Hamlet of Tuktoyaktuk, Town of Inuvik
Government of Northwest Territories

ISSUED FOR USE

RESPONSE TO THE MAY 25, 2012 DIRECTIVES (DIRECTIVE 6B) FROM THE ENVIRONMENTAL IMPACT REVIEW BOARD FOR CONSTRUCTION OF THE INUVIK TO TUKTOYAKTUK HIGHWAY, NWT

EIRB FILE NO. 02/10-05

September 4, 2012

The Developers of the proposed Inuvik to Tuktoyaktuk Highway are pleased to provide a response to Directive 6 issued by the Environmental Impact Review Board on May 25, 2012. Responses to the other directives were previously submitted to the EIRB:

- Directives 1,2, 5, 6a,7 and 8 were submitted July 13, 2012
- Directive 4 (Information Requests #147 to #152) was submitted June 11, 2012; and
- Directive 5 (updating the socio-economic effects assessment with 2011 census data) was submitted June 7, 2012.

The Developers' response is included after each Directive. Any tables or figures from the EIS or previous response documents have retained their original number.

Directive 6:

Source: **Environmental Impact Review Board**

To: **GNWT Department of Transportation, Town of Inuvik, Hamlet of Tuktoyaktuk**

a) The Developer will re-evaluate the impacts and proposed mitigation for any valued socio-economic component based on the information gathered and provided in the Traditional Knowledge and Traditional Land Use report.
b) The Developer will also re-evaluate the impacts and proposed mitigation for any valued socio-economic component that would be affected by changes to the biological components where baseline information will only become available in August 2012.

Developer Response 6:

For the purpose of responding to this Directive, the Developer has split the EIRB's Directive into part a) and part b). The response to part a) was provided in the document entitled "Response to the May 25, 2012 Directives" submitted to the EIRB on July 13, 2012 (Registry document #233). It should be noted that the Developer also provided a separate response to the comments and recommendations identified in the Traditional Knowledge workshops (submitted to the EIRB on August 31, 2012).

The response to part b) will re-evaluate the impacts and proposed mitigation for valued socio-economic components affected by changes to the biological components, but also includes information provided by agencies and individuals that relates to the assessment.

The Valued Socio-Economic Components (VSCs) identified in Section 4.3 of the EIS include:

- Land and resource use by the Inuvialuit;
- Areas of special ecological and cultural importance;
- Land designation areas (as per IFA and CCPs);
- Tourism, commercial and public recreational use; and
- Heritage and archaeological sites.

Table 4.3-1 of the EIS summarizes the effects identified for the VSCs, and is reproduced as follows.

TABLE 4.3-1 VALUED SOCIO-ECONOMIC COMPONENT ASSESSMENT SUMMARY

Valued Socio-Economic Component	Potential Effect	Affected Areas	Duration	Magnitude	Likelihood	Capacity to Manage Effect
Land and Resource Use by the Inuvialuit	Beneficial/ Adverse	Tuktoyaktuk Inuvik ISR	Long-term	Moderate/ Low	Moderate/ Moderate	Territory and ISR partners have the capacity to manage
Areas of Special Ecological and Cultural Importance	Neutral	Tuktoyaktuk Inuvik ISR	Long-term	Low	Moderate	Territory and ISR partners have the capacity to manage
Land Designation Areas (as per IFA and CCPs)	Adverse	Tuktoyaktuk Inuvik ISR	Long-term	Low	Low	Territory and ISR partners have the capacity to manage
Tourism, Commercial and Public Recreational Use	Beneficial	Tuktoyaktuk Inuvik ISR	Long-term	High	High	Territory, municipalities and ISR partners have the capacity to manage
Heritage and Archaeological Sites	Neutral	Tuktoyaktuk Inuvik ISR	Short-Term	Negligible	High	Territory, municipalities and ISR partners have the capacity to manage

Since the EIS submission in May 2011, key changes to the Project include:

- Fewer borrow sources proposed for use now than previously identified
- Eliminated Alternative 2 (Upland Route) from consideration
- Confirmed Alternative 3 (2010 Minor Realignment) as the preferred alignment.

In addition, the Developer has conducted several additional studies, including:

- Fish Habitat Assessment at select Watercourse Crossings along the Inuvik to Tuktoyaktuk Highway (Registry document #117-120)
- Final Terrain Evaluation Report, Surficial Geology and Terrain Constraints (Registry document #147-148)
- Preliminary Draft Vegetation Report and Preliminary Vegetation Classification Map (Registry document #166-167)
- Preliminary Wildlife Habitat Potential Mapping (Registry document #187-192)
- Summary of Existing Traditional Knowledge (Registry document #198)
- Traditional Knowledge Workshops (Inuvik and Tuktoyaktuk) Report (Registry document #199)
- Draft Borrow Source Geotechnical Investigation Report for Borrow Sources 170, 172, 173/305, 307, 312, 314/325, 2.45 (Registry document #212)

- Final Wildlife Habitat Potential Mapping Report (Registry document #224-231)
- Final Borrow Source Geotechnical Investigation Report for Borrow Sources 170, 172, 173/305, 307, 312, 314/325, 2.45 (Registry document #232)
- Final Vegetation Mapping and Rare Plant Survey Report (Submitted to EIRB, but not yet posted to registry)
- Final Terrain and Permafrost Field Verification Program Report (Submitted to EIRB, but not yet posted to registry)
- Surficial Geology and Terrain Constraints (Submitted to EIRB, but not yet posted to registry)
- Watercourse Crossing Master Table (Submitted to EIRB, but not yet posted to registry)
- Supplementary Wildlife Habitat Maps and Metrics for Borrow Sources 177, 174, 309 and PW2 (Submitted to EIRB, but not yet posted to registry)
- Updated Commitments Table (Submitted to EIRB, but not yet posted to registry)

Other information related to the management of resources has also been submitted by agencies during the information requests and the Technical Sessions, that should be considered in the re-assessment.

Land and Resource Use by the Inuvialuit

Land and resources are highly valued by the Inuvialuit, as documented in the Inuvik and Tuktoyaktuk Community Conservation Plans and various traditional knowledge studies, including the Inuvik to Tuktoyaktuk Highway Traditional Workshop Report (Kavik-Stantec 2012). In particular, the Inuvialuit rely on fishing, hunting and trapping for subsistence. A key concern of the Inuvialuit is how the Highway will affect land and resource use.

The Project may affect land and resource use by:

- Changes in time available to engage in traditional harvesting activities
- Employment income, generating opportunity to purchase costly harvesting equipment (e.g., snowmachines, all-terrain vehicles, etc.)
- Changes in land use patterns
- Decrease in land base and effects on vegetation, fish and wildlife.

The Project will affect traditional harvesting through effects on the time and resources available for harvesting, and on motivation to do harvesting work. Project demand for workers will be found in both Inuvik and Tuktoyaktuk, with the majority of the work occurring during winter construction seasons. There is concern that increased employment could reduce time spent on harvesting activities; however, employment earnings could create opportunity for purchasing new or better harvesting equipment, which could make harvesting more efficient and productive.

Purchasing new or better harvesting equipment may also increase motivation for traditional harvesting. Alternatively, motivation to harvest may be reduced by incoming wages.

The seasonal nature of the primarily winter construction may affect harvesters by causing them to shift between full-time, seasonal and/or recreational harvest categories.

Potential effects of the Project on Inuvialuit land and resource use have been identified in the EIS and subsequent response documents. Key concerns raised include:

- Increased access to the area between Inuvik and Tuktoyaktuk, resulting in increased harvesting and depletion of resources
- Zones of influence potentially affecting the distribution and abundance of wildlife.

Developer-related mitigation measures and commitments are provided in the EIS, subsequent response documents and Table F – Commitments Table, August 2012 updated version. These mitigation measures remain applicable and accurate.

Change in Access and Land Use Patterns

During construction, the Highway will be closed to public use, preventing access to the area during the construction period. During operations, the public would have access to the Highway. The Department of Transportation is responsible for the area within the right-of-way, but has no mandate for controlling access beyond the right-of-way.

The Developer recognizes that constructing a Highway could create opportunity for Highway users to leave the Highway and access areas outside of the right-of-way. The challenge with mitigating this effect is that access to the lands is the responsibility of third parties.

In the responses submitted to the EIRB in information requests and during the Technical Sessions, several agencies identified their mandate and responsibility regarding Project-authorizations, controlling public access from the Highway, conducting monitoring, and/or developing, implementing and enforcing management plans. These responses are posted to the EIRB registry. Examples of applicable text include:

The ILA (in document # 159) states that "… while these activities will result in land impacts, the impacts can in large part be managed and the resulting activities will be beneficial…" The ILA also states that "ILA has reviewed the highway route and identified locations on Inuvialuit lands where it is likely there will be land use demands for activities such as boat launching and the establishment of cabins. These sites will be monitored by ILA and the necessary steps taken to ensure an appropriate level of protection of Inuvialuit lands at these locations – up to and including refusal to permit certain activities. Ongoing monitoring will also identify other areas that may require similar attention."

Aboriginal Affairs and Northern Development Canada (AANDC) states in document #161 that Table F (the Developer's Commitments Table) "is adequate at this point for those mitigations which may not be a specific term or condition in an AANDC authorization… AANDC will rely on its own terms and conditions contained within its authorizations to ensure the appropriate level of environmental protection."

In terms of management of resources, related to access, the following responses from various agencies were submitted to the EIRB.

The GNWT ENR (in document #163) states that "wildlife management zones and harvest restrictions are revisited annually. In the ISR, restrictions on Aboriginal hunting rights are established through recommendations from WMAC and the IGC. These recommendations are incorporated into the HTC by-laws which are translated into regulations under the NWT Wildlife Act. The GNWT renewable resource officers are responsible for enforcing the regulations."

The Inuvialuit Game Council (IGC) (in document #164) states that "the IGC would work with these departments and organizations [GNWT ENR, DFO, the Inuvialuit co-management boards and the Hunters and Trappers Committees] on determining if there are project-related effects and, if so, to work through the integrated co-management process – established pursuant to the Inuvialuit Final Agreement (IFA) – to recommend appropriate mitigative measures."

FJMC (in document #152) states that "under the IFA Section 14.(64) The FJMC (with DFO and the HTC's) has responsibility for monitoring and mitigating project-related effects on harvesting. DFO would have primary compliance/ enforcement responsibilities."

DFO (in document #156) states "management of the highway corridor will be done in cooperation with HTCs, DFO and the FJMC. … Any management plan for the Highway corridor will establish monitoring and evaluate all possible regulatory and management tool options." The DFO state that "implementation of any [fisheries management] plans would be the joint responsibility of the parties who develop the plan; most likely DFO, the Inuvik and Tuktoyaktuk HTCs, and the FJMC. The HTCs will enforce their own by-laws, and DFO will enforce the *Fisheries Act*." They go on to state "DFO Fish Habitat Biologist and Fishery Officers may also conduct adhoc compliance monitoring site visits to ensure that all activities are in compliance with the Fisheries Act as well as conditions included in authorizations."

Increased access to wildlife or fisheries resources could result in a positive effect for tourism, commercial and public recreational users, but a negative effect on traditional harvesters. Another effect of the Highway may be a change in locations of where harvesting occurs. Harvesting activities that may have previously been associated with the winter road between Inuvik and Tuktoyaktuk may change to locations near the Highway. In addition, collisions with vehicles on the Highway could cause some mortality to wildlife. Although this should not lead to a decrease in harvest success, it may affect the harvest quotas.

Due to the increased access between Inuvik and Tuktoyaktuk, it is anticipated that there will be increased tourism, commercial activity and public recreational use in Inuvik, Tuktoyaktuk and and/or the area between the communities. This may cause conflict with Inuvialuit harvesters.

Disturbance to Land Users

Two residential leases are located within 1 km of Alternative 3, and 19 leases are located within 1-5 km of Alternative 3. The leaseholders within 1 km of the alignment may notice some change in vegetation (due to dust) and air quality (due to dust) up to 400 m from the Highway during snow-free periods, which may affect wildlife habitat in the area during that season. In addition, the Highway footprint will decrease available wildlife habitat near the leases (see subsection 'Decrease in Land Base). Leaseholders may also be affected visually and experience some noise disturbance. The Developer's Response to Information Request 13.3 and 115.1 provides additional information regarding the potential effect to quality of life and zone of influence based on noise.

Decrease in Land Base/ Effects on Vegetation, Fish and Wildlife

As stated in Table 4.2.6-1 of the EIS, the Highway footprint is approximately 380 ha, with a potential 1,630 ha used for borrow sources (Kavik-Stantec 2012). Areas adjacent to the alignment may be affected by noise (up to 1.5 km) and dust (up to 400 m from the Highway), which may affect wildlife habitat and land users enjoyment of the area. Mitigation measures to reduce the effects of noise and dust are described in the EIS and subsequent response documents.

Kavik-Stantec (2012) calculated wildlife habitat and vegetation metrics for waterbird habitat potential and grizzly bear denning habitat potential for Alternative 3 and the borrow sources (170, 174, 177, 309, 325/314, and PW2). The results estimate that:

- 43.3% of the Project Study Area (the area within 500 m of either side of the Preferred Alignment and within 500m of borrow sources) has medium waterfowl habitat potential, while 18.3% has high waterfowl habitat potential.
- 211.5 ha of the Highway footprint is within an area with medium waterfowl habitat potential and 3.4 ha is within an area with high waterfowl habitat potential.
- 18.1% of the of the Project Study Area (the area within 500 m of either side of the Preferred Alignment and within 500m of borrow sources) has medium grizzly bear den habitat potential, while 2.6% has high grizzly bear den habitat potential.

It is important to note that the information provided by Kavik-Stantec does not identify the total area in the ISR that provides waterbird or grizzly bear habitat potential, only the area within 500 m of either side of the Preferred Alignment (Alternative 3).

Disturbance to Inuvialuit users is expected to be at its peak during construction activities, particularly within the LSA. During construction, traditional resource harvesting in areas near the Highway and borrow sources could be disrupted. As well, wildlife species inhabiting or migrating through the LSA could be displaced because of the noise. The displacement could lead to a decrease in harvest success in the local area, thereby adversely affecting Inuvialuit conducting resource harvesting; which could cause them to hunt and fish in different locations. The total area affected by construction and the level of disturbance from noise and construction-related activity will be reduced once the Highway is operational.

Areas of Special Ecological and Cultural Importance

Areas of special ecological and cultural importance were identified in the Inuvik and Tuktoyaktuk Community Conservation Plans, the Traditional Knowledge Study (Kavik-Stantec 2012) and were discussed in the EIS.

Alternative 3 (2010 Minor Realignment) is located within:

- the spring caribou harvest area (302C) and the winter caribou harvest area (315C)(Figure 3.2.8-1)
- the bluenose-west caribou herd winter range (701E)
- the winter wolverine harvesting areas (314C) (Figure 3.2.8-11)
- the spring goose harvesting areas (304C) (Figure 3.2.8-13)
- the winter/summer/spring fish harvesting areas (316C/307C/305C)
- the caribou hills (702B) (Figure 3.2.9-5)
- a portion of Alternative 3 is located within the summer fishing harvesting area (307C) (Figure 3.2.8-17)
- the grizzly bear denning area (322C) (Figure 3.2.9-5)
- the fish lakes and rivers area (704C) (Figure 3.2.9-5)
- areas designated as Management Category "E" (Figure 3.2.9-4)

The Traditional Knowledge Workshops Report (Kavik-Stantec 2012) identified other areas of importance to the people of Inuvik and Tuktoyaktuk (Registry document #199). These areas are shown in Figures 3-1a and 3-1b of the report. Alternative 3 (2010 Minor Realignment) is located within or near:

- geese harvesting areas
- lakes containing various types of fish and lakes not fished in
- nesting areas (yellowlegs and seagulls)
- denning area (near Hans Lake)
- former caribou migration route
- reindeer wintering area
- fishing, hunting and trapping areas
- cabins
- treed area north of treeline
- undocumented historic site
- areas with wolverine, wolves, and reindeer
- berry picking area

Other areas that the Highway is adjacent to are discussed in EIS Section 3.2.9.

Kavik-Stantec (2012) calculated wildlife habitat and vegetation metrics for grizzly bear den habitat potential along Alternative 3 and the borrow sources (170, 174, 177, 309, 325/314, and PW2). The report indicates that 18.1% of the of the Project Study Area (the area within 500 m of either side of the Preferred Alignment and within 500m of borrow sources) has medium grizzly bear den habitat potential, while 2.6% has high grizzly bear den habitat potential.

The Developer recognizes the importance and value placed on the land by people in the region. The Developer has made several commitments in relation to design, construction and operation of the Highway to minimize potential effects of the Highway on the environment (including fish and wildlife) (see Table F – Commitments Table, August 2012 updated version).

In the responses submitted to the EIRB in information requests and during the Technical Sessions, several agencies identified their mandate and responsibility regarding Project-authorizations, controlling public access from the Highway, conducting monitoring, and/or developing, implementing and enforcing management plans. These responses are posted to the EIRB registry. Examples of applicable text include:

The ILA (in document # 159) states that "… while these activities will result in land impacts, the impacts can in large part be managed and the resulting activities will be beneficial…" The ILA also states that "ILA has reviewed the highway route and identified locations on Inuvialuit lands where it is likely there will be land use demands for activities such as boat launching and the establishment of cabins. These sites will be monitored by ILA and the necessary steps taken to ensure an appropriate level of protection of Inuvialuit lands at these locations – up to and including refusal to permit certain activities. Ongoing monitoring will also identify other areas that may require similar attention."

The GNWT ENR (in document #163) states that "wildlife management zones and harvest restrictions are revisited annually. In the ISR, restrictions on Aboriginal hunting rights are established through recommendations from WMAC and the IGC. These recommendations are incorporated into the HTC by-laws which are translated into regulations under the NWT Wildlife Act. The GNWT renewable resource officers are responsible for enforcing the regulations."

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DFO (in document #156) states "management of the highway corridor will be done in cooperation with HTCs, DFO and the FJMC. … Any management plan for the Highway corridor will establish monitoring and evaluate all possible regulatory and management tool options." The DFO state that "implementation of any [fisheries management] plans would be the joint responsibility of the parties who develop the plan; most likely DFO, the Inuvik and Tuktoyaktuk HTCs, and the FJMC. The HTCs will enforce their own by-laws, and DFO will enforce the *Fisheries Act*." They go on to state "DFO Fish Habitat Biologist and Fishery Officers may also conduct adhoc compliance monitoring site visits to ensure that all activities are in compliance with the Fisheries Act as well as conditions included in authorizations."

With regard to Category E lands, the Inuvialuit Regional Corporation also filed a response to an EIRB information request that is posted to the registry (Registry document #157).

Developer-related mitigation measures and commitments are provided in the EIS, subsequent response documents and Table F – Commitments Table, August 2012 updated version. These mitigation measures remain applicable and accurate.

Land Designation Areas (as per IFA and CCPs)

Land designation areas that the Highway alignment is located within were identified in the EIS and subsequent response documents submitted to the EIRB.

Alternative 3 (2010 Minor Realignment) is located within:

- the spring caribou harvest area (302C) and the winter caribou harvest area (315C)(Figure 3.2.8-1)
- the bluenose-west caribou herd winter range (701E)
- the winter wolverine harvesting areas (314C) (Figure 3.2.8-11)
- the spring goose harvesting areas (304C) (Figure 3.2.8-13)
- the winter/summer/spring fish harvesting areas (316C/307C/305C)
- the caribou hills (702B) (Figure 3.2.9-5)
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- areas designated as Management Category "E" (Figure 3.2.9-4)

Other areas that the Highway is adjacent to are discussed in EIS Section 3.2.9.

With regard to Category E lands, the Inuvialuit Regional Corporation also filed a response to an EIRB information request that is posted to the registry (Registry document #157).

Developer-related mitigation measures and commitments are provided in the EIS, subsequent response documents and Table F – Commitments Table, August 2012 updated version. These mitigation measures remain applicable and accurate.

Tourism, Commercial and Public Recreational Use

Increased access to the area between Inuvik and Tuktoyaktuk will lead to change in tourism, commercial and public recreational use of the area. During construction, the Highway will be closed; however, during operations, the Highway will allow vehicle access to previously inaccessible areas.

Due to the increased access between Inuvik and Tuktoyaktuk, it is anticipated that there will be increased tourism, commercial activity and public recreational use in Inuvik, Tuktoyaktuk and and/or the area between the communities.

Key issues related to tourism, commercial and public recreational use include:

- Disturbance to land users
- Alteration of aesthetics
- Use of granular resources identified for community use
- Change in access leading to changes in accessible land base and land use
- Decrease in land base

Developer-related mitigation measures and commitments are provided in the EIS, subsequent response documents and Table F – Commitments Table, August 2012 updated version. These mitigation measures remain applicable and accurate.

Disturbance to Land Users

Two residential leases are located within 1 km of Alternative 3, and 19 leases are located within 1-5 km of Alternative 3. The leaseholders within 1 km of the alignment may notice some change in vegetation (due to dust) and air quality (due to dust) up to 400 m from the Highway during snow-free periods, which may affect wildlife habitat in the area during that season. In addition, the Highway footprint will decrease available wildlife habitat near the leases (see subsection 'Decrease in Land Base'). Leaseholders may also be affected visually and experience some noise disturbance. The Developer's Response to Information Request 13.3 and 115.1 provides additional information regarding the potential effect to quality of life and zone of influence based on noise. If using land near the Highway, other non-residential land users may notice similar effects.

Sensory disturbance caused by increased traffic, noise and emissions during construction could adversely affect the quality of tourism and outdoor recreation activities, such as snowmachine use or cross-country skiing. However, it is expected that these activities will primarily occur near communities or residential leases, and there will be less recreational use in more remote areas. The increased access could have a positive effect on recreational users by allowing them access to lands that were previously difficult to reach. It is important to note that the area between Inuvik and Tuktoyaktuk, and areas near residential leases are currently accessible during winter months by snowmachine.

Alteration of Aesthetics

Aesthetic issues may affect tourism and recreation activities in the vicinity of the Highway. There may be a decrease in frequency or participants could experience a reduction in the perceived quality of their experience.

Use of Granular Resources and Access to Granular Resources

Construction and operation of the Highway requires access to several borrow sources. During the Technical Sessions, several borrow sources were identified for use. These borrow sources include: PW2, 325/314, 309, 174, 170, and 177. A review of the borrow sources identified for community use in the ISR Granular Resources Management Plan (ILA & INAC 2010) shows that borrow source 177 is identified for use by the Hamlet of Tuktoyaktuk and the Developer. In the Response to Technical Session IRs, submitted by the Developer to the EIRB on August 31, 2012, Table TS-2-1 estimates the total material requirement for construction and operation from Source 177 as 1,015,500 m^3 compared to the estimated amount available in Source 177 as 1,510,000 m^3. The Hamlet of Tuktoyaktuk has identified a secondary source "*in the event that Source 177 does not contain as much gravel as was estimated… or if the gravel source becomes depleted*" (ILA & INAC 2010, p. 51).

The Tuktoyaktuk to Source 177 Access Road provides access to borrow source 177 from Tuktoyaktuk. The construction and operation of the Highway would provide access to additional borrow sources in the area between Inuvik and Tuktoyaktuk. However, as noted in the ISR Granular Resource Management Plan (ILA & INAC 2010), most of the borrow sources identified for community use are not located along the Highway, but are located in areas near the communities. The Highway would open up access to new areas and could lead to improved access to granular resources in existing or new borrow sources.

The Highway positively affects the commercial uses in an indirect manner, as it ensures access to granular resources for the communities. Borrow sources used for construction of the Highway will be accessed using winter roads and following excavation will be reclaimed in accordance with the terms and conditions of the Pit Development Plans. No borrow source activities will occur within the 1 km Husky Lakes setback. Furthermore, Project activities would not block access to existing granular operations in the LSA or RSA.

Change in Access

Concerns have been raised regarding the increased access to wildlife and fisheries resources, and subsequent management plans have been recommended by resource and co-management agencies. However, increased access to wildlife or fisheries resources could result in a positive effect for tourism, commercial and public recreational users.

Decrease in Land Base

The decrease in land base is not anticipated to affect tourism, commercial and public recreational users. It is anticipated that tourism and commercial activities will increase as a result of the Highway, which requires the land base of the Highway footprint. Public recreational users of the Highway, for the purpose of non-traditional resource harvesting, would be prevented access to the Highway during the construction phase, but during operations, would have access to the Highway.

As stated in Table 4.2.6-1 of the EIS, the Highway footprint is approximately 379 ha, with a potential 1,629 ha used for borrow sources (Kavik-Stantec 2012). Additional areas adjacent to the alignment may be affected by noise (up to 1.5 km) and dust (up to 400 m from the Highway), which may affect land users enjoyment of the area or wildlife attraction to the area. Mitigation measures to reduce the effects of noise and dust are described in the EIS and subsequent response documents.

Disturbance to public recreational users is expected to be at its peak during construction activities, particularly within the LSA. There could be a disruption of non-traditional resource harvesting in areas near the Highway and borrow sources during construction. Wildlife species inhabiting or migrating through the LSA could be displaced because of the noise. The displacement could lead to a decrease in harvest success in the local area, thereby adversely affecting public recreational users conducting resource harvesting; which could cause them to hunt and fish in different locations.

The level of disturbance from noise and construction-related activity, and the area affected by construction, will be reduced during operations.

Heritage and Archaeological Sites

As discussed in the EIS, Preliminary field reconnaissance of the Primary 2009 Route and selected borrow sites was conducted in September 2009 (Kiggiak-EBA 2010a). The results of this reconnaissance was stated as follows in Section 3.2.10 of the EIS:

There are 12 previously recorded archaeological sites within 5 km of the proposed Highway route, four of which are within prospective gravel sources; one additional site is within a possible borrow source further from the route (Table 3.2.10-1; Figure 3.2.10-1)…

TABLE 3.2.10-1: ARCHAEOLOGICAL SITES NEAR PROJECT COMPONENTS

Site	Location	Distance to Highway	Type	Features
NeTq-1	Husky Lakes	1.4km+b	tool making	scatter (lithic)
NeTq-2	S. Husky Lakes	borrow	trail	trail
NfTq-1	Husky Lakes	800m+b	campsite	bone scatter; tent ring (fire cracked rock)
NfTq-4	Parsons Lake	3.3km+b	camp	scatter (lithic); sub. house
NfTq-5	large unnamed lake	2.5km+b	tool making	lithic scatter
NgTo-2	Husky Lakes	2 km	isolated find	lithic flake
NgTq-1	large unnamed lake	150m	tool making, campsite	scatter (fire cracked rock), scatter (lithic)
NhTo-1	Sukunnuk Narrows	1.8km	campsite	bone scatter
NhTo-2	Husky Lakes	2.4km	campsite	scatter (bone)
NhTo-4	west of Husky Lakes	1.8km	tool making	scatter (lithic)
NhTp-1	large unnamed lake	4.8km	campsite	cache pits, house, midden, lithic remains, pottery
NhTp-2	Big Lake (Ilkaasuat)	1.5km	campsite	midden, bones, pottery
NhTp-6	Big Lake (Ilkaasuat)	4.5km	isolated find	harpoon frag/wood debris

Note: +b = in proposed borrow source

No previously recorded archaeological sites occur within the [Primary 2009 Route], assuming a typical right-of-way width. The sections of the Highway route that are close to Husky Lakes and cross elevated, dry terrain (Photo 3.2.10-1) are judged to have good archaeological potential. Elevated terrain features such as moraines, knolls, pingos, esker remnants, and ridges (Photo 3.2.10-2) all have good potential. Major creek crossings are suggestive of good archaeological potential. These sections of the Highway route were roughly outlined on preliminary topographic maps (Figure 3.2.10-2 and 3.2.10-3).

The 2011 Archaeology Impact Assessment investigated the Primary 2009 Route, Alternative 1 (2009 Minor Realignment and Alternative 3 (2010 Minor Realignment) and several borrow sources (314/325, Parsons Lake, 23, 172, 171, 27B, 27A and 28). The results of the study were "n*o new archaeological sites were recorded as a result of the investigations and no sites will be directly impacted by the proposed Highway ROW [Right-of-Way] and alternate routes*" (IMG-Golder 2011, p. 14).

According to Table 2 of the report, four of the archaeological sites are located in a potential borrow source (NeTq-1, NfTq-1, NfTq-4, NfTq-5), but it does not identify which borrow source.

IMG-Golder (2011) recommended that:

"…the Government of the Northwest Territories be allowed to proceed with the development of the Inuvik to Tuktoyaktuk Highway as planned without any further cultural resource investigations along the proposed ROW. Although not investigated as part of this study, several [four] borrow sources are associated with previously recorded archaeological sites. It is recommended that all previously recorded archaeological sites in these areas be avoided or additional studies be conducted prior to impact."

As discussed during the Technical Sessions, the borrow sources selected for use have been revised. Additional archaeological work will be conducted, as required by the Prince of Wales Northern Heritage Centre, prior to excavation of the borrow sources.

The mitigation measures and residual effects stated in the EIS, subsequent response documents and Table F – Commitments Table, August 2012 updated version remain applicable and accurate. However, one of the mitigation measures, regarding conducting an archaeological impact assessment of the preferred alignment (Alternative 3), has since been conducted. All other mitigation measures remain accurate.