Clearance distances align with the NERC Vegetation Management standard FAC-003 and the minimum vegetation clearance distance required to prevent flashover. • Use of vegetation management practices to maintain vegetation within the transmission line ROW. For example, implementation of a "wire zone – border zone" approach to vegetation management (Ballard et al. 2007) in the ROW.	Net change to the visual landscape during operations and maintenance

iROW = right-of-way

7.4.8 Net Effects Characterization

7.4.8.1 Net Effects Characterization Approach

The effects assessment approach followed the general process described in Section 7.4.8.1 (Effects Assessment Methods). Net effects are described using the significance factors identified in Section 7.4.8.1.4.

Results from the visual impact assessment rating were used to determine the magnitude of net effects on visual aesthetics as this rating provides an indication of the predicted intensity of the net effect as described in Table 7.4-13.

Table 7.4-13: Magnitude Effect Levels for Visual Aesthetics

Net Effect	Low	Moderate	High
Net change to the visual landscape from existing conditions	Effect has limited or no visibility and average visual impact rating of the Project is low; there is minimal visual change compared to baseline.	Effect is visible and average visual impact rating of the Project is moderate; there is evident visual change compared to baseline.	Effect is highly visible and average visual impact rating of the Project is high; there is a substantial visual change compared to baseline.

7.4.8.1.1 Net Effects Characterization

A summary of the characterization of net effects of the Project on visual aesthetics is provided in Table 7.4-14. Net effects are described after the implementation of effective mitigation measures, and summarized according to direction, magnitude, geographic extent, duration/reversibility, frequency, and likelihood of the effect occurring following the methods described in Section 5.6.

7.4.8.1.2 Net Changes to the Visual Landscape During Construction

Construction of the Project will require use of land for temporary activity related to construction camps, access roads, laydown areas and related facilities, which will be reclaimed following construction resulting in a continual net effect with a short-term duration. Disturbance related to vegetation clearing of the ROW and access roads will be long-term and persist for the life of the Project in areas that are not reclaimed after construction. The proposed mitigation measures will partially address potential visual effects associated with the Project. For most viewing locations of the Project during the construction stage, the negative effect would be of low magnitude as visibility would be partially or fully obstructed by surrounding vegetation. Locations closer the Project footprint may experience greater visual effects; however, considering the presence of existing linear infrastructure on the landscape, the net effects are expected to be moderate. The geographic extent of the net effect would be limited to viewing opportunities in the RSA; however, the Project effects would be most discernible within the LSA. Overall, the net effects of the Project during construction are expected to have a low to moderate magnitude.

7.4.8.1.3 Net Changes to the Visual Landscape During Operation and Maintenance

Operation and maintenance of the Project will result in long-term and continual changes to the landscape related to the presence of transmission structures and clearing of vegetation along the ROW and permanent access roads. The proposed mitigation measures will partially address potential visual effects associated with the Project. The visual impact rating for the seven key viewpoints includes two viewpoints with a low visual impact rating and five with a moderate visual impact rating, which represent the range of different types of viewpoints available in the LSA. The visual impacts within parks and protected areas are expected to be low to moderate magnitude depending on the proximity of the area to the Project and considering the presence of existing linear infrastructure on the landscape. For most other viewing locations within the LSA that are not identified as key viewpoints, the net effect would be of negligible to low magnitude as visibility of the Project would be partially or fully obstructed by surrounding vegetation or the visible Project components would blend readily into the disturbance pattern from existing transmission line infrastructure. The geographic extent of the net effect would be limited to viewing opportunities in the RSA; however, the Project effects would be most discernible within the LSA. Overall, the net effects of the Project during operations and maintenance are expected to have a low to moderate magnitude.

7.4.8.1.4 Assessment of Significance

The assessment of significance of net effects of the Project is informed by the interaction between the significance factors, with magnitude, duration, and geographic extent being the most important factors. As set out in Section 5.6.5, a predicted net effect to the visual aesthetics criterion would be considered significant if it is assessed as:

- High magnitude;
- Long-term to permanent in duration; and
- Occurring at any geographical extent.

Taking into account the implementation of the mitigation measures, the magnitude of the net effects for changes to the visual landscape during the construction, and operation and maintenance stages is low. As a result, the net effects for changes to the visual landscape are assessed as not significant.

Table 7.4-14: Summary of Predicted Net Effects on the Visual Environment

Criteria	Net Effect	Direct / Indirect	Direction	Magnitude	Geographic Extent	Duration / Reversibility	Frequency	Probability of Occurrence	Significance
Visual Aesthetics	Net change to the visual landscape during construction	Direct	Negative	Low/Moderate	Local to Regional	Short-term	Continual	Certain	Not Significant
Visual Aesthetics	Net change to the visual landscape during operations and maintenance	Direct	Negative	Low/Moderate	Local to Regional	Long-term	Continual	Certain	Not Significant

7.4.9 Cumulative Effects Assessment

In addition to assessing the net environmental effects of the Project, which considered past and present developments, this assessment also evaluates and assesses the significance of net effects from the Project that overlap temporally and spatially with effects from other reasonably foreseeable future developments (RFDs) and activities (i.e., cumulative effects).

For a criterion that has identified net effects, it is necessary to determine if the effects from the Project interact both temporally and spatially with the effects from one or more past, present, or RFD or activities, since the combined effects may differ in nature or extent from the effects of individual Project activities. Where information is available, the cumulative effects assessment estimates or predicts the contribution of effects from the Project and other developments on the criteria, in the context of natural changes in the environment.

In the assessment of Project's net effects, changes to visual aesthetics from the Project are compared to current conditions. It is recognized that the previous and ongoing development of infrastructure within the RSA has changed the aesthetic landscape over time. The ongoing presence of infrastructure such as roads and existing utility lines will continue to represent an aesthetic change in the region to which the Project represents an incremental addition.

For this assessment, the net effects characterized in Table 7.4-14 are carried forward to a cumulative effects assessment if they have a likelihood of occurrence of 'probable' or 'certain' and a non-negligible magnitude. Net effects with this characterization are most likely to interact with other RFDs.

Based on this assessment, the following net effects to visual aesthetics listed in Table 7.4-14 are carried forward to the cumulative effects assessment:

- Net changes to the visual landscape during construction; and
- Net changes to the visual landscape during operations and maintenance.

The cumulative effects assessment for visual aesthetics is primarily qualitative and presents a reasoned narrative describing the outcomes of interacting cumulative effects for visual aesthetics criteria.

A list of the RFDs that were considered for this EA are presented in Section 9.0, Table 9.0-1. Of these projects, the RFDs listed in Table 7.4-15 were identified as being probable to occur within the RSA and, therefore, have potential to have net effects within the RSA.

Table 7.4-15: Reasonably Foreseeable Developments that Overlap and Interact with the Regional Study Area

ID	Project	Spatial Overlap of Net Effects	Temporal Overlap of Net Effects	Included in Cumulative Effects Analysis
7	Paved shoulders, Resurfacing Highway 11	No	Yes	No
8	Blind Creek Culvert rehabilitation	No	Yes	No
12	Hwy 17 resurfacing	No	Yes	No
17	Highway 11, 11B resurfacing, paved shoulders	No	Yes	No
18	Highway 11 resurfacing, paved shoulders	No	Yes	No
19	Highway 102, resurfacing	No	Yes	No
20	CPR Kaministiquia and CNR overheads, bridge rehabilitation and bridge removal	No	Yes	No
21	Seine River Bridge, rehabilitation	No	Yes	No
23	Revell River No. 3 Bridge, rehabilitation	No	Yes	No
24	Treasury Metals Inc. Goliath Gold Project	Yes	Yes	Yes
25	Rehabilitation of Steep Rock Mine	Yes	Yes	Yes
31	Commercial Forestry	Yes	Yes	Yes

With the exception of RFDs 24, 25 and 31, these RFDs are not expected to have net effects that overlap spatially with the Project considering given the short-term nature of their construction and that they are focused on restoring and repairing existing structures already visible on the landscape.

A summary of the potential cumulative effects on visual aesthetics for RFDs 24, 25 and 31 is provided in Table 7.4-16.

Table 7.4-16: Summary of Cumulative Effect Interactions for Visual Aesthetics

Project/Activity	Potential Cumulative Effect	Rationale for Potential Cumulative Effect
Treasury Metals Inc. Goliath Gold Project	Change to the visual landscape during construction and operations and maintenance	Potential visibility of Project elements and Project-related construction disturbance (e.g., industrial traffic, dust) in combination with potential visibility of active mining site disturbance.
Rehabilitation of Steep Rock Mine	Change to the visual landscape during operations and maintenance	The rehabilitation of Steep Rock Mine will result in the flooding of a portion of the LSA to accommodate the final end pit lake elevation (described below). This may increase the visibility of the transmission line for recreational uses of the lake.
Commercial Forestry	Change to the visual landscape during construction and operations and maintenance	Ongoing forestry activities including active clearing may interact with the Project during construction, and operations and maintenance.

Treasury Metals Inc. Goliath Gold Project

The RFD ID 24 (Goliath Gold Project) involves the construction, operation and decommissioning of an open pit and underground gold mine. The Goliath Gold Project will be developed on both sides of the proposed ROW for the Project. Expected activities and features that may impact visual aesthetics include potential disturbance resulting from infrastructure development, mineral exploration, and mining activity. These activities could cause cumulative effects to the visual landscape when combined with the net effects from the Project. It is anticipated that the moderate visual impact of the Goliath Gold Project will be negative, but it will be localized to the property and the adjacent road.

Rehabilitation of Steep Rock Mine

The RFD ID 25 (Rehabilitation of Steep Rock Mine) involves the stabilization and remediation of the former Steep Rock Mine site including the potential raising of water levels in the flooded mine pit areas. It is expected that the former mine pit water levels will take several decades to reach their static elevation, so the cumulative effects assessment would only consider net effects identified to occur during Project operations and maintenance. The expanded size of the end pit lake could provide greater visibility of the Project for recreational users on the lake. While the maximum end pit lake elevation is known, it is possible it could be lower than the maximum, which would limit cumulative effects.

Commercial Forestry

Forestry, a past, existing and future activity in the RSA, takes place on provincial Crown land and private forest lands. Provincial Crown lands make up a large majority of the operational forest area and are managed under long-term Sustainable Forest Licences. The Sustainable

Forest Licence holders are responsible for forest management activities in the licensed area including forest planning, harvesting, and silviculture.

The current composition of the forest in the RSA has been influenced by factors including past forest management practices and natural disturbances (e.g., wildfire, insects, and disease). Timber harvesting activity has contributed to visible land use patterns through the development of forest roads and removal of vegetation in areas that demonstrate various stages of regeneration. It is probable that ongoing forestry activities would likely continue into the future in the timber harvesting land base of the FMUs that occur in the RSA, resulting in potential cumulative effects on the visual environment.

Visual impacts of timber harvesting result from vegetation disturbance, which can visibly contrast with the typically natural setting of forested land and produce an adverse effect on visual quality. Effects would last until visually effective regeneration of vegetation has occurred (i.e., 15 to 30 years) to reduce the visual impact of the disturbance area (Carmean 1996).

Ontario forest operations and silviculture procedures provide for forest renewal by means of natural regeneration, tree planting, and seeding to facilitate successful reforestation of harvested areas, which is effective in mitigating related visual disturbances over time.

The visual impacts of removing vegetated land cover related to the development of cleared areas and forestry roads would be likely and frequent throughout the cycles of forest management in the RSA. While the form and scale of disturbance from timber harvesting activity has the potential to be visible from a wide range of viewing locations, the effectiveness of mitigation measures to manage visual quality would likely result in a low to moderate degree of visual impact from commercial forestry that would not appear inconsistent in the current context of the RSA.

7.4.9.1 Cumulative Effects Characterization

Cumulative effects may occur where the Project and other RFD both cause similar net effects within Project boundaries. As discussed in the previous section, net effects to the visual landscape may occur due to Project and RFD activities that overlap spatially and temporally. The cumulative negative effect on the visual landscape is assessed as being of low to moderate magnitude depending on the RFD as changes to the visual landscape would result in a minor loss to partial alteration to the existing landscape compared to baseline. The geographic extent of the cumulative effect would be local for most viewing opportunities but could be regional for viewing opportunities located on higher elevations (e.g., commercial forestry visibility at viewpoint 3, Mount Baldy Ski Resort). The duration of the net cumulative effect would be particular to the project but is generally predicted to be short-term for construction effects and long-term for operation and maintenance effects. The net cumulative effects would be continual considering the duration of the cumulative effect associated with the structures and permanent access roads of the Project.

The summary of predicted net cumulative effects on visual aesthetics is shown in Table 7.4-17.

Table 7.4-17: Summary of Predicted Net Cumulative Effects on Visual Aesthetics

Criteria	Net Effect	Direct / Indirect	Direction	Magnitude	Geographic Extent	Duration / Reversibility	Frequency	Probability of Occurrence	Significance
Visual aesthetics	Net change to the visual landscape during construction	Direct	Negative	Low to Moderate	Local to Regional	Short-term	Continual	Probable	Not Significant
Visual aesthetics	Net change to the visual landscape during operations and maintenance	Direct	Negative	Low to Moderate	Local to Regional	Long-term	Continual	Probable	Not Significant

7.4.9.2 Assessment of Significance

The assessment of significance of cumulative effects of the Project is informed by the interaction between the significance factors, with magnitude, duration, and geographic extent being the most important factors. As set out in Section 5.6.5, a predicted cumulative effect to the visual aesthetics criterion would be considered significant if it is assessed as:

- High magnitude;
- Long-term to permanent in duration; and
- Occurring at any geographical extent.

Taking into account the implementation of the mitigation measures, the magnitude of the cumulative effects for changes to the visual landscape during the construction and operation and maintenance stages is low to moderate. As a result, the cumulative effects for changes to the visual landscape are assessed as not significant.

7.4.10 Prediction Confidence in the Assessment

Primary factors affecting confidence and uncertainty in this assessment of visual aesthetics are related to:

- The availability and quality of information defining the Project components and baseline characterization data;
- The technical limits to conduct landscape modelling and develop visual effects analysis;
- Level of understanding and the ability to predict changes in public perception of visual aesthetics; and
- Level of certainty associated with the effectiveness of proposed mitigation measures.

Uncertainty in the assessment was reduced by:

- Collection of relevant and current spatial data at an appropriate resolution, where available;
- Conducting landscape model validation (e.g., calibration with baseline characterization conditions, comparison between visibility results and simulation results);
- Reviewing relevant visual assessment studies and methods;
- Collecting local and regional data to facilitate understanding of the visual context including landscape character; and
- The use of current net effects and cumulative effects information.

The confidence in the effects assessment for visual aesthetics is moderate, considering the availability of information defining the Project components and surrounding landscape used for modelling, the systematic approach to conduct visual effects modelling and analysis, and the effectiveness of mitigation measures based on accepted and proven best management practices that have been applied to transmission line projects throughout North America.

An understanding of the projects to assess cumulative effects is based on the availability of detailed descriptions of individual projects and activities, a consideration of their proposed geographic context, the likelihood of their occurrence and experience and/or reference of the potential effects of these projects from similar documented developments. Since the amount of information on many projects is limited and there is uncertainty about their occurrence and their net effects, confidence is low to moderate.

Remaining uncertainty was primarily addressed by conservative assumptions that overestimated rather than underestimated potential effects of the Project.

7.4.11 Monitoring

This section identifies any recommended effects monitoring to verify the prediction of the effects assessment and to verify the effectiveness of the mitigation measures and compliance monitoring to evaluate whether the Project has been constructed, implemented, and operated in accordance with the commitments made in the EA Report.

A summary of the monitoring activities relevant to visual aesthetics are described below:

- Additional monitoring throughout reclamation of temporary components would occur to confirm mitigation measures are being established appropriately.

7.4.12 Information Passed on to Other Components

Results of visual aesthetics assessment were reviewed and incorporated into the following components of the EA:

- First Nations rights, interests, and use of land and resources (Section 7.7); and
- Métis rights, interests, and use of land and resources (Section 7.8).

7.4.13 Criteria Summary

Table 7.4-18 presents a summary of the assessment results for visual aesthetics by criteria.

Table 7.4-18: Visual Aesthetics Assessment Summary

Criteria	Assessment Summary
Visual aesthetics	• Net effects are assessed to be not significant. • Cumulative effects are assessed to be not significant.

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