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## 15 SUBJECTS OF NOTE

### 15.10 EFFECTS TO TOURISM POTENTIAL AND WILDERNESS CHARACTER

#### 15.10.1 Introduction

The vast areas of wilderness of the NWT are an important feature for many residents, and the aesthetic qualities of this wilderness have an inherent value. Further, tourism in the NWT depends heavily on the wilderness character of the land. During the scoping sessions for the Taltson Hydroelectric Expansion Project (the Project), concerns were expressed regarding effects of the transmission line upon the aesthetic qualities of wilderness, and the proposed East Arm National Park (the Park). Limited road access, as well as availability of high-quality natural resources (e.g., wildlife and fish), is characteristic of wilderness tourism (FMB 2001). The purpose of this Subjects of Note (SON): Effects to Tourism Potential and Wilderness Character is to assess the potential effects of the Project on tourism and wilderness. The Terms of Reference (TOR) for the Project were issued on March 28, 2008 by the Mackenzie Valley Environmental Impact Review Board (MVEIRB 2008a). The Terms of Reference document is included in Chapter 1 - Introduction and the complete Table of Concordance for the Developer's Assessment Report (DAR) is in the Preamble.

National parks are an important part of the wilderness and tourism experience in that they protect natural environments and are gateways to nature, adventure, discovery, and solitude (Parks Canada 1997). The proposed Park is situated in the region of the East Arm of Great Slave Lake. The potential effects of the Project on the proposed Park would be discussed within the larger context of effects to the NWT's wilderness character. This chapter thus includes an assessment of the following:

- potential effects on the availability of the natural resources (i.e., fish and caribou), which form the basis of the tourism activities; and
- potential effects on the wilderness character of the tourism experience.

Sport hunting in the NWT is conducted by both residents and non-residents of the NWT. Non-residents of the NWT require the services of an outfitter and usually use hunt from the various remotely located hunting lodges in the NWT. Within the vicinity of the Project, the sport hunting industry concentrates around the barren-ground caribou, but muskoxen, wolverine and wolf are also available.

While the main tourism season runs from May 15 to September 15 (ITI 2007), the GNWT promotes a variety of activities throughout the year, such as hiking, fishing, boating, camping and wildlife viewing in the summer months, and snowmobiling, snowshoeing, and aurora borealis (northern lights) viewing in the winter months.

Ecotourism is one of the main attractions to visitors to the NWT, as well as residents, who wish to explore Canada's north. They are attracted by the unique and pristine flora, fauna, and cultural heritage that the NWT has to offer. Tourists are also seeking ways in which to learn more about surviving on the land with minimal supplies, and how to leave the smallest ecological footprint possible. Residents of the NWT have taken advantage of this market by offering guided tours and northern activities to tourists that are also considered eco-friendly, such as dog mushing, snowshoeing,



kayaking, canoeing, skiing, hiking, camping, wilderness viewing, aurora borealis viewing, cultural heritage camps, sustainable fishing and hunting. Hunting and fishing lodges also offer opportunities for non-consumptive tourism. For example, the Trophy Lodge offers spectacular views of the impressive cliffs of the Pethei Peninsula located along the East Arm of Great Slave Lake, and Plummers Arctic Lodge provides spectacular views of the Taltheilei Narrows on the East Arm.

## 15.10.2 Approach

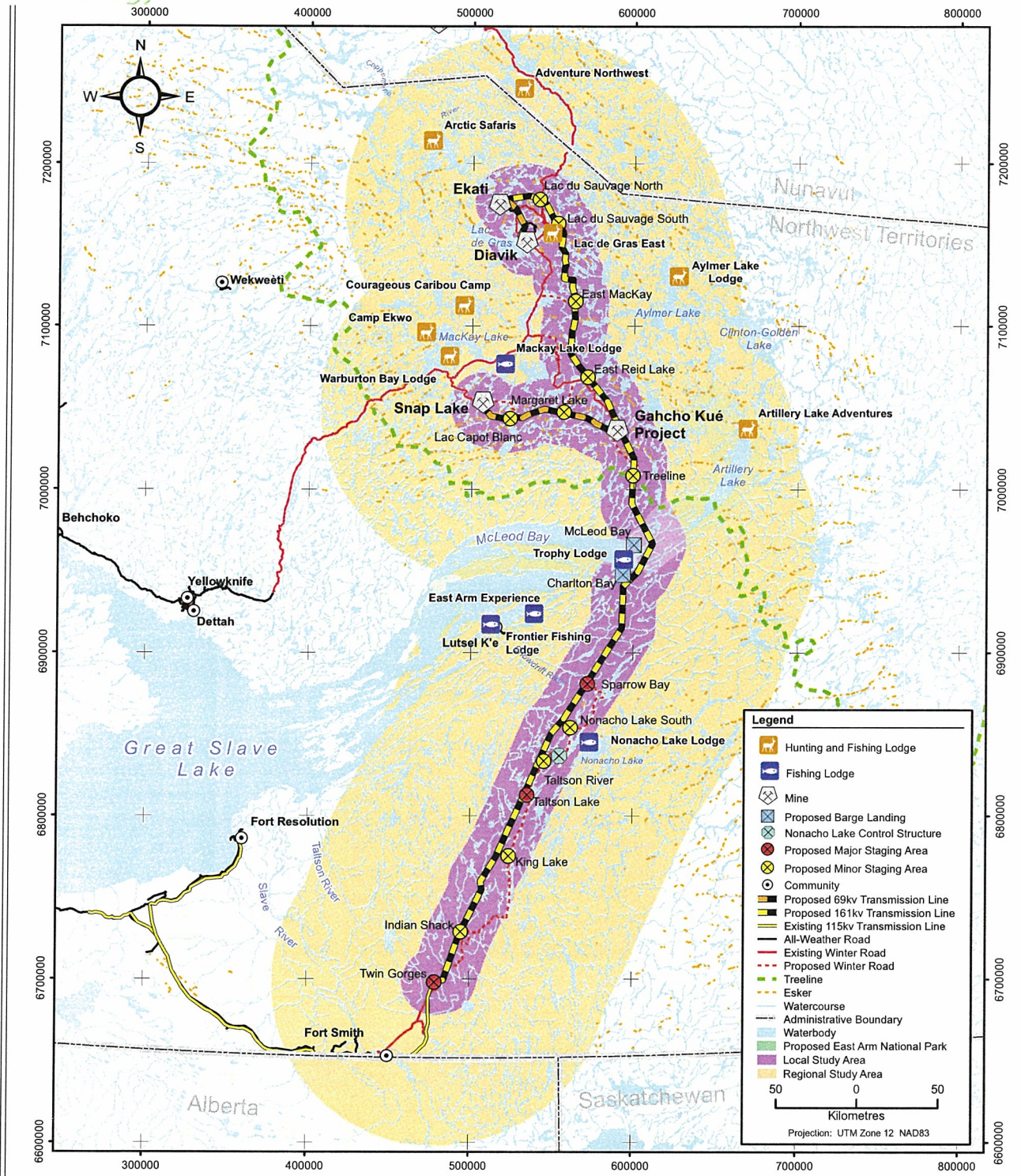
### 15.10.2.1 SPATIAL AND TEMPORAL SCALE OF ASSESSMENT

The spatial scales and boundaries selected for the effects assessment of the Project on tourism potential and wilderness character include two study areas, one local and one regional (Figure 15.10.1):

- Local Study Area (LSA): consists of the area within sight and hearing of the Project. This considered, in particular, the transmission towers and the helicopter activity which would take place along the length of the transmission line right-of-way (ROW), during both construction and operation.
- Regional Study Area (RSA): consists of the entire Project area (including both the transmission line and the winter roads), plus a 100 km buffer on either side. The boundary for the RSA was used to quantify baseline conditions at a scale that was large enough to assess the maximum predicted geographic extent of direct and indirect effects from the Project on valued components (VC). The study area includes the Ekati, Diavik and Snap Lake mines and the winter roads, which have the potential to increase access into otherwise remote wilderness areas. Also within the RSA are a number of tourist destinations, such as parks, protected areas, tourist lodges, and other tourist destinations that may be affected by the Project.

The expected length of time that Project-related stressors would influence VCs during the construction phase is three years. Currently, the Project is expected to be in operation for 20 years to service the existing and proposed diamond mines. However, the infrastructure would have a lifespan of at least 40 years, and it is the intent of Dézé to solicit new customers to extend the Project beyond 20 years. Subsequently, the expected length of time that Project-related stressors would influence VCs during the operation phase is assumed to be 40 years. Therefore, 40 years was defined as the longest reasonable duration of the operation phase for predicting and assessing effects from the Project.





**TALTSON**  
Hydroelectric Expansion Project

Developer's Assessment Report  
2009

Local and Regional Study Area for  
Tourism Potential and Wilderness Character

Figure  
15.10.1



### 15.10.3 Valued Components and Assessment Endpoints

An important aspect of the VC selection process is that it reflects the values expressed by concerned people during the public screening sessions. During the issue scoping exercises, concerns were expressed about the potential effects that the Project could have on tourism potential and wilderness character (MVEIRB 2008b). The selection process for VCs that address these concerns is described in the following sections.

#### 15.10.3.1 APPROACH TO SELECTION OF VALUED COMPONENTS

Four VCs were identified for tourism potential and wilderness character. These VCs were selected by considering the predominant tourism activities in the RSA, the values and concerns expressed during public hearings, and elements identified in the TOR (MVEIRB 2008). The VCs used for assessing the effects to tourism potential and wilderness character were:

- sport fishing,
- sport caribou hunting,
- guided canoeing, and
- enjoyment of the wilderness.

These VCs were selected because they represent important non-traditional activities and contribute to the NWT economy. Tourism is a source of income and economic development, and depends heavily on the wilderness character of the land (for example, see GNWT 2008). Also, the Project may affect human enjoyment of the surrounding wilderness, including the proposed Park.

Caribou is a signature species for sport hunting and wildlife viewing in the NWT, and the Project footprint is located within the various seasonal ranges of the Bathurst Caribou Herd. As an example of the importance of caribou to the livelihood of the hunting lodges, Artillery Lake Lodge was issued 36 caribou tags in 2006, compared to 5 wolf tags and 1 muskox tag for the same year. Aylmer Lake Lodge was issued 60 caribou tags in 2006, compared to 9 muskox tags and 0 wolf tags for the same year. Additionally, the GNWT promotes caribou as one of the species for wildlife viewing. Thus, although other wildlife are harvested by sport hunters in the RSA, caribou sport hunting was viewed as the driver of this industry, and was selected as the VC.

#### 15.10.3.2 ASSESSMENT ENDPOINTS

Assessment endpoints are general statements about the characteristic of the VC that is being protected. Assessment endpoints for the SON: Effects to Tourism Potential and Wilderness Character were preservation of:

- sport fishing opportunities,
- sport caribou hunting opportunities,
- guided canoe trip opportunities, and
- tourism potential and wilderness character.

#### 15.10.4 Pathway Analysis

##### 15.10.4.1 PATHWAY IDENTIFICATION

Pathways were developed to describe the ways that the Project may influence the VCs. These pathways were identified through reviewing concerns raised during the following:

- public information sessions in Fort Smith, Fort Resolution, and Hay River in March, 2004 (Rescan 2004);
- feedback received from the Aboriginal organizations, as well as territorial and federal government departments, during the land use permit application to the Mackenzie Valley Land and Water Board; and
- public hearings hosted by the MVEIRB, and the MVEIRB TOR (MVEIRB 2008a).

Pathway analysis identifies and screens the issues and linkages between Project components or activities and the potential effects on tourism potential and wilderness characteristics. A pathway analysis was completed for tourism potential and wilderness characteristics to identify Valid, Minor, and Invalid Project-related pathways.

##### 15.10.4.2 MITIGATION

Mitigation practices and design features are incorporated into the Project design and planned operational practices to either remove the pathway through which the Project could affect tourism potential or wilderness character, or to reduce effects of pathways that cannot be eliminated. The VCs for tourism and wilderness character consist of two components: availability of the resource and resource accessibility. Because wilderness is characterized by a lack of road access into an area, operational practices or design features that reduce or eliminate road access into an area are considered beneficial to wilderness character.

Mitigation practices and design features include Project design, environmental best practices, and management policies and procedures. The potential pathways and the associated mitigation that would be incorporated into the Project to reduce or eliminate effects are listed in Table 15.10.1.



Table 15.10.1 — Mitigation Practices and Design Features to Reduce Effects to Tourism Potential and Wilderness Character

| Project Component   | Pathway   | Pathway Duration           | Valued Component  | Mitigation  |
|---|---|----------------------------|---|---|
| Winter access roads<br>Temporary access trails<br>Barge landing   | Change in access affecting sport fishing and sport caribou hunting<br>Change in access to proposed East Arm National Park | Construction<br>Operations | Sport fishing<br>Sport caribou hunting<br>Enjoyment of the wilderness | Proposed winter roads for the Northern Sector would make use of existing winter roads and are expected to have negligible effect on access to wilderness area<br>Winter roads constructed for the southern sector would be temporary winter roads, used for only three winter seasons.<br>Public use of the southern sector winter roads would not be permitted<br>Following construction (March 2011), the winter roads would no longer be constructed or maintained, and slash would be placed across the lower portages to discourage human use<br>Recreational use of Project vehicles would not be permitted<br>There would be no winter roads or temporary access trails within the proposed East Arm National Park |
| Nonacho Lake control structure<br>Winter access roads<br>Temporary access trails<br>Transmission line<br>Barge landing<br>Substations | Change in availability of caribou for sport hunting   | Construction<br>Operations | Sport caribou hunting<br>Enjoyment of the wilderness                  | Construction activities in the vicinity of the caribou hunting camps would take place in winter, outside of the caribou hunting season<br>Adjustments would be made to tower locations during construction to avoid sensitive areas   |

| Project Component   | Pathway  | Pathway Duration            | Valued Component                             | Mitigation  |
|---|--|-----------------------------|--|---|
| Nonacho Lake control structure<br>South Valley Spillway<br>Twin Gorges facilities                                       | Change in availability of fish for sport fishing               | Construction and Operations | Sport fishing<br>Enjoyment of the wilderness | <p>DFO Operational Statements for Ice Bridges and Snow Fills in the NWT would be followed (DFO 2007).</p> <p>DFO Operational Statements for water withdrawal in the NWT would be followed (DFO 2005).</p> <p>Roads would avoid steep slopes</p> <p>Cut trees may be placed on steep slopes to reduce erosion potential.</p> <p>Erosion and Sediment Control Environmental Management Plan would be developed and adhered to.</p> <p>Disturbance to riparian zones would be avoided where practical.</p> <p>Stream crossing locations would consider bank stability and erosion potential.</p> <p>Recreational use of construction vehicles would not be permitted.</p> <p>Environmental sensitivity training for all staff would include a unit on erosion and sediment control.</p> <p>Existing permitted lake levels would be maintained.</p> |
| Nonacho Lake control structure<br>South Valley Spillway<br>Twin Gorges Facilities<br>Transmission Line<br>Barge Landing | Effect to aesthetic quality of rivers used by canoe outfitters | Construction and Operation  | Guided canoeing                              | <p>The Project would not affect navigability of rivers.</p> <p>The transmission line would not cross rivers commonly used by canoe trip outfitters.</p>   |

| Project Component   | Pathway  | Pathway Duration            | Valued Component            | Mitigation  |
|---|--|-----------------------------|-----------------------------|---|
| Winter Access Roads<br>Transmission Line<br>Barge Landing | Effects of noise to tourist enjoyment of wilderness<br>Effects of visual aesthetics to tourist enjoyment of wilderness | Construction and Operations | Enjoyment of the wilderness | <p>Construction activities in the vicinity of the caribou hunting camps would take place in winter, outside of the caribou hunting season.</p> <p>There would be a minimum flying altitude of 300 m for cargo and passenger aircraft when outside of the Project area.</p> <p>Transmission line noise would be negligible during operation.</p> <p>Staging areas on Great Slave Lake would be at least 300 m inland, reducing the effects of noise to Great Slave Lake.</p> <p>Transmission line crossing of the Lockhart River within the proposed East Arm National Park would be determined through discussion with the community of Łutsel K'e.</p> <p>Adjustments were made to the transmission line alignment between the Gahcho Kué Project and Ekati Diamond Mine to make it less visible from tourist destinations on MacKay Lake and Lac de Gras.</p> |



In addition to the mitigation that reduces the potential effects of the Project on tourism potential or wilderness character, other Key Lines of Inquiry or Subjects of Note discuss the mitigation and residual effects to the various resources themselves. For example, a detailed presentation of design features to reduce the potential effects of the Project to caribou, fish, navigability and access can be found in the Key Lines of Inquiry Barren-ground Caribou (Section 12) and Water Fluctuations in the Taltson River Watershed (Section 13), and the Subject of Note - Access (Section 15.5).

#### 15.10.4.3 PATHWAY VALIDATION

In the pathway validation step, each potential pathway was screened to assess its validity for the Project after mitigation practices and design features have been incorporated. Each potential pathway is evaluated and characterized as follows:

- **Invalid** – pathway does not exist, is removed by mitigation, or mitigation results in no detectable (measurable) change and residual effect relative to baseline or guideline values.
- **Minor** – mitigation results in a minor change from the pathway, but has a negligible residual effect (e.g., a small reduction in amount of aesthetic quality, or a short-duration stressor such as helicopter overflights, but have little effect on the tourism industry or the integrity of the wilderness).
- **Valid** – a pathway that likely contributes to residual effects to a VC.

Invalid, Minor or Valid pathways are determined using scientific knowledge, logic, and experience with similar developments. Invalid and Minor pathways were not carried forward into the effects assessment. A more detailed analysis of potential effects is conducted for Valid pathways. A summary of the pathways investigated, and their validity, is provided in Table 15.10.2. Full details are provided in the sections below.

Table 15.10.2 — Pathway Validation Results for Tourism Potential and Wilderness Character

| Project Component   | Pathway  | Pathway Duration           | VC  | Pathway Validity |
|---|--|----------------------------|---|------------------|
| Winter Access Roads<br>Temporary Access Trails<br>Barge Landing   | Change in access affecting sport fishing and sport caribou hunting | Construction<br>Operations | Sport fishing<br>Sport caribou hunting<br>Enjoyment of the wilderness | Invalid          |
| Winter Access Roads<br>Temporary Access Trails<br>Barge Landing   | Change in access to proposed East Arm National Park                | Construction<br>Operations | Enjoyment of the wilderness   | Invalid          |
| Nonacho Lake control structure<br>Winter Access Roads<br>Temporary Access Trails<br>Transmission Line<br>Barge Landing<br>Substations | Change in availability of caribou for sport hunting                | Construction<br>Operations | Sport caribou hunting   | Minor            |
| Nonacho Lake control structure<br>South Valley Spillway<br>Twin Gorges facilities   | Change in availability of fish for sport fishing                   | Construction<br>Operations | Sport fishing   | Minor            |
| Nonacho Lake control structure<br>South Valley Spillway<br>Twin Gorges Facilities<br>Transmission Line<br>Barge Landing               | Effect to aesthetic quality of rivers used by canoe outfitters     | Construction<br>Operations | Guided canoeing   | Minor            |
| Winter Access Roads<br>Transmission Line<br>Barge Landing   | Effects of noise to tourist enjoyment of wilderness                | Construction<br>Operations | Enjoyment of the wilderness   | Minor            |
| Winter Access Roads<br>Transmission Line<br>Barge Landing   | Effects of visual aesthetics to tourist enjoyment of wilderness    | Construction<br>Operations | Enjoyment of the wilderness   | Valid            |

#### 15.10.4.4 INVALID PATHWAYS

Pathways may be Invalid if the activity does not occur, or if the pathway does not affect an assessment endpoint relating to tourism potential or wilderness character. Invalid pathways are not assessed in the effects analysis for tourism potential or wilderness character. The following section explains pathways that were determined to be Invalid for linking Project-related activities to effects on the tourism potential or wilderness character. These Invalid pathways are not carried forward to the effects assessment.

##### 15.10.4.4.1.1 *Change in Access Affecting Sport Fishing and Sport Caribou Hunting*

During the construction phase of the Project, winter roads would be used to transport equipment and construction workers within the RSA. The proposed winter roads for the northern sector of the Project would use existing winter roads, such as the Tibbitt to Contwoyto winter road and temporary access trails from existing or proposed diamond mine sites. These roads often do not require clearing of vegetation, and would not be operable during the sport hunting season for caribou, which may only occur between 15 August and 30 November (ENR 2007). Within the southern sector, the Twin Gorges to Nonacho Lake winter road and temporary access trails would only exist during the winter, when the sport fishing lodges are closed. Thus, this pathway was determined to be Invalid.

##### 15.10.4.4.1.2 *Change in Access to the Proposed East Arm National Park*

No winter roads are proposed within the boundaries of the proposed East Arm National Park. During the construction phase of the Project, winter roads and temporary access trails would be used to transport equipment and construction workers. The proposed winter roads for the northern sector of the Project would use the existing winter roads, such as the Tibbitt to Contwoyto winter road and spur roads from existing or proposed diamond mine sites. The northern sector winter roads would terminate at the treeline staging area, and would not enter the proposed national Park. The winter road for the southern sector would end at the Sparrow Bay staging area. Temporary access trails would extend from the Sparrow Bay staging area to the boundary of the proposed East Arm National Park, but would not extend into the Park. The southern sector winter roads would be closed to public use, and the entrance to the Twin Gorges to Nonacho Lake winter road would be blocked at the end of each hauling season through the use of gates, snow berms, and slash. After the construction phase (March 2011), the winter roads would no longer be constructed or maintained, and slash would be placed across the lower portages to discourage use. Thus, the Project is not anticipated to change access to the proposed Park, and the pathway was determined to be Invalid.

##### 15.10.4.4.2 Minor Pathways

In some cases, both a source and a pathway exist, but the change caused by the Project is expected to be minor. Minor pathways are not assessed in the effects analysis for tourism potential and wilderness character. The following were determined to be Minor pathways for effects on tourism potential and wilderness character.



#### **15.10.4.4.2.1 *Change in Availability of Caribou for Sport Hunting***

The availability of caribou is a function of changes in caribou abundance and caribou distribution. With regard to caribou abundance, population viability modelling has indicated that the Project would not cause any detectable changes to the population of the Bathurst caribou herd (the herd most affected by the Project). A full discussion of the Project's potential effects and cumulative effects on caribou herds can be found in the Key Line of Inquiry: Barren-ground Caribou (Section 12).

With regards to caribou distribution, the combination of direct (i.e., physical footprint) and indirect (i.e., noise and other sensory disturbances) effects can create a zone of influence (ZOI), which is an area within which caribou behaviour and occurrence may be affected. During construction, noise would be generated from mobile and stationary equipment, haul trucks on winter roads, helicopters, and aircraft within the RSA. Based on information regarding caribou behavioural reactions to development, it is anticipated that caribou presence within 5 km of the Project footprint may be affected (see Section 12 – Barren-ground Caribou). As none of the caribou hunting lodges are within 5 km of the Project footprint, caribou hunting and viewing opportunities are not anticipated to be noticeably affected by the Project.

Caribou hunting activity is unpredictable and dispersed throughout the above-treeline regions of the RSA. Smaller outpost camps or temporary drop camps, serviced through the main lodge, are often used by outfitters to access caribou (GNWT 2008). It is normal practice for sport hunters to travel long distances by boat to hunt caribou. For example, MacKay Lake is approximately 100 km long, and hunters may travel by boat to either end of this lake in search of caribou (G. Jaeb, True North Safaris, personal communication, 27 August 2008). The Lac de Gras Hunting Camp is within 9 km of the Ekati diamond mine (Misery Pit) and within 15 km of the Diavik diamond mine, but hunting activity has persisted at this camp. Considering the large areas over which sport caribou hunting currently occurs, the mobility of hunters using boats on large lakes, and the relatively small zone of influence of the Project, effects of the Project on caribou availability may be considered to be Minor.

#### **15.10.4.4.2.2 *Change in Availability of Fish for Sport Fishing***

Construction and operation of the Nonacho Lake control structure and the South Valley Spillway may cause changes in water quality due to in-stream works, or changes in the hydrological regime of Nonacho Lake and downstream, with resulting changes in the quality of fish habitat. However, the variations are expected to be within the same range as found in baseline conditions (see Section 13 - Water Fluctuations in the Taltson River Watershed for further details on effects to fish). Effects to water quantity and quality would be confined to the Taltson River downstream of Nonacho Lake. As such, any effects to fish would be confined to the Taltson watershed. Effects to the availability of fish for sport fishing are considered Minor for the Taltson watershed, and Invalid for other watersheds through which the Project transmission line and winter roads would travel.

**15.10.4.4.2.3 Effect to Aesthetic Quality of Rivers Used by Canoe Outfitters**

The guided canoe trip industry depends upon both the qualities of the river and the wilderness through which the river travels. Major rivers within the RSA that are intercepted by the Project include the Taltson River, the Snowdrift River, the Lockhart River, and the upper Coppermine River. Of these, only the Coppermine River is used as a regular destination for canoe outfitters (see Blackfeather 2008 and Wanapitei 2008). However, the Project would cross the upper Coppermine, upstream of Lac de Gras, a reach not used by canoe outfitters. Of the top 12 rivers recommended by the NWT tourism website (GNWT 2008), neither the Taltson, Snowdrift, nor Lockhart rivers receive mention. Bathurst Arctic Services lists the Taltson and Snowdrift Rivers among the boreal forest rivers for which they offer guided canoe trips on demand (Bathurst Arctic Services 2008). Of these, the Snowdrift River would be crossed once by the transmission line. On the Taltson River, there would be aesthetic effects in areas due to the transmission line and upgrades to existing facilities (including the Nonacho Lake control structure, the South Valley Spillway, and the Twin Gorges facilities).

Further, much of the construction activity would take place during winter, outside of the canoeing season. Thus, while there are anticipated to be minor aesthetic effects to several rivers, no effects to the main guided canoe trip destinations would occur, and the overall effects to the guided canoe trip industry are anticipated to be Minor. There would be a slight change to the hydrology regime, which is not anticipated to affect navigability (discussed in Access - Section 15.5).

**15.10.4.4.2.4 Effects of Noise to Tourist Enjoyment of Wilderness**

The potential effects of Project noise on tourist enjoyment considered the sources and distribution of noise, and the potential overlap of noise with tourist destinations within the LSA. Noise would predominantly be created during the construction phase (from 2010 to 2012), although the seasonal and geographic locations of this noise would vary throughout construction (see Section 6.5 - Project Construction). During the construction phase, noise would be generated from mobile and stationary equipment, blasting, helicopters, and aircraft. Table 15.10.3 provides an estimate of the noise levels for various activities associated with the Project construction phase. These activities include clearing vegetation and construction activity, noise from a helicopter hovering at 200 m elevation, noise from a helicopter flying by at 200 m elevation, and noise associated with construction work at the staging areas.

During the construction phase, extensive use of low-level helicopter flights would be required within the transmission line ROW to place transmission line towers and string the conductor. Helicopters are anticipated to be the largest single source of noise, and the distance for helicopter noise to reach background levels is 6 km. During operations, aircraft would be used for the movement of personnel to the Twin Gorges site throughout the year. The distance for noise to reach background levels from the airstrip is 6 km (i.e., contained within the LSA); however, this noise would be limited to a few minutes during takeoff and landing, and a maximum of two round-trip flights per week.



The barge staging areas at Charlton Bay and McLeod Bay (the latter is within the proposed Park (see Figure 15.10.1)), would be active between May and September 2010, during March 2011, and between June and October 2011. During this time, construction and seasonal camp activity can be expected. As transmission line access and construction through the proposed East Arm National Park would be by helicopter (to reduce effects to vegetation), there may be a greater degree of noise than may be expected from winter road access and construction. This has been mitigated by placing the staging camps approximately 300 m to 400 m inland from Great Slave Lake, which would reduce noise and remove them from the viewshed of Great Slave Lake. Regardless, it is anticipated that noise from the staging areas and helicopter operations would be detectable from Great Slave Lake. Helicopter noise in particular may be above baseline levels for up to 6 km. Some seasonal effects to boaters on Great Slave Lake are therefore possible between June and September 2010, during March 2011, and between June and October 2011.

**Table 15.10.3 — Construction Scenario Noise Predictions Relative to Distance from Activity**

| Distance from Source to Nearest Receiver (m) | PREDICTED NOISE LEVEL $L_d$ (dBA) <sup>1</sup> |                                     |                                   |               |
|--|--|-------------------------------------|-----------------------------------|---------------|
|  | Clearing and Preparation (Staging or ROW)      | Helicopter Work (hovering at 200 m) | Helicopter Work (fly-by at 200 m) | Staging Areas |
| 1,000  | 41   | 46                                  | 41                                | 42            |
| 2,000  | 34   | 39                                  | 34                                | 35            |
| 3,000  | 30   | 33                                  | 29                                | 30            |
| 8,000  | 12   | 16                                  | 11                                | 12            |

<sup>1</sup>  $L_d$  (dBA) = daytime period noise equivalent noise level in A-weighted decibels.

Noise would not only emanate from the various camps and staging areas within the LSA, but from the transmission line construction activity, which would be dispersed over the entire length of the transmission line (also within the LSA). A list of 13 popular tourist destinations (including lodges, camp sites, boating sites and areas of cultural significance) is provided in Table 15.10.4. Tourists may include both out-of-territory visitors and local residents (aboriginal and non-aboriginal). The tourist destinations in Table 15.10.4 were selected to include locations used by both groups. For example, out-of-territory tourists are the most common clients at the sport hunting and fishing lodges and NWT residents are likely the most common group among boaters (including power boat, sailboat, and kayak) on Great Slave Lake during summer. Parry Falls is considered to be a culturally important area for the residents of Łutsel K'e (see Section 9.6 - Human Environment).

Two popular canoeing locations, Pike's Portage at Great Slave Lake and the Lockhart River outflow, are located less than 3.5 km from the transmission ROW (Table 15.10.4) and within the LSA. Both are within the proposed Park boundaries. Again, construction activity in that sector is anticipated to occur between May and September 2010, during March 2011, and between June and October 2011. Any canoeists that are at these locations while construction is occurring on the nearby ROW may be able to hear construction noise. Two other tourist locations, Trophy



Lodge and the Lockhart River outflow from Mackay Lake, are situated more than 3.5 km but less than 6 km from the Project ROW. If there are helicopters working at the Project ROW close to these locations, visitors to the camps or canoeists on the Lockhart River outflow may be able to hear them. The Nonacho Lake Lodge operates from mid-June to early September (Nonacho Lake Fishing Camp 2008), and offers sport fishing and sightseeing. As the camp is over 20 km from the transmission line route, no effects from noise are anticipated. Construction activity during the fishing season in the Southern sector would only take place in 2011 (see Section 6.5 - Project Construction).

Sport hunting for caribou within the RSA (hunting zone R/BC/01) may only occur between 15 August and 30 November (ENR 2007). Construction activity within the northern sector would occur only during winter (i.e., between January and April 2010, and January and March 2011; see Section 6.5 - Construction Methods). As such, there is no temporal overlap between caribou hunting and noise from Project construction.

During the operations phase, the generation of noise would be substantially less than during construction. Possible sources include corona noise from the transmission line, noise during transmission line inspections, and noise created from the Twin Gorges facilities and camp. Corona noise from the transmission line would be negligible (Teshmont, 2008), although some noise may occur from the transmission line and towers as a result of wind. Other sources of noise during the operations phase would be the Twin Gorge facilities and transmission line inspections. The Twin Gorges facilities (and associated weekly aircraft flights) are not anticipated to affect any existing tourism lodges, as Twin Gorges is over 100 km from the nearest existing lodge (see Figure 15.10.1). Routine inspections of the transmission line are anticipated to occur once or twice per year, and would require a single helicopter flight along the entire length of the transmission line.

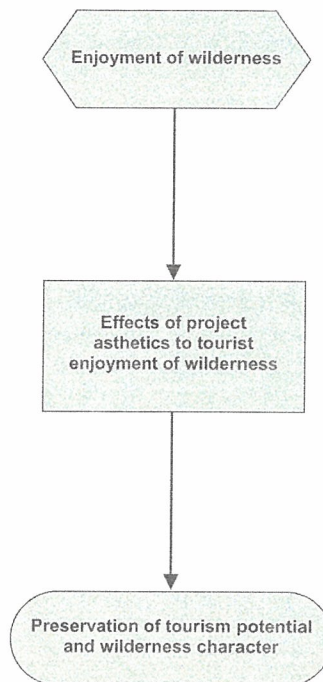
Overall, there may be some minor and short-term effects to tourist enjoyment of wilderness due to noise within the LSA. However, the noise would attenuate to background levels within 6 km, and in many cases the main sources of noise would not be active during the peak tourist season (i.e., the sport hunting and fishing season, or the canoeing season). Thus, effects from Project noise within the LSA were thus considered to be of negligible effect to tourist enjoyment of wilderness, and the pathway is considered to be Minor.

Table 15.10.4 — Distances to the Closest Tourist Destinations from the Project Right-of-Way

| Destination                         | Activity                       | Location Relative to Treeline | Distance from Project Right-of-Way (km) |
|-------------------------------------|--------------------------------|-------------------------------|---|
| Pike's Portage: Great Slave Lake    | Canoeing                       | Boreal                        | 1.9                                     |
| Lockhart River outflow              | Boating/ cultural significance | Boreal                        | 3.1                                     |
| Trophy Lodge                        | Sport fishing                  | Boreal                        | 4.6                                     |
| Mackay Lake outflow                 | Sport hunting and fishing      | Tundra                        | 5.7                                     |
| Lac de Gras hunting camp            | Sport hunting and fishing      | Tundra                        | 6.3                                     |
| Lac de Gras narrows                 | Sport hunting and fishing      | Tundra                        | 6.5                                     |
| Charlton Bay                        | Boating                        | Boreal                        | 6.5                                     |
| North of Reliance                   | Boating                        | Boreal                        | 9.3                                     |
| Parry Falls (Old Lady of the Falls) | Hiking/cultural significance   | Boreal                        | 9.6                                     |
| Nonacho Lake                        | Sport fishing                  | Boreal                        | 15.3                                    |
| Pike's Portage: Artillery Lake      | Canoeing                       | Tundra                        | 15.7                                    |
| Nonacho Lake Lodge                  | Sport hunting and fishing      | Boreal                        | 20.8                                    |
| Mackay Lake Lodge                   | Sort hunting and fishing       | Tundra                        | 33.1                                    |

#### 15.10.4.4.3 Valid Pathways

All Valid pathways are carried forward and assessed in the effects analysis. One pathway is Valid for linking Project-related components and activities to effects on tourism potential and wilderness character. This is the effect of visual aesthetics on tourist enjoyment of wilderness, analyzed in the section below (see Figure 15.10.2).





### 15.10.5 Effects of Visual Aesthetics to Tourist Enjoyment of Wilderness

#### 15.10.5.1 PROJECT-SPECIFIC EFFECTS

The assessment of effects of the Project to visual aesthetics employed a viewshed analysis in which the visibility of transmission towers and power lines was determined for tourist destinations within the LSA. The GIS analysis determined the potential number of transmission towers (based on 350 m spacing) visible from various receptor sites as well as the length of transmission line visible from the sites. The study area for the viewshed analysis was an LSA of 20 km on either side of the Project, which was chosen to include areas within the viewshed of the Project.

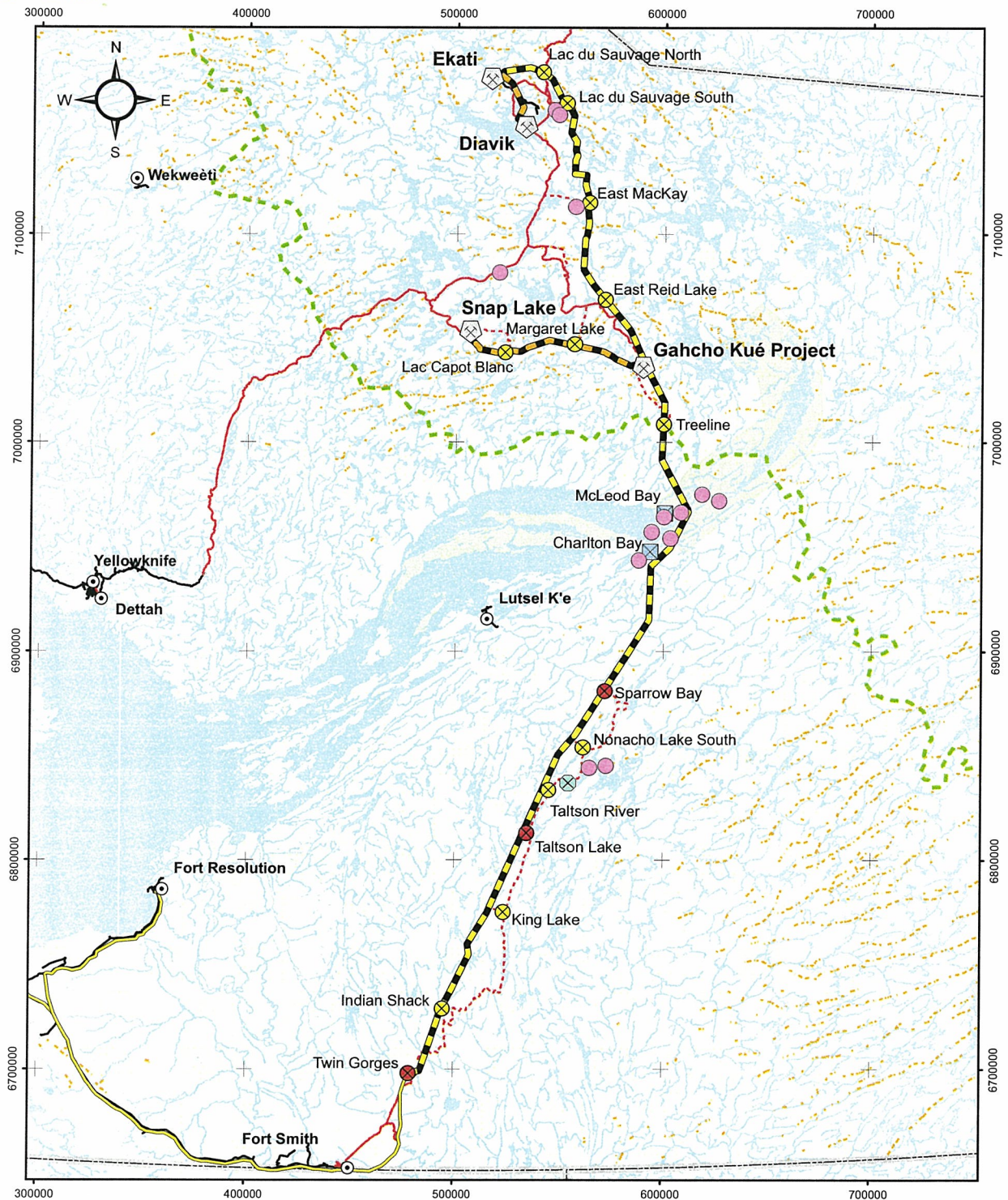
The viewshed analysis was performed based on the transmission line alignment and the Canadian Digital Elevation Data (CDED). Observation points were placed in regular intervals of 350 m along the transmission line to represent the proposed towers. For each of these observation points, the viewshed within 20 km was determined. The viewshed includes all the areas where an observer might see the Project. A tower height of 25 m and an observer height of 2 m was assumed. The final output of the analysis indicates all the areas where the transmission line would be visible. The analysis did not consider forest, which would obstruct some views. Locations south of the treeline are more likely to have some views obstructed. The CDED in the study area has a pixel size of approximately 17.75 m. There is no specific information about the vertical and horizontal accuracy of the data, derived from 1:50,000 National Topographic System maps.

Receptors for the viewshed analysis were the tourist destinations located within the LSA. Tourists may include both out-of-territory visitors and local residents (aboriginal and non-aboriginal). The tourist destinations in Table 15.10.5 and Figure 15.10.3 were selected to include locations used by both groups. For example, out-of-territory tourists are the most common clients at the sport hunting and fishing lodges, NWT residents are likely the most common group among boaters (including power boat, sailboat, and kayak) on Great Slave Lake during summer, and for the residents of Łutsel K'e, Parry Falls is considered to be a culturally important area (see Section 9.6 - Human Environment). Table 15.10.5 summarizes the tourist destinations in the viewshed analysis study area and describes whether the destinations are north or south of the treeline, the number of towers, and the length of transmission line that could be visible from the various tourist destinations.

Table 15.10.5 — Results of Viewshed Analysis of Tourist Destinations

| Tourist Destination                     | Activity                    | Location Relative to Treeline | Length of Visible Transmission Line (km) | Number of Towers Visible from Destination | Distance to Transmission Line (km) from Tourist Destination |
|---|-----------------------------|-------------------------------|--|---|---|
| Lac de Gras Narrows                     | Sport hunting and fishing   | Tundra                        | 13                                       | 38  | 6.5   |
| Lac de Gras hunting camp                | Sport hunting and fishing   | Tundra                        | 1  | 3   | 6.3   |
| MacKay Lake outflow                     | Sport hunting and fishing   | Tundra                        | 0  | 0   | 5.7   |
| North of Reliance (on Great Slave Lake) | Boating                     | Boreal                        | 15                                       | 43  | 9.3   |
| Trophy Lodge                            | Sport fishing               | Boreal                        | 10                                       | 28  | 4.6   |
| Lockhart River outflow                  | Boating/cultural importance | Boreal                        | 2  | 7   | 3.1   |
| Charlton Bay (on Great Slave Lake)      | Boating                     | Boreal                        | 0  | 0   | 6.5   |
| Pike's Portage: Great Slave Lake        | Canoeing                    | Tundra                        | 0  | 0   | 1.9   |
| Parry Falls (Old Lady of the Falls)     | Hiking/cultural importance  | Boreal                        | 0  | 0   | 9.6   |
| Pike's Portage: Artillery Lake          | Canoeing                    | Tundra                        | 0  | 0   | 15.7  |
| Nonacho Lake                            | Sport fishing               | Boreal                        | 0  | 0   | 15.3  |





# **TALTSON**

Hydroelectric Expansion Project

Developer's Assessment Report  
2009

Location of Viewshed Analysis Receptors

Figure  
15.10.3