

Webequie Supply Road Project

Webequie First Nation

July 1, 2026

AtkinsRéalis Ref: 661910

APPENDIX R: VISUAL IMPACT ASSESSMENT REPORT

AtkinsRéalis



WSR
WEBEQUIE
SUPPLY ROAD



WEBEQUIE SUPPLY ROAD - VISUAL IMPACT ASSESSMENT

Webequie First Nation



Prepared for:
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Webequie Supply Road Visual Impact Assessment Final Report

July 2024
Webequie First Nation

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1.0 INTRODUCTION

This Visual Impact Assessment Report describes and summarizes the baseline characterization studies undertaken for the Webequie Supply Road Project (WSR, or “the Project”) and presents an assessment of the effects of the Project on the visual environment. For the purposes of this report, visual environment refers to the visual qualities or aesthetics of natural and cultural features that comprise the landscape within the project study area.

The WSR is proposed to extend for a distance of approximately 107 kilometers (km) from the Webequie First Nation Reserve to the mineral deposit area near McFaulds Lake in northwestern Ontario (refer to **Figure 1.1 – Project Location**). The WSR is proposed to be an all-season road that will enable the transportation of materials, supplies and personnel between the existing Webequie Airport and area of existing mineral exploration activities and proposed mine developments in the McFaulds Lake area. AtkinsRéalis (AR) (formerly SNC Lavalin Inc. (SNC)) is conducting a Comprehensive Environmental Assessment (EA), under the province of Ontario’s *Environmental Assessment Act*, as well as meeting the requirements of the federal *Impact Assessment Act*. A Visual Impact Assessment (VIA) was completed as an integral component of the overall EA/IA which is meant to include both the provincial Environmental Assessment (EA) and the federal Impact Assessment (IA).

2.0 ASSESSMENT BOUNDARIES

The following assessment boundaries were defined for the visual assessment:

- Spatial boundaries
- Temporal boundaries

A description of each is provided in the sections below.

2.1 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 the study areas. These distances were defined as foreground and middle-ground based on distances consistent with research on the visibility thresholds for typical linear infrastructure such as highways.

The spatial boundaries for the visual impact assessment are shown on **Figure 2.1** and include the following:

- **Project Footprint (PF)** – *Strictly speaking, these are the identified areas of direct disturbance (i.e., the physical area required for Project construction and operation). The PF is defined as the 35 m right-of-way (ROW) width for the WSR, and temporary or permanent areas needed to support the Project, including laydown/storage yards, construction camps, access roads, aggregate extraction sites, and maintenance and storage facilities. For the purposes of the visual environment assessment, direct effects of the Project on the visual aesthetics criteria were characterized and assessed from foreground (less than 1 km) viewing distances.*
- **Local Study Area (LSA)** - *Is identified as the area where most effects of the Project are likely to be measurable; therefore, along the PF, the LSA will be the focus of data collection to characterize existing environmental conditions. The LSA for visual environment extends 1 km from the Webequie Supply Road PF, or right-of-way (ROW) boundary, and 500 metres (m) from the footprint of temporary or permanent supportive infrastructure. For the purposes of the visual environment assessment, local direct and indirect effects of the Project on the visual aesthetics criteria were recorded and assessed from both foreground and middle-ground ranging from greater than 1 km up to 5 km from the WSR ROW. These distances are measured from the ROW boundary, not the centreline of the ROW, to ensure the LSA and Regional Study Area includes the full buffer distance beyond the area of direct disturbance.*
- **Regional Study Area (RSA)** – *Encompasses the areas outside of the LSA that are used to measure broader-scale existing environment conditions and provide regional context for the predicted geographic extent of direct and indirect effects of the Project (e.g., potential effects of the Project from background viewing distances where changes to the landscape may be visible but are less discernible than at foreground and middle-ground distances). Cumulative effects of the Project in combination with past, present, and reasonably foreseeable developments are typically assessed at this larger spatial scale. The rationale for this spatial boundary is to assess cumulative effects on the visual aesthetics criteria by providing a broader, regional landscape context. For the purposes of the visual environment assessment, effects were recorded and assessed from background (greater than 5 km) distances.*

2.2 Boundaries

Temporal boundaries for the assessment address the potential effects of the Project over relevant timescales. The temporal boundaries for the Project comprise the following two main phases:

- **Construction Phase:** This phase of the Project includes all the activities associated with the initial development and construction of the road and supportive infrastructure from the start of the construction to the start of the operation and maintenance of the Project. The Construction Phase is anticipated to be approximately 5 to 6 years in duration; and,
- **Operation Phase:** This phase of the Project includes all the activities associated with operation and maintenance of the road and permanent supportive infrastructure (e.g., operation and maintenance facilities, and aggregate pits) that will start after the construction activities are complete, plus site restoration and decommissioning of temporary infrastructure (e.g., access roads, construction camps, etc.). The Operations Phase of the Project is anticipated to be 75 years based on the expected timeline when major refurbishment of road components (e.g., bridges) will be required.

The Project is expected to operate for an indeterminate period; therefore, future suspension, decommissioning and eventual abandonment is not considered in the EA/IA. Although the timing and retirement of the road is not known at this time, it is anticipated that rehabilitation activities or rebuilding of portions of the road may occur over its lifetime to maintain its longevity. Further, potential visual effects and mitigation measures to be identified during the EA/IA 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. In addition, decommissioning of the Project would be expected to have a positive net effect on aesthetics criteria and indicators (e.g., returning the ROW to a natural state).

The scale and character of changes to the existing visual environment would be cumulative and reach their full extent at the commencement of operation of the road. Therefore, the visual assessment primarily focuses on the Project effects at the operations and maintenance phase since 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 construction camps and aggregate source areas will be decommissioned, and reclamation and revegetation will occur in later stage of the construction phase, and during the operation and maintenance phase. Therefore, the qualitative component of the assessment has considered the net effects of the Project that are anticipated to occur during the construction, and the operation and maintenance phases.

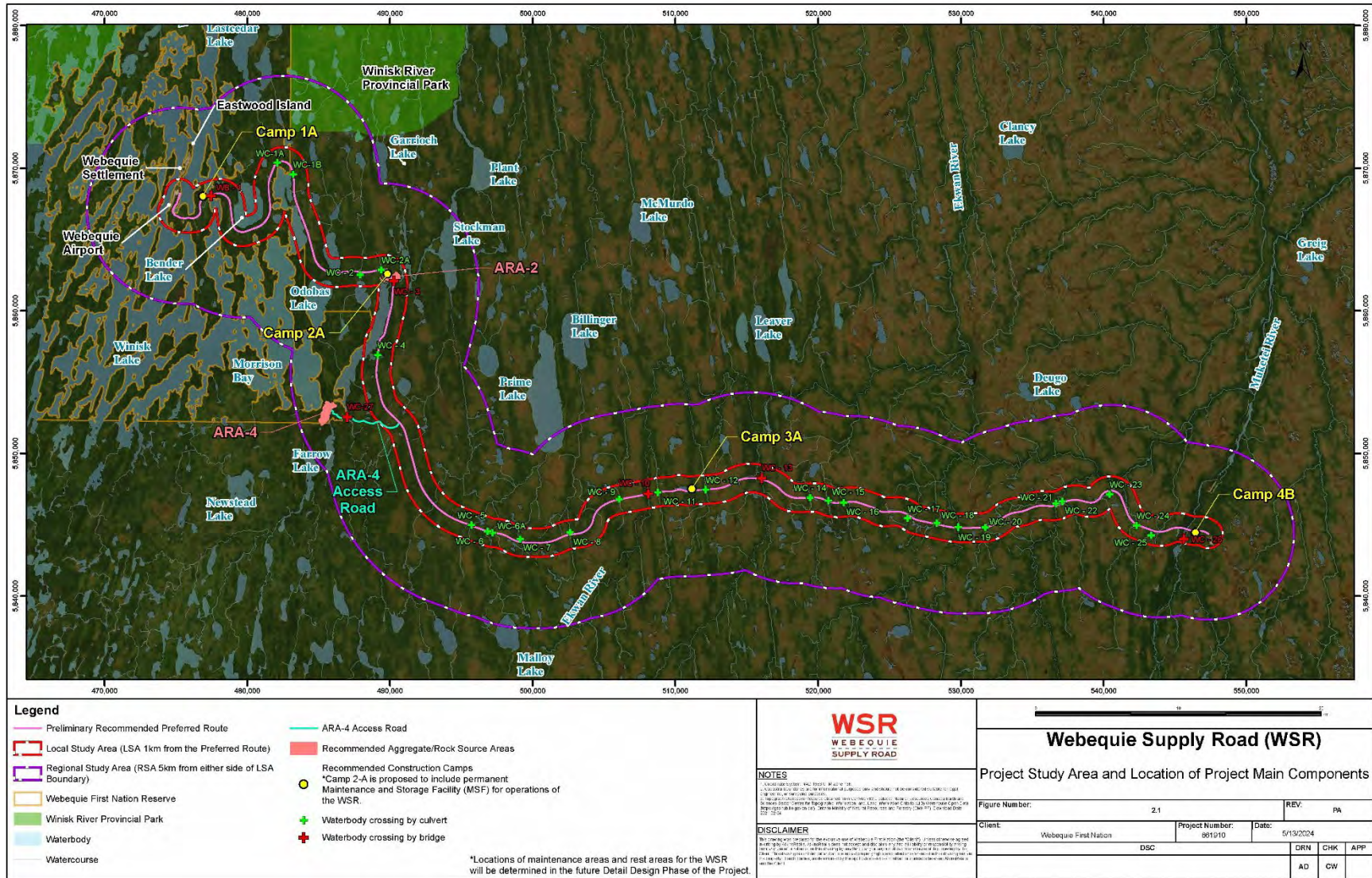


Figure 2.1: Project Study Area and Location of Main Components

3.0 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 environment effects are identified in **Table 3.1**.

Table 3.1 – Project Interactions with Visual Environment

Project Activities	Potential Effects	
	Change to Visual Landscape – Visibility (visual prominence) of the Project	Change to Visual Landscape – Scenic Quality, Viewer Sensitivity and Magnitude/Distance
<u>Construction</u> <input type="checkbox"/> Vegetation Clearing and Grubbing <input type="checkbox"/> Construction of Supportive infrastructure (camps, aggregate sources areas) <input type="checkbox"/> Construction of Structures at Waterbody Crossings <input type="checkbox"/> Decommissioning and Restoration of Temporary Supportive Infrastructure	X	X
<u>Operation and Maintenance</u> <input type="checkbox"/> Operation, Maintenance and Repair of Road and Waterbody Crossing Structures	X	X

Notes: **X** = Potential interaction

3.1 Criteria and Indicators

Criteria are valued components of the environment that are considered to have economic, social, biological, conservation, aesthetic, or ethical value. **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 selected for the assessment of potential Project effects on the visual environment, and the rationale for their selection, are provided in **Table 3.2**.

Table 3.2 – Summary of Visual Environment Criteria and Indicators

Criteria/Valued Component	Rationale	Indicators	Measurement of Potential Effects
Visual Landscape (Aesthetic)	Commitment to avoid or minimize adverse effects on known existing scenic or areas of visual value or interest.	Change to the visual landscape considering: <ul style="list-style-type: none"> • Visibility of the Project (visual prominence). • Scenic quality, viewer sensitivity, and viewer distance ratings relative to the existing visual landscape condition. 	Qualitative assessment of the change to the visual landscape during construction and during the operations and maintenance phases of the Project.

Visual landscape 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 ability of the landscape to provide scenic appeal or value for viewers. In general, the visual environment has value to Indigenous individuals and communities within the study area for the Project, and particularly to persons involved in recreational, and land and resource use activities.

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

- **Visibility of the Project:** Refers to locations that are related to visual aesthetics and have potential visual prominence or visibility of the Project. These locations are derived from GIS data, engagement and available information identified through visibility analysis (refer to Section 4.3). Visibility of the Project also refers to the visible area from key viewpoint locations of potential receptors (e.g., users of the land and waterways). Key viewpoints refer to photo viewpoint locations along the length of the Project and specifically at three (3) locations in the vicinity of the proposed crossings of Winisk Lake, the Winiskisis Channel and the Muketei River (refer to Section 4.3) selected as representative viewpoints for the visual effects assessment, including simulations.
- A rating system that considers changes to:
 - Scenic Quality – The Scenic Quality Rating is determined by examining the changes to the landscape characteristics such as visible landform, vegetation communities, water and shoreline features, and unique natural and cultural heritage elements.
 - Viewer Sensitivity – The Viewer Sensitivity Rating is determined based upon the input derived from stakeholders and Indigenous consultations and engagement, and primarily was derived from the Webequie First Nation.
 - Viewing Distance – The Viewing Distance Rating is determined for each of the three selective representative waterbody crossing sites utilizing aerial imagery to assess changes to the magnitude of the visual impact of the proposed crossings on the existing landscape from various distances.

While no specific comments on the indicators for the visual assessment have been received to date, comments from the future review of the Draft Environmental Assessment Report/Impact Statement will be considered in finalizing the visual assessment, including how predicted changes may relate to the practice of rights, interests and use of lands and resources, including 'Sense of Place'.

4.0 VISUAL BASELINE CHARACTERIZATION AND VISIBILITY ANALYSIS

4.1 Information Sources

Information for the visual environment baseline characterization was conducted using the following sources provided by AR that included results from both the review of secondary source information and primary data collection:

- Geology, Soil and Terrain including detailed terrain mapping;
- Surface Water;
- Vegetation and Wetlands, including using Ontario Ecological Land Classification (ELC) inventories to identify natural landform and land cover features;
- Socio-economic Environment;
- Indigenous Knowledge and land and resource use information, and comments and feedback shared to date as part of the EA/IA process;
- LiDAR elevation data with a resolution of approximately 0.1 m and approximately 150 m wide area along the road right-of-way (ROW) and aerial and drone imagery for the Project; and,
- Photographic images/inventories during field surveys.

The process was also informed by the information gathered to date from engagement and consultation with Indigenous communities to confirm and understand the following:

- Vistas – meaning broad sweeping views from an elevated portion of land;
- Commonly navigated and recreationally-utilized waterbodies and watercourses; and,
- Cultural land travel routes, such as those used to access hunting areas and/or sites of spiritual value or interest.

Data sets that document the above types of information were employed in the process of identifying viewsheds and potential receptors. A viewshed is a geographical area on the land that is visible from the location of a receptor or a person. For example, this includes all surrounding points that are in line-of-sight from a location but excludes points that are beyond the horizon or obstructed by terrain and other features (e.g., trees). Potential effects on viewsheds and receptors were considered in the process of evaluating the alternative routes and supportive infrastructure for the WSR (refer to Section 8.0).

4.2 Description of Existing Environment

The landscape that the proposed WSR will traverse is typical of the Hudson Bay Lowland Physiographic Region, which is characterized as a low, swampy plain with numerous water bodies, bogs, fens, and subdued glacial features. The topography within the project study area is relatively flat, with a topographic variation of 53 m.

The broad vegetation communities within the LSA and RSA include the following:

- Conifer Forest
- Conifer Swap
- Deciduous Forest
- Mixed Forest
- Thicket Swamp
- Bog
- Mixed Swamp
- Open Bog
- Fen

Variations of these communities exist throughout the LSA and RSA based on soil type and drainage patterns. **Figure 4.1** illustrates the vegetation communities that exist within the LSA and RSA for the alternative routes examined for the proposed WSR.

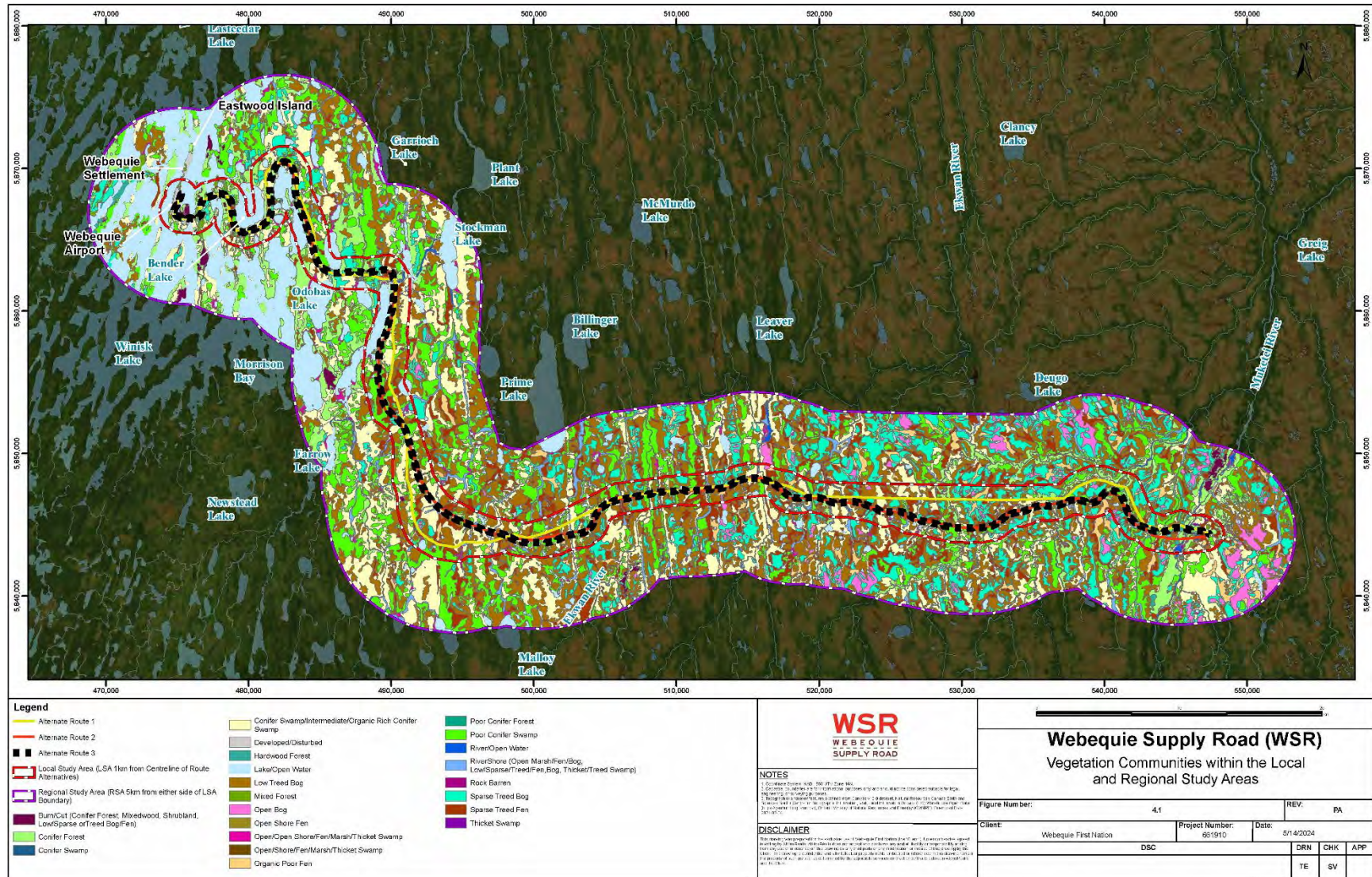


Figure 4.1: Vegetation Communities within the Local and Regional Study Areas

4.3 Visibility Analysis

Based upon a review of the aerial video along the flight line imagery of the proposed preliminary recommended preferred route for the WSR (Alternative Route 3), a significant length (approximately 64 km) of the western extent of the proposed road alignment is located within coniferous and conifer dominated mixed forest vegetation communities. Approximately 1 km east of Prime Lake (refer to **Figure 4.1**), the landscape transitions to a mosaic of lakes, swamps, and open water bodies.

Along its total length of approximately 107 km, the proposed WSR will require 31 waterbody crossings, which include 30 watercourses and one lake. To cross these waterbodies, six bridges are proposed to be constructed over the major water bodies and 25 culverts of various types (e.g., open bottom arch culvert and corrugated steel pipes) are proposed to be installed at minor waterbodies. The Muketei River and the Winiskisis Channel are navigable watercourses. Winisk Lake is a large, open water lake that is navigable. These three water bodies are also well-used routes for recreational/tourism activities.

Given the density of existing forest along the length of the proposed route from the western terminus to approximately 65 km eastward, the proposed WSR will not be visible from outside of the limit of the LSA. East of this point, where the route is embedded in predominantly wetlands or lowlands (i.e. bogs, fens, treed swamps), the WSR may potentially be visible beyond the limit of the LSA.

At the locations of the proposed crossings of the Muketei River, Winiskisis Channel and Winisk Lake, the WSR may be visible from beyond the limit of the LSA, however, given the anticipated height and size of the proposed bridges at the crossings, it is not anticipated that the WSR will be visible from the area within the full extent of the RSA. Upon approach to Webequie settlement, the WSR is proposed to terminate at Webequie Airport, which is located 1.25 km south of the settlement.

Based upon the Visibility Analysis, areas that are likely to afford views to the WSR include the following:

- Areas in the vicinity of the Webequie settlement;
- The crossing at Winisk Lake;
- The crossing at Winiskisis Channel;
- The crossing at Muketei River;
- Cultural sites or areas of value or interest that are located within the LSA, east of the divide between predominantly lowland and predominantly forested vegetation communities and within the RSA west of this line of division; and,
- Trails and locations used for recreation and/or land ad resource use that are located within the LSA.

A site-specific assessment of the visual characteristics of each of these sites was completed in order to determine the degree of visibility of the proposed WSR in consideration of vegetation community composition, topography, view angles, viewing distance to the receptor and visual contrast.

5.0 IDENTIFICATION OF VIEWSHEDS FROM RECEPTORS

Based upon the baseline characterization of the existing landscape, potential receptors included the following:

- Areas in the vicinity of the proposed crossings of Winisk Lake, the Winiskisis Channel and the Muketei River (Figures 5.1, 5.2, and 5.3, respectively).
- Cultural sites or areas of value or interest and areas that are located within the LSA, west of the division line between the area that is dominated by coniferous, deciduous and mixed forest communities and the area that comprises predominantly lowland vegetation communities, to the east of this line of division.
- Recreational and land and resource use areas and trails that are located within the LSA that are proximate to water bodies and may afford views across the water to the proposed WSR.

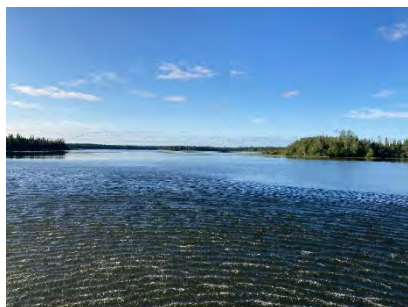


Figure 5.1: Winisk Lake Viewing South



Figure 5.2: Winiskisis Channel Viewing West

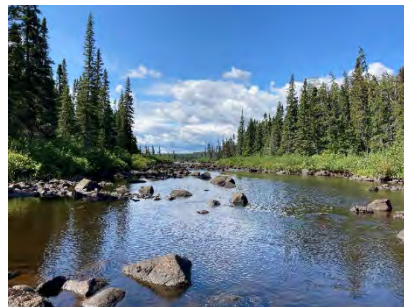


Figure 5.3: Muketei River Viewing South

Based upon a review of the arrangement of homes and buildings within the Webequie settlement and given the distance separation between the settlement and the terminus of the proposed WSR at the Webequie Airport, it is anticipated that potential receptors do not exist within the settlement. Refer to **Figure 5.4** for a map that illustrates the location and composition of buildings and homes within the Webequie settlement.

The WSR is not proposed to be illuminated so the WSR will not be visible from any receptors during the night.

The potential receptors that were identified are illustrated on **Figure 5.5**

Analysis of the vistas, viewsheds, viewing distance and visual characteristics of the landscape was completed to determine the potential visual effects of each of the alternative routes and the preliminary recommended preferred route of the proposed WSR on the identified potential receptors (refer to Sections 6.0 and 7.0).



Figure 5.4: Webequie First Nation Community Plan
Source: Webequie First Nation On-reserve Land Use Plan May 31, 2019

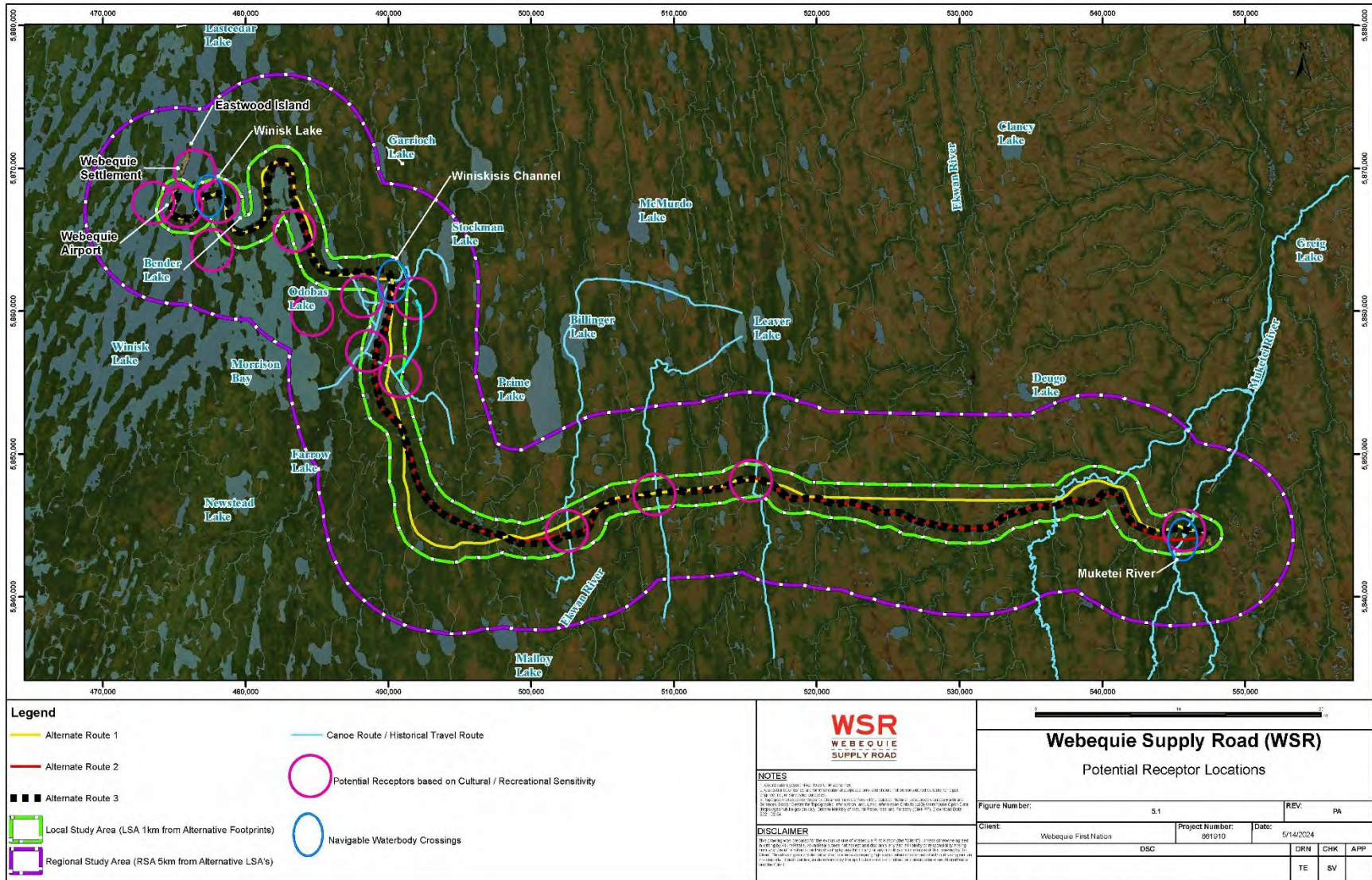


Figure 5.5: Potential Receptor Locations

6.0 ALTERNATIVES ASSESSMENT PROCESS

Three alternative routes for the WSR were evaluated (Alternative Routes 1, 2 and 3). A multi-factor analysis was completed to enable a comparison of the advantages and disadvantages associated with each of the alternative routes. AR utilized a computer software tool ('Pangea') that is designed to compare alternatives utilizing multiple criteria, different perspectives, and a mix of qualitative and quantitative data. Utilizing the outputs from the comparative analysis and feedback received through the consultation process, indicators to measure change for each valued component/criterion were identified and were utilized in the process of evaluating each of the three alternative routes. The criteria and indicators that were applied in the process of evaluation were organized under the five following factors:

- Biological environment
- Physical environment
- Indigenous land use and interests
- Socio-economic environment (including cultural heritage and archaeology)
- Technical considerations (cost, constructability, safety, etc.)

A total of one hundred and fifty-six (156) criteria were defined related to eleven (11) disciplines/factors, comprising the following:

- Vegetation
- Fish and fish habitat
- Wildlife
- Surface water
- Groundwater
- Indigenous peoples land use and interest
- Land and resource use (non-indigenous)
- Visual aesthetics
- Archaeology
- Cultural heritage
- Technical

For the "visual aesthetics" discipline/factor, the criterion that was established was "visual character and sensitivity". Specific indicators that were applied in the process of evaluating the alternative routes in comparison to this criterion were:

- Number of culturally important viewpoints within 1 km (indicator #136)
- Number of tourism/outfitter operations within 1 km (indicator #137)
- Number of known land/water access routes impacted (indicator #138)
- Number of fishing and hunting areas impacted (indicator #139)

Where potential visual change or experience may occur related to each of the above.

The following data layers sources were utilized to inform the analysis related to the indicators listed above:

- Indicator #136 – Webequie First Nation
- Indicator #137 – Webequie First Nation
- Indicator #138 – Archaeological Services Inc. (ASI)
- Indicator #139 – ASI related to cultural heritage sites of interest and or value

The multi-factor analysis identified Alternative Route 3 as the preliminary recommended preferred route for the WSR.

It should be noted that in relation to the visual aesthetics discipline/factor, the locations of the proposed crossings of Winisk Lake, the Winiskisis Channel and the Muketei River, respectively, did not vary significantly between the three alternative routes. The visual context of the WSR within each of the three alternative routes is similar in terms of the types and extents of the vegetation communities that the WSR alignments are embedded within. Therefore, the visual aesthetics discipline/factor was not a key driver in the process of selecting the preliminary recommended preferred route.

7.0 POTENTIAL EFFECTS, MITIGATION AND NET EFFECTS

This section describes the potential effects, appropriate mitigation measures and predicted net Project effects for visual environment.

7.1 Effects Assessment Methods

7.1.1 3 Dimensional Visualizations

To enable the visual impact assessment, 3 dimensional (3D) visualizations of the three proposed crossing structures along the preliminary recommended preferred route were prepared, including the Winisk Lake Crossing (254 m span), the Winiskisis Channel Crossing (48 m span) and the Muketei River Crossing (33 m span). Three dimensional models were prepared for various viewpoints. The 3D visualizations were constructed utilizing the following base information:

- DEM and LIDAR digital files
- Drone image video
- Perspective imagery
- Aerial imagery

The following **Figures 7.1 to 7.14** illustrate the pre-construction and the post-construction conditions at each of the three waterbody crossing locations.

The 3D visualizations illustrate the constructed water crossing structures at the three crossing locations. The implementation of the crossing structures will require the following activities that will have implications on the visual environment:

- Removal of trees and vegetation in the vicinity of the proposed abutments;
- Installation of concrete abutments and foundations;
- Installation of the girders and concrete bridge deck;
- Installation of the concrete barrier walls on deck and asphalt driving surface on deck ; and,
- Restoration of the areas of disturbance.

Once the area has been restored, it is anticipated that vegetation cover will become re-established in the vicinity of the bridge abutments.



Figure 7.1: Winisk Lake Crossing – Pre-Construction – Viewing South



Figure 7.2: Winisk Lake Crossing – Post-Construction – Viewing South



Figure 7.3: Winisk Lake Crossing – Post-Construction – Viewing West



Figure 7.4: Winisk Lake Crossing – Post-Construction – Viewing East



Figure 7.5: Winiskisis Channel Crossing – Pre-Construction – Viewing West



Figure 7.6: Winiskisis Channel Crossing – Post-Construction – Viewing West



Figure 7.7: Winiskisis Channel Crossing – Post-Construction – Viewing South



Figure 7.8: Winiskisis Channel Crossing – Post-Construction – Viewing North



Figure 7.9: Muketei River Crossing – Pre-Construction – Viewing South



Figure 7.10: Muketei River Crossing – Post-Construction – Viewing South



Figure 7.11: Muketei River Crossing – Pre-Construction – Viewing North



Figure 7.12: Muketei River Crossing – Post-Construction – Viewing North



Figure 7.13: Muketei River Crossing – Post-Construction – Viewing West

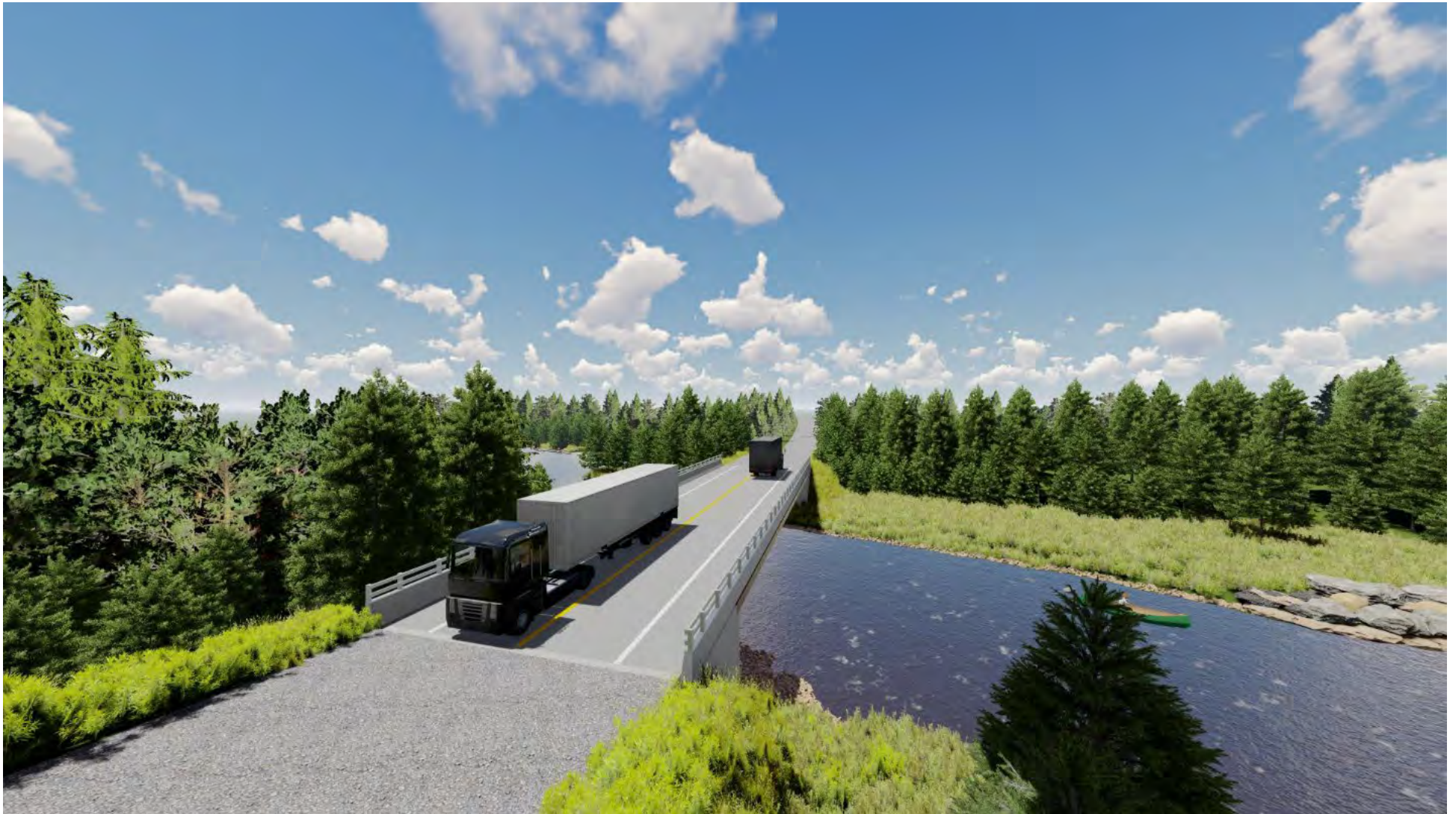


Figure 7.14: Muketei River Crossing – Post-Construction – Viewing East

7.1.2 Scenic Quality, Viewer Sensitivity and Distance Ratings

Utilizing the 3D visualization, the visual assessment of the three waterbody crossings associated with the recommended preferred alignment was completed. The following three assessment categories were applied, as previously summarized in Section 3 – Criteria and Indicators, to predict impacts to the visual landscape:

Scenic Quality Rating (SQR)

The SQR is determined based upon the physical characteristics of the landscape within the viewshed, under both the pre- and post-construction condition. The landscape characteristics that were analyzed included visible landform, vegetation communities, water and shoreline features and unique natural and cultural heritage elements.

Viewer Sensitivity Rating (VSR)

The VSR was determined based upon the input derived from consultations, primarily with the Webequie First Nation.

Viewing Distance Rating (VDR)

The VDR was determined for each of the three waterbody crossings utilizing aerial imagery. The VDR assessed the magnitude of the visual impact of the proposed crossings for the recommended preferred alternative on the existing landscape from various distances and defined the distances at which the view becomes obstructed, or the impact becomes obsolete.

A Composite Rating is determined based on the SQR, VSR and VDR which defines the degree of change in the visual environment. The magnitude of the visual effect is determined by aggregating the SQR, VSR and VDR to yield a Composite Rating of ‘High’, ‘Moderate’ or ‘Minimal’.

7.1.3 Project Visibility/Prominence

The potential visual prominence of each of the three proposed crossing structures was determined based on a determination of the distance from which each of the proposed crossing structures would be visible within the limits of the viewshed using the dimensions of following dimensions:

- Thickness of the profile of the proposed crossing structure from the underside of the deck to the top of the barrier wall.
- Height of the underside of the structure above water level.

The visible distance at which the structure would be perceptible within the viewshed was calculated utilizing the intercept theorem:

$$\frac{X}{\text{Viewer Distance}} = \frac{\text{Height of Object (Peck thickness)}}{\text{Viewshed Distance}}$$

For the purposes of this assessment, 1.0 m has been utilized as the viewer distance, this equates to the viewpoint being 1.0 m in front of the viewer at eye level.

7.2 Potential Effects

The potential effect on the visual environment was determined for each of the three proposed crossings based on an assessment of the viewshed related to each crossing, as well as on an assessment of the anticipated change in the visual environment in comparison to the SQR, VSR and VDR. A Composite Rating was then derived that defines the overall magnitude of the effect on the visual environment.

7.2.1 Changes to Landscape Quality

Utilizing the 3D visualization and the visual assessment categories described in Sections 7.1.1 and 7.1.2, the following matrix sets out the values that were attributed to each of the proposed waterbody crossings and the results are summarized in **Table 7.1 - Visual Assessment Categories and Composite Ratings**. Based on the values assigned to the SQR, VSR and VDR respectively, a Composite Rating is determined as an aggregate of the three values. The Composite Rating defines the overall magnitude of the effect on the visual environment.

A. Winisk Lake Crossing

Scenic Quality Rating

Description – Open water with shoreline vegetation dominated by coniferous woodland.

SQR = High

Viewer Sensitivity Rating – The consultation program did not reveal an increased viewer sensitivity in relation to the other waterbody crossings.

VSR = Minimal

Viewing Distance Rating – The viewshed extends approximately 1880 m northward from the site of the proposed crossing and approximately 1,835 m southward from the site of the proposed crossing (refer to **Figure 7.15**). Given the viewer distance, the VDR is defined as ‘high’.

B. Winiskisis Channel Crossing

Scenic Quality Rating

Description – Narrow channel with rock/cobble banks. The vegetation community is dominated by coniferous woodland.

SQR = Moderate

Viewer Sensitivity Rating – The consultation did not reveal any increased viewer sensitivity in comparison to other open waterbody crossings.

VSR = Minimal

Viewing Distance Rating – The viewshed extends approximately 427m west of the site of the crossing and 638 m east of the site of the proposed crossing (refer to **Figure 7.16**). Given the distance of the viewshed, the VDR is classified as ‘moderate’.

C. Muketei River Crossing

Scenic Quality Rating

Description – At the location of the crossing the Muketei River is narrow. The banks are well-vegetated and include bedrock, boulders, and cobble. The vegetation community is dominated by coniferous woodland.

SQR rating = Moderate

Viewer Sensitivity Rating – The consultation program did not reveal any increased viewer sensitivity in comparison to other open water crossings.

VSR = Minimal

Viewing Distance Rating – The circuitous meander geometry of the Muketei River limits the viewshed distance from the crossing site. The visual distance northward from the site of the crossing is approximately 305 m. The southward viewshed distance is approximately 270 m (refer to **Figure 7.17**) Given these visual distances, the VDR for the Muketei River Crossing is limited and is classified as ‘minimal’.

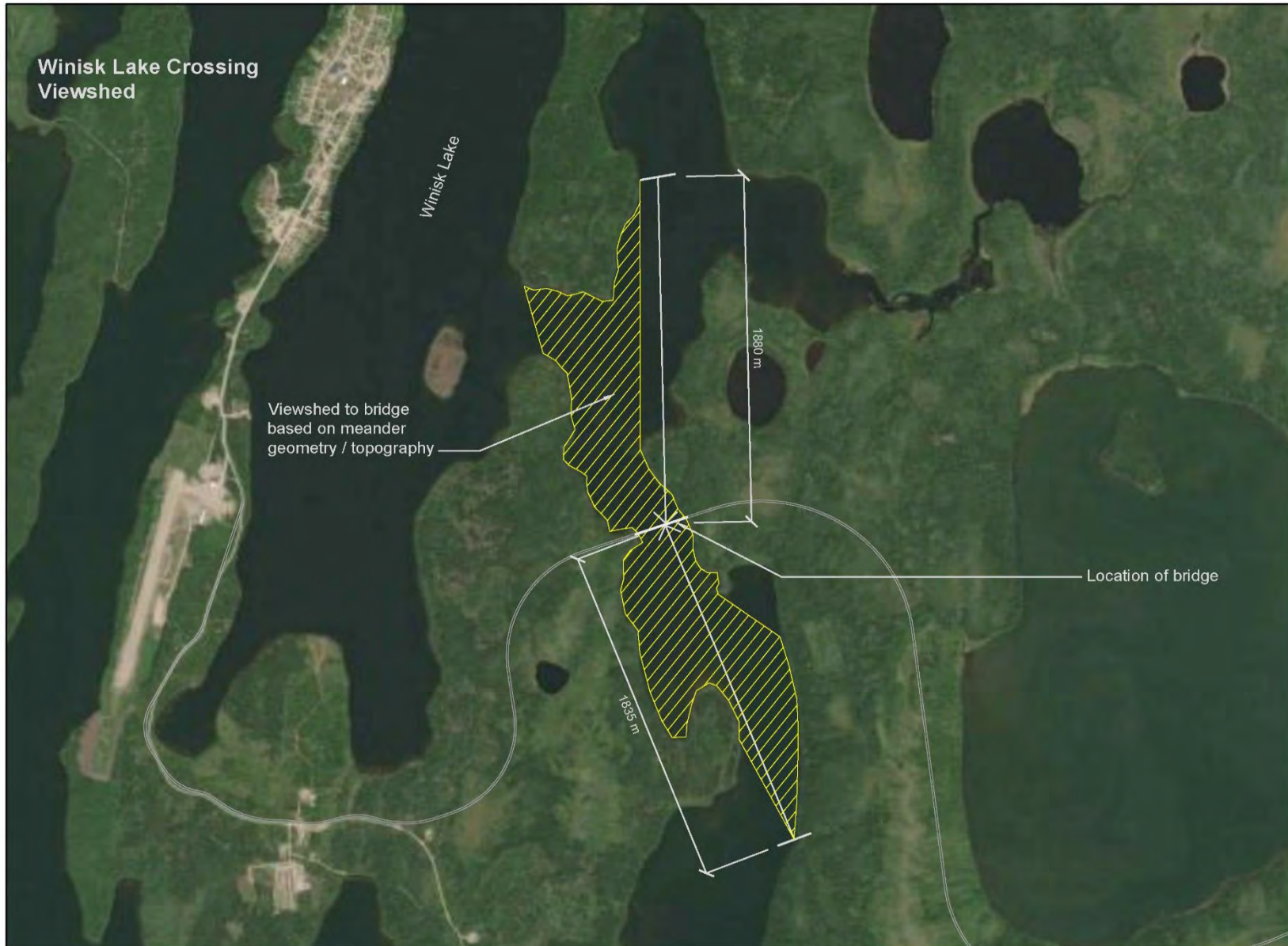


Figure 7.15: Winisk Lake Crossing – Viewshed



Figure 7.16: Winiskisis Channel Crossing – Viewshed



Figure 7.17: Muketei River Crossing – Viewshed

Table 7.1: Visual Assessment Categories and Composite Ratings

Waterbody Crossing	Visual Assessment Categories			
	SQR	VSR	VDR	Composite Rating
Winisk Lake Crossing	High	Minimal	High	High
Winiskisis Channel Crossing	Moderate	Minimal	Moderate	Moderate
Muketei River Crossing	Moderate	Minimal	Minimal	Minimal

Notes:

- SQR = Scenic Quality Rating
- VSR = Viewer Sensitive Rating
- VDR = Viewing Distance Rating
- Composite Rating = Aggregate of SQR, VSR and VDR that defines overall visual effect

Based on this assessment, the Winisk Lake Crossing was determined to have the highest potential to affect a change in the quality of the visual landscape based on the scenic quality of the existing landscape, the length of the proposed crossing structure, and the extent of the viewsheds from which the crossing structure will be visible. The viewsheds to both the Winiskisis Channel and Muketei River crossings are limited and the aquatic areas of the viewsheds are smaller than that of the Winisk Lake Crossing, consequently, the potential for change to the visual landscape is limited.

In addition, the potential for change to the quality of the visual landscape was assessed utilizing the 3D visualizations (**Figures 7.1 to 7.14**) and the SQR, VSR and VDR rating system outcomes to assess potential visual prominence or visibility of each of the three proposed crossing structures based on the distance from which the each of the proposed crossing structures would be visible within the limits of the viewshed.

Table 7.2 provides a summary of the parameters and outcomes of the calculation for visibility within the limits of the viewshed.

Table 7.2: Visibility Parameters and Outcomes

Waterbody Crossing	Parameters			
	Deck Thickness (m)	Height Above Water Level (m)	Viewshed Distance (m)	Visual Height from Viewer's Perspective (Bridge Deck) (mm)
Winisk Lake Crossing	5.75	3.97	North 1880 / South 1835	North 3.06 / South 3.13
Winiskisis Channel Crossing	3.62	3.0	East 638 / West 427	East 5.67 / West 8.42
Muketei River Crossing	6.32	4.54	North 305 / South 270	North 20.72 / South 23.41

Based upon data presented in **Table 7.2**, the visual height of the proposed crossing structures at the limit of the viewshed for all three crossing structures is minimal.

7.3 Mitigation

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

- Avoiding new Project footprint disturbances to the extent practicable, with particular consideration at the three waterbody crossing sites
- Minimizing the extent of vegetation clearing at the three waterbody crossings, and other crossings, that are considered navigable waterbodies will be limited to minimize visual impacts and where necessary meet safety standards.
- Maximizing efforts to retain existing vegetation and landforms, to the extent practicable, to provide screening of activities and Project components.
- Reducing the extent of disturbed area within the road right-of-way. Disturbed areas will be restored and seeded to allow for natural revegetation and its management to support the safe operations of the road.

The mitigation measures will be effective in reducing the extent and magnitude of change to the visual environment.

7.4 Net Effects Assessment

Based upon the outcomes of the assessment of changes to visual quality as summarized in **Tables 7.1 and 7.2**, and with application of mitigation, the proposed bridge at the Winisk Lake Crossing will be barely perceptible from the north and south limits of the viewshed. The proposed bridge at the Winiskisis Channel Crossing will be visible but not visually dominant within the landscape when viewed from both the east and west limits of the viewshed. The proposed bridge at the Muketei River Crossing will be visually dominant within the landscape when viewed from both the north and south limits of the viewshed.

In the context of the project study areas, all direct effects on the visual environment will occur within the PF (less than 1 km from the WSR ROW – foreground) as a result of the implementation of all three of the proposed crossings. However, only at the proposed Winisk Lake Crossing will visual effects occur within the LSA (1 km to 5 km from the WSR ROW – foreground to middle ground). These effects extend to the limit of the viewshed (1.88 km north and 1.83 km south of the location of the proposed crossing). None of the three proposed crossings will result in visual effects beyond the LSA.

The proposed the Winisk Lake Crossing will not be visible from the Webequie settlement or the Webequie Airport.

Views to all three of the proposed crossings will be limited to the following:

- The navigable open water areas within the viewsheds associated with each proposed crossing as illustrated on Figures 7.15 to 7.17.
- Segments of the shoreline areas that are located around the perimeter of the mapped viewsheds.

With respect to potential receptors based on cultural/recreational sensitivity, there are potential receptors in the vicinity of the Winisk Lake and Winiskisis Channel Crossings. There are no mapped potential receptors in the viewshed of the proposed Muketei River Crossing.

Visual effects will occur only during daylight hours since the WSR is not proposed to be illuminated.

7.5 Visual Effects Associated with Supportive Infrastructure

Alternative locations for supportive infrastructure were evaluated as a component of the Alternatives Assessment. Supportive infrastructure includes the following:

- Aggregate / rock source areas (pits and quarries)
- Construction access roads

- Construction camps with storage/laydown areas
- Maintenance and Storage Facility

Based upon the Alternatives Assessment, preferred locations for supportive infrastructure were identified. **Figure 2.1 – Project Study Area and Location of Project Components** illustrates the preferred locations for access roads, aggregate/rock sources, construction camps, and the Maintenance and Storage Facility (MSF). All of these supportive infrastructure components are proposed to be located within the limits of the PF. Given the composition of the vegetation within the PF and the LSA is dominated by coniferous woodland, the visual effects of the supportive infrastructure components will be confined to the LSA. It is unlikely that any of the supportive infrastructure components will be visible from beyond 75 m from the perimeter of the component during daylight hours, given the height and density of coniferous forest cover.

Since the construction camps and the MSF are proposed to be illuminated, visual effects may occur during night, however, any potential visual effects will be confined to the LSA.

With the exception of the MSF, any visual effects arising from the implementation and operation of these components will be limited in duration, since the components will be decommissioned and the disturbed areas restored once the construction of the WSR has been completed. The MSF is required to support the operation of the WSR and will remain in place for the duration of operation of the WSR. Consequently, the visual effects associated with the MSF will persist over the life of the project.

7.6 Net Effect Characterization

The effects assessment approach for the visual environment followed the general effects assessment process for the WSR EA/IA. Net effects are described using the significance factors identified in Section 7.7.

Results from the visual impact assessment rating were used to determine the magnitude of net effects on the quality of visual landscape as this rating provides an indication of the predicted intensity of the net effect.

Table 7.3: Magnitude Effect Levels for Visual Environment

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.

With the application of the proposed mitigation, the magnitude of net effects predicted for the visual landscape for each of the three water body crossings is as follows:

- Winisk Lake Crossing – Moderate
- Winiskisis Channel Crossing – Low
- Muketei River Crossing – Low

7.7 Assessment of Significance

The assessment of significance of net effects is informed by the interaction between the significance factors, with magnitude, duration, and geographic extent being the most important factors. A predicted net effect to the visual environment 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 phases is low to moderate. As a result, the net effects for changes to the visual landscape are assessed as not significant.

8.0 CUMULATIVE EFFECTS

Cumulative effects result from interactions between net effects of the Project and the effects of other reasonably foreseeable future projects and activities. The effects of other existing projects and activities are considered as part of the characterization of existing conditions (refer to Section 4.2). Beyond the limit of the WSR project, other future projects are in the planning stages as illustrated in **Figure 8.1**, including the Northern Road Link, which will connect with the WSR and provide access to the provincial highway network at Nakina via the Martin Falls Community Access Road, proposed mining projects (Eagles Nest project, Black Horse project, Big Daddy project), and potential mining exploration activities in the Black Thor, Blackbird, and Black Label Mining Deposits area. These future proposed projects and activities are located at or near the eastern terminus of the WSR and within the RSA. However, an assessment of cumulative effects on visual environment was not warranted for the Project based on the following rationale:

- There are no past, present or ongoing physical activities in the RSA identified as having visual effects that would contribute to cumulative visual effects.
- Information or design details for other reasonably foreseeable future projects or physical activities that may result in future change to the visual environment in the project study area are not available.

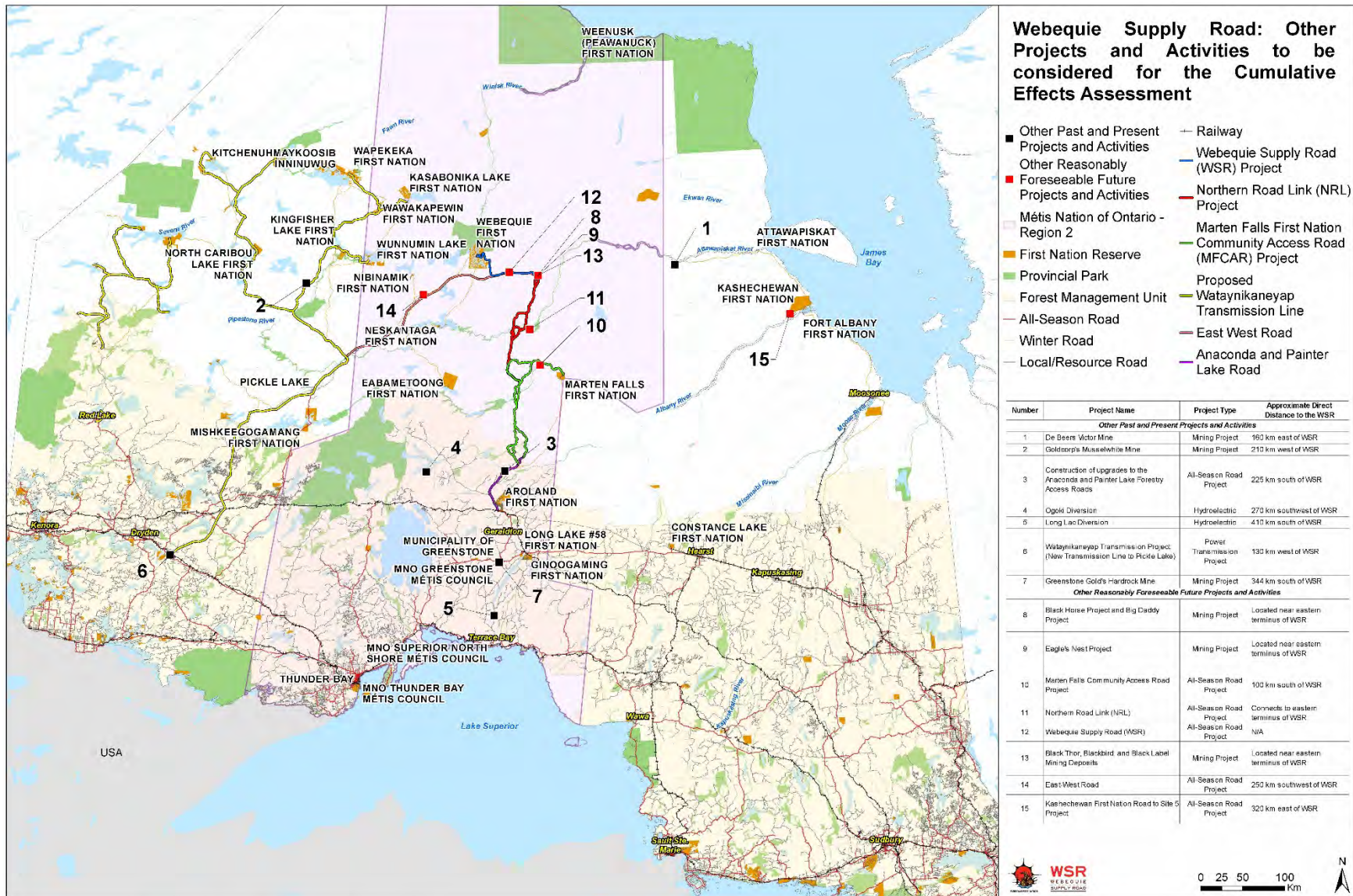


Figure 8.1: Other Projects and Activities to be Considered for the Cumulative Effects Assessment

9.0 SUMMARY

The WSR is proposed to extend from the Webequie First Nation Reserve to the mineral deposit area near McFaulds Lake in northwestern Ontario. The Visual Impact Assessment was completed to support the evaluation of alternative routes and the selection of a preferred route. Visual effects were assessed in the context of the project study areas: the PF, LSA and RSA. The landscape in the vicinity of the project study areas is dominated by coniferous woodland and as a result, visual effects are not anticipated to extend beyond the LSA for the WSR. The following three waterbody crossings were assessed to identify potential visual effects:

- The Winisk Lake Crossing;
- The Winiskisis Channel Crossing; and,
- The Muketei River Crossing

The assessment determined that for the Winiskisis Channel and Muketei River Crossings, visual effects will not extend beyond the PF and will be limited to the viewsheds as mapped. For the Winisk Lake Crossing, visual effects are not anticipated to extend beyond the LSA and will extend approximately 1,850 m from the WSR ROW. Views to the crossing structures at all three crossings will be limited to views from open water and shoreline areas within the mapped viewshed. None of the crossings will be visible from the Webequie settlement. With respect to potential receptors described in Section 5, only those that are located within the defined viewsheds associated with each of the proposed crossings of Winisk Lake, the Winiskisis Channel and the Muketei River as illustrated in **Figures 7.15, 7.16** and **7.17** will be subject to a change in the visual environment.

The visual effects associated with supportive infrastructure components will be confined to the LSA and will be limited in extend due to the height and density of the coniferous woodland dominated landscape.

An assessment of cumulative effects was not undertaken due to the fact that there are no past, present or ongoing physical activities in the LSA identified as having visual effects that would contribute to cumulative visual effects, and because design details for other reasonably foreseeable projects or physical activities that may result in future change to the landscape setting in the project study areas are not available. There are several other planned in the vicinity of the WSR site, including the Northern Road Link, the Marten Falls Road Link and the Eagles Next Mine that may be visible from the WSR that may contribute to a change in the visual environment. The cumulative effects of these projects should be considered as the plans are further developed.

10.0 REFERENCES

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