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ARCHAEOLOGICAL OVERVIEW ASSESSMENT

PROPOSED AIRPORT LOGISTICS PARK, PRINCE GEORGE.

Submitted to:

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**PROPOSED MOUNT GEORGE WIND PARK FOR NATURAL POWER CONSULTANTS
WITHIN PORTIONS OF NTS MAPSHEETS NTS 093G/15 BCGS 93G.087**

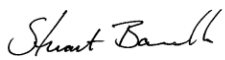
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MANAGEMENT SUMMARY

At the request of L&M Engineering c/o the City of Prince George and property owner 0743999 BC Ltd., an Archaeological Overview Assessment (AOA) was conducted for the proposed Airport Logistics Park and ancillary developments located within NTS mapsheet 093G/15 BCGS 93G.087. The Project will consist of the future light industrial area for Prince George and the surrounding region. The AOA was conducted on an area that is approximately 1200 ha in size.

The objectives of the AOA are to identify and assess archaeological resource potential or sensitivity within the Project area and prepare a written report detailing the results. In order to accomplish these objectives, the cultural, biophysical, historic, ethnographic and archaeological documents relative to the Project area were consulted. Involved First Nations were also asked to contribute information regarding traditional land use and cultural sensitivity. This methodology for the determination of archaeological resource potential in cultural resource management is one commonly used and is designed to err on the side of caution. Typically, areas exhibiting moderate to high archaeological potential are found on high ridges; lake, river and creek terraces; breaks in slope; south facing slopes; well-drained knolls; and terrain adjacent to lakes, rivers, creeks and wetlands including micro-topographic features. Alpine environments can also exhibit moderate to high archaeological potential for the presence of archaeological/ceremonial sites.

Based on the results of the AOA, an Archaeological Impact Assessment (AIA) is recommended for moderate and high archaeological potential zones within the Project area. One previously recorded archaeological site may be impacted by access the development. It is strongly recommended that this site should be avoided when determining the locations of the development access components. If avoidance is not possible, further investigation through excavation and/or monitoring may be required, as well as an Alteration Permit from the Archaeology Branch.

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1. INTRODUCTION

At the request of L&M Engineering c/o the City of Prince George and property owner 0743999 BC Ltd., an Archaeological Overview Assessment (AOA) was conducted on the proposed Airport Logistics Park (the Project). The assessment area includes an area that is approximately 1200 ha in size.

This report documents the methods and results of the AOA. The study is based on existing information and the professional experience of the author, and is directed solely at determining the potential for archaeological sites within the defined Project area. Based on the determination of archaeological potential, cultural resource management recommendations are presented. These recommendations may include one of two levels of management action: no further work or an Archaeological Impact Assessment (AIA).

The report begins with a basic outline of the Project and the objectives of the work undertaken. Section 2.0 summarizes the Project area, including a map showing the development location. Section 3.0 provides background information concerning the biophysical and cultural environment. Section 4.0 discusses the methodologies employed during the analysis of the Project's archaeological potential. Section 5.0 includes the results of the documentary analysis. Section 6.0 discusses the assessment of archaeological resource potential. Section 7.0 outlines the recommendations for further archaeological work to be conducted within the Project. The final section, Section 8.0, includes a listing of all references cited.

1.1. Scope & Objectives

In the Province of British Columbia, all archaeological resources are protected under the *Heritage Conservation Act*, whether located on public or private land. Protected sites may not be altered without a permit issued by the Minister or designate.

The scope of the Project involves an AOA on lands affected by the proposed development. The objective of the AOA is to:

1. Identify and assess archaeological resource potential or sensitivity within the Project area through a review of the listing of known archaeological sites included in RAAD (Remote Access to Archaeological Data) in addition to a review of the biophysical and topographic mapping; and,
2. To prepare a written report of the overview that fulfills the requirements outlined by the Ministry of Tourism, Sport and the Arts (Archaeology Branch) Archaeological Impact Assessment Guidelines.

Recommendations will be established pertaining to the appropriate methodology and scope of work for further inventory and/or archaeological impact assessments. Predictions regarding archaeological site variability, density and distribution will be discussed.

While all observations, conclusions and recommendations made in this report are the result of research undertaken by the author, this work may be subject to the review or modification, by the Archaeology Branch, Ministry of Tourism, Sport and the Arts.

2. PROPOSED PROJECT

2.1. Project Overview

The Project is located on the southern edge of the city of Prince George within portions of NTS mapsheet 093G/15 BCGS 93G.087. The preliminary design of the logistics park places it on a ridge above the Fraser River (Figure 1). The development area to be assessed during the study has been determined by the proponent and includes the area of approximately 1200 ha. The exact locations of the components are not known at this time; therefore, this assessment will be done on the entire area. Pre-construction environmental assessments and logistical planning are taking place in 2008. Construction of the Project is anticipated to start in 2009 and continue in over the next decade.

2.2. Potential Impact on Archaeological Resources

Construction of the proposed development will require vegetation removal and ground disturbance; thus it has the potential to impact unrecorded archaeological resources. Archaeological records kept at the Archaeology Branch of the Ministry of Tourism, Sport and the Arts will be consulted to determine if any recorded archaeological sites are within the Project boundaries (See Section 5.0). If recorded sites have the potential to be impacted by construction, cultural resource management recommendations will be made (see Section 7.0).

Figure 1 Project Area



3. STUDY AREA

3.1. Location

The Project is located on the Interior Plateau to the west of Fraser River, within Prince George, immediately west of Prince George airport. This area is within portions of NTS mapsheet 093G/15 BCGS 93G.087. The Project is located within the traditional territory of the Lheidli T'enneh First Nation and within the statement of intent area of the Nazko First Nation.

3.2. Environmental Setting

Reference to a landscape classification system aids in the better understanding of the biophysical environment of the Project area. The Biogeoclimatic Ecosystem Classification System in British Columbia is utilised by the Ministry of Forests as a way to classify sites on an ecosystem-specific basis. The classification system combines the biological, geologic and climatic factors of an area and classifies it into one of fourteen biogeoclimatic zones established in the province of British Columbia.

The Project falls within the biogeoclimatic zone of the Sub-Boreal Spruce (SBS) in the lower elevations. The description of this zone has been adapted from Meidinger and Pojar (1991), The Sub-Boreal Spruce (SBS) biogeoclimatic zone dominates the rolling terrain of the central interior of British Columbia. This zone is characterized by seasonal extremes of temperature; cold, snowy winters and relatively warm, short summers. The forests that dominate this zone are typically upland coniferous and consists primarily of hybrid white spruce and subalpine fir. Lodgepole pine, trembling aspen, Douglas-fir, black spruce and paper birch are other species found in various regions within this zone. The understory is comprised of a wide variety of vegetation including black huckleberry, thimbleberry, high bush-cranberry, bunchberry, kinnikinnick, oak fern and devil's club. Wetlands are commonly found within the region within poorly drained, post glacial depressions and river ox-bows. As the climate of this zone includes long, snowy winters, wildlife that inhabits this zone are adapted to either survive or avoid the severe weather. Moose are the most common large ungulate. Smaller mammals include those who burrow under the snow or travel on top of the snow. Most birds migrate south in the winter but a few, remain year-round. The established coniferous forests provide shelter from the weather and cover from predators. Mule Deer, Black Bear, Grizzly Bear, Caribou, Gray wolf, Fisher, Marten, Ermine, Red Squirrel, Canada Goose, Northern Flying Squirrel and Deer Mouse are some of the animals that flourish within the ecosystem. Terrain within this zone is primarily used for forest harvesting as it is ill-suited for agriculture because of the adverse climate, topography, bedrock and/or poor drainage. With the abundance of animals in this zone, it is not surprising that fur harvest from this zone is among the highest in the province.

3.3. Topography, Drainage and Geology

The Interior Plateau is almost entirely drained by Fraser River and is encircled by the Coast, Cascade, Skeena, Omineca, Rocky and Columbia Mountains. Within the Project Area, all minor drain west into Fraser River. The Fraser Basin is typified by flat or gently rolling surfaces covered with drift with few exposures of bedrock. The drainage is generally poorly organized, resulting in numerous lakes and poorly drained depressions. Glacial features such as drumlins, glacial grooves, eskers and meltwater channels are abundant throughout the area. A B.C. Geological Survey (2005) map indicates that the Mount George area is composed predominantly of Cretaceous granite. The surrounding lowlands are covered in Quaternary alluvium, glaciofluvial gravels, sands and till.

During the Pleistocene, ice flowed down from the Coast and Cariboo Mountains, meeting near Fraser River. The ice then flowed northeasterly, but split on the range of hills of which Mount George is the northern summit. As the ice melted the pre-glacial drainage channels were blocked with drift and wasting ice, creating ice-dammed lakes at Prince George, Fort St. James and Vanderhoof. The glacial lake around Prince George became larger as the ice retreated south, but drained north in to the Peace River drainage. Once the ice dam melted, the lake drained rapidly and major drainage systems were re-established through the deep lacustrine deposits. (Hawkins 1977, Holland 1964, Tipper 1971)

3.4. Archaeological Background

Overall, a documented pre-contact archaeological record of the Interior Plateau is lacking. Very few full-scale excavations have taken place. To date, the majority of archaeological investigations carried out in the Interior Plateau have been motivated by development activities, including forestry, oil and gas exploration and extraction as well as road and hydro line construction. Archaeological consulting companies have completed numerous archaeological assessments in the area, identifying mostly lithic, cache pit and CMT sites.

Human habitation in the central interior of the province has been documented in the archaeological record to approximately 10,000 years before present (BP). A recent excavation in Prince George dates an early occupation to 9,000 to 10,000 BP. Other sites in the province from this time period include the Charlie Lake Cave site near Fort St. John, dating to 10,500 BP; a site near Namu on Vancouver Island, dating to 9,700 BP; the Milliken site in the Fraser Canyon, dating to 9,000 BP; and the Gore Creek site near Kamloops, dating to 8250 BP (R. Carlson 1996). The early occupants of the area were likely fairly mobile hunter-gatherers due to the lack of dependable resources.

Carlson (1996) contends that the period between 4,000 and 6,000 BP in the Northern Interior saw intermingling of influences from the north, east and south. When the climate and glacial drainages began to

stabilise, the streams and rivers of the Interior became more inhabitable for salmon, which allowed people to depend on the annual salmon runs for a reliable food source (Carlson and Mitchell 1997; Fladmark 1999). By 3,000 to 4,000 years BP, the upper Fraser saw a shift from nomadic to semi-sedentary lifeways, through the establishment of villages along rivers and lakeshores (Carlson 1996). Sites supporting such a hypothesis include the village of Tezli dating to 3850 BP (Donahue 1978), and the Punchaw Lake site dating to approximately 4000 years BP (Fladmark 1974).

There is some archaeological evidence to suggest that the Carrier people originally arrived from the north, and forced a pre-existing group of people, possibly Salish, further south (Tobey 1981). Whether these happened rapidly, or slow enough to permit some degree of cultural assimilation, has been a topic of some debate among scholars (Donahue 1978; Tobey 1981).

3.5. Ethnography of First Nations Groups

The Carrier (Dakelh-ne) are a major Athapaskan language group occupying most of central British Columbia. The Carrier people were semi-sedentary and fairly mobile in their subsistence. The ethnographic life ways of the Carrier involved extensive seasonal mobility, involving distances of several hundred kilometres (Fladmark 1976). Traditionally, the Carrier people followed a seasonal round of subsistence (Bond and Russell 1992; Carlson and Mitchell 1997; Steward 1977). Settlement patterns reflected the seasonal movements of the people, but their main village sites were always at major salmon bearing locations (Carlson and Mitchell 1997). This seasonal round involved the use of different types of food and game for every season. For example, during the spring, trout, dolly varden, porcupine, otter, beaver, muskrat, squirrel and grebes were all taken (Bond and Russell 1992). This diet was augmented with whatever edible roots and plant shoots were accessible during that season. In the late spring, wild celery, rhubarb and fireweed became readily available and were utilised (Hall 1992; Smashnuk 1999).

The Carrier people constructed both surface and semi-subterranean habitations, commonly referred to as “pithouses” or “housepits”. Several general habitation types can be identified, such as general living structures (which can be separated to winter and summer habitations); larger buildings used for gatherings such as ceremonial feasts; temporary structures utilised during hunting, fishing or trapping activities; and temporary shelters utilised during socio-cultural transitional events, such as menstrual or puberty huts (Morice 1893).

Social organisation of the Carrier people is considered to be of a phratic nature that may have originally been transmitted from the coast via neighbouring Gitx̱san peoples (Bishop 1983; Carlson and Mitchell 1997). Phratries are subdivided into clans, such as Caribou, Beaver, Frog, Wolf and Bear. The land was divided into keyohs through the clan system, in which families had access to a variety of resources and were set up as stewards of their land (Carrier Sekani Tribal Council 1998). Although Steward (1977) questioned whether the Carrier utilised the potlatch system and to what degree their society was stratified, there is no written evidence to

show exactly how pre-contact Carrier society was organised (Tobey 1981). Bishop (1983) contends that the Carrier people had enough surplus resources that they could maintain a somewhat sedentary existence. It has been suggested that once the fur trade had firmly established itself among the Carrier peoples, the use of a crest-clan system became more common and that the practice of potlatching was adopted at this time in order to validate rank or title (Bishop 1983; Harris and Ingram 1972). This could suggest that social stratification intensified following contact.

Contact with neighbouring Nations was vital to the Carrier economy. Trade occurred to obtain otherwise unavailable items such as oolichan grease, obsidian and moose hides. Trails were an intrinsic part of this economy and Carrier traditional subsistence as a whole. Trails were located in every portion of the province. Prior to the establishment of the fur trade in the interior, the Carrier had access to firearms and metal tools from the intensive trade that was occurring on the Northwest Coast (Morice 1978). So effective was First Nations use of these trading networks, that the Hudson's Bay Company was concerned about losing their share of interior furs to coastal traders via traditional trade routes (Carlson and Mitchell 1997; Tobey 1981).

Direct contact between the Carrier and Europeans first occurred in the late 1700s and early 1800s, with the arrival of Alexander Mackenzie in 1793 and Simon Fraser in 1806 (Fraser 1960; Mackenzie 1967). The journals of these men record their adventures in northern British Columbia as well as the life ways and history of the Carrier people from their own point of view. The Hudson's Bay Company kept detailed records from 1821, describing the seasonal cycle of local native peoples, their subsistence, general health, trading patterns, population and social relations (Klippenstein 1992). Father Adrian Gabriel Morice kept detailed notes concerning the Carrier people and their culture from 1885 to 1904 (Morice 1978). Early maps created by members of the Canadian Geographical Society and by trading companies are also invaluable for interpreting traditional land use.

The fur trade officially came to the area in 1807 with the establishment of Fort George near the confluence of Fraser and Nechako Rivers by Simon Fraser for the North West Company. Fraser and his crew then descended Fraser River, ending at Musqueam and stopping at several places along the way, including Quesnel. The establishment of the fur trade in the central interior had a profound impact on the First Nations inhabitants, resulting in a shift in subsistence patterns to accommodate the fur trade. When Fraser arrived at Stuart Lake, the Carrier were already familiar with European trade goods that had likely come to the area from the coast through aboriginal trade networks, and were willing to exchange supply furs and provisions for goods, and were familiar with the concepts of debt and credit (Morton 1988). For the first few decades of after European contact, the Carrier continued on their seasonal round as part of their traditional subsistence economy (Klippenstein 1992). The Carrier still traded furs and fish with Europeans, however, they were not dependent on the trade with the Hudson's Bay Company because they could obtain goods from their traditional trade routes with the coast (Klippenstein 1992). Husdon (1983), however, suggests that the arrival of direct trade increased the importance of beaver hunting and salmon fishing to supply the fort with the goods they desired.

In the mid to late 1800s, more and more Europeans began to colonise British Columbia, bringing great disruption to the Carrier way of life. The discovery of gold brought thousands of people into central and northern British Columbia, encroaching on traditional Carrier territory. Missionaries started moving into northern BC, looking to convert the Carrier to Christianity. As well, in 1858, the Hudson's Bay Company's exclusive trading rights were revoked, which changed the Carrier hunting, trapping and fishing economy. The HBC had had a policy of direct trade of furs for goods; however, with the influx of smaller traders into the areas, the exchange of furs for cash became increasingly common. This made the local natives less dependent on the HBC and drew them into a cash economy. In 1871, British Columbia joined Confederation, whereby Indian lands became Crown lands and the native peoples became the responsibility of the federal government. The government decided to set out reserves for the natives as soon as possible, generally setting boundaries around villages, hunting grounds and fishing stations, and allowing eight acres per family (Klippenstein 1992).

By the beginning of the 20th century, prospectors and private fur traders were offering an earnest challenge to the control of the area previously held by the Hudson's Bay Company. Many trading posts in the district were closed, as wage labour and a cash economy had all but completely replaced the fur trade (Carlson & Mitchell 1997; Morice 1978; Tobey 1981). The Carrier continued their roles as trappers; however, with fluctuating markets and the depletion of fur bearing animals, they increasingly took on employment as general labour (Klippenstein 1992). Outsiders continued to appoint leaders for the Carrier for their own purposes and the continuing pressure from missionaries, native police and Indian agents contributed to the deterioration of the traditional hereditary systems of the Carrier (Klippenstein 1992). Keyoh holders were asked to register their traditional lands as traplines, which served to reduce the people's use of the land. It allowed for government bureaucrats to make decisions about resource use and conservation and allowed other people to infiltrate traditional lands, including settlers, farmers and cattle ranchers (Carrier Sekani Tribal Council 1998).

Between the years of 1900 and 1930, several changes occurred which directly affected the lives of First Nations living in the area. The Lheidli T'enneh land at the confluence of Fraser and Nechako Rivers was sold to the Grand Trunk Railway. The railway was built in 1914 and the city of Prince George soon grew around it, bringing new influences and challenges. With increased interest in the area by settlers, land developers, and government surveyors, the physical aspects of the area began to develop (Owen 1990).

The Lheidli T'enneh, meaning "the people from the confluence of the two rivers," live in the area of the confluence of the Nechako and Fraser Rivers. The present main reserve area is located on Fraser River approximately 15 km northeast of the city of Prince George, though other smaller reserves are located within the city and along Nechako River. There are 320 registered members of the band on and off reserve.

Nazko First Nation is located approximately 115 km southwest of the city of Prince George on Nazko River. Currently, the band has 19 reserves with 334 registered members on and off reserve.

3.6. Historical Background

The first European passed through the area in 1793 when Alexander Mackenzie came in to British Columbia from Peace River, headed down the Parsnip, down the Fraser and then followed existing aboriginal trails along West Road River to the coast. The next European to explore the area was Simon Fraser, who established Forts McLeod, St. James, Fraser and George as North West Company fur trading post in 1805-1807. Fur trade continued to be the major economy in the area until the 1850s and 1860s, when the gold rush caused thousands of people to head to the Cariboo in search of their fortunes. While the majority of gold exploration occurred around Quesnel, some prospectors travelled through the area to explore the Peace and Finlay Rivers (Runnalls 1946). The gold rush also caused overlanders to head to British Columbia via the Yellowhead Pass, several of which arrived at Fort George in 1862 and continued down the Fraser to Quesnel (Runnalls 1946).

The area north of Quesnel continued to be fairly isolated as the only way to access it was by canoe or scow up the Fraser or along rough trails. In 1903, the federal government and the Grand Trunk Railway signed an agreement to build a railway from Winnipeg to Prince Rupert. Stern-wheelers began to travel on the upper Fraser in 1909 as people and goods headed towards Fort George. Speculation about the railway caused early settlers to buy up land around Fort George in hopes of subdividing and reselling for a profit once the railway was completed. In 1913, the Grand Trunk Pacific Railway bought the reserve land at the junction of the Nechako and Fraser and by 1914, the railway across the Fraser had been built. The city of Prince George was incorporated in 1915. Vancouver businessmen became concerned about the amount of commerce that would flow to and from Edmonton and set out to build another railway on the east side of Fraser River between Prince George and North Vancouver. It reached Prince George in 1952 after several decades of problems. (Christensen 1989; Runnalls 1946).

Small communities sprang up along the east side of Fraser River, including Buckhorn, Red Rock, Stoner and Hixon. Some prospecting had been done in these areas in the 1860s, but no claims were as rich as those in the Cariboo. The communities came in to being after the Grand Trunk Railway was built, when it is estimated that 300-500 people lived in the area of Red Rock–Stoner–Cale Creek making a living through farming, trapping, logging and mining during the 1930s-1950s. The area saw a small boom in the early 1950s with the building of the railway from Vancouver to Prince George (UNBC 2002).

4. METHODOLOGY

4.1. Predicting Archaeological Resource Potential

In order to predict the occurrence of archaeological material within a proposed area two main objectives are undertaken. The first objective is to characterize the development area within the context of relevant past research by determining what is known about patterns of native settlement from ethnographic research, what is known about prehistoric settlement patterns from archaeological research, and what characteristics of the development area may be considered good indicators of past settlement. The second objective is to evaluate the development area in terms of a defined set of descriptive variables. These variables commonly include analysis of the biogeoclimatic zones, topography, proximity to water, aspect, drainage, elevation and known archaeological sites and historic settlements. Within a study area, there are several geographic entities that can be linked to specific settlement patterns and resource use. These include: stream valleys, stream terraces, lake margins, upland grasslands, upland forests, glacial remnant features, hills or elevated features, remnant dunes and disintegration moraine features. This evaluation is typically done through background research including reviews of ethnographies, archival journals by early explorers, native oral histories and other anthropological information, through direct consultation with elders and other band members from First Nations communities and/or a preliminary field reconnaissance (PFR) of the Project area.

Following the determination of the archaeological potential and based on the resulting set of variables, one of two possible recommendations is typically selected; No Further Work (NFW) or Archaeological Impact Assessment (AIA). Recommendation of the latter typically is accompanied with suggestions pertaining to the possible methodology to be utilised during future study.

4.2. Predicting Historical Resource Potential

The prediction of the occurrence of historical material within a proposed area is somewhat easier than that for predicting the distribution of archaeological resources. However, this type of analysis is not readily required because the distribution of historic sites is usually known. Sites stemming from the historic period are for the most part visible structures such as buildings, farms or cabins. In areas settled over a long period of time, these entities often have been mapped and documented and may be previously recorded. The analysis of historical materials involves the evaluation of previously recorded sites, models of settlement patterns, local topography and biogeoclimatic features of the region. From this type of analysis, a set of prediction variables can be used to establish defined areas of interest.

5. RESULTS

This section presents the results of documentary research in relation to the background information presented in Section 3. This section presents results, including past archaeological investigations and site distribution; hydrological analysis; topographical analysis; and landscape disturbance factors. From these results, zones of archaeological potential within the Project area were identified and mapped.

5.1. Archaeological Site Types and Distribution

The proximity of known archaeological sites to a particular area of interest is used as an indicator of archaeological potential since areas exhibiting high numbers of archaeological sites have a greater chance of containing additional archaeological sites. There are fourteen (14) recorded archaeological sites within close proximity of the project, summarized in Table 1 below.

Table 1: Recorded archaeological sites in close proximity to Proposed Development

Borden Number	Relation to Project	Site Type	Site Description
FIRq-1	Outside Boundary (E)	Lithic	Precontact, Subsurface, Lithics.
FIRq-2	Outside Boundary (SW)	Cultural Depression	Precontact, Subsistence Feature, Cultural.
FIRq-3	Outside Boundary (W)	Historic/ European	Cultural Depression, habitation/ Trading Post.
FIRq-8	Outside Boundary (W)	Burial/ Human Remains	Postcontact, Burial; Human Remains.
FIRq-9	Outside Boundary (W)	Cultural Depression	Precontact, Subsistence Feature, Cultural.
FIRq-10	Outside Boundary (W)	Lithic	Precontact, Cultural Material, Subsurface, Lithics
FIRq-11	Outside Boundary (W)	Lithic	Precontact, Subsurface, Lithics.
FIRq-12	Outside Boundary (W)	Lithic	Precontact, Subsurface, Lithics.
FIRq-13	Outside Boundary (W)	Lithic/ Cultural Depression	Precontact, Subsistence Feature. Subsurface, Lithics.
FIRq-14	Outside Boundary (SW)	Lithic	Precontact, Subsurface, Lithics.
FIRq-15	Outside Boundary (SW)	Lithic/ Cultural Depression	Precontact, Subsistence Feature. Subsurface, Lithics.
FIRq-16	Outside Boundary (SW)	Cultural Depression	Precontact, Subsistence Feature.
FIRq-17	Outside Boundary (SW)	Lithic/ Cultural Depression	Precontact, Subsistence Feature. Subsurface, Lithics.
FIRq-18	Outside Boundary (SW)	Cultural Depression	Precontact, Subsistence Feature.

One recorded archaeological site is in potential conflict with the proposed development; FIRq-1 is located near the north-eastern boundary of the development area consisting of subsurface lithics. All other sites are well outside of the boundaries of the Project and will not be impacted during construction of the Project.

There has been no comprehensive archaeological investigation undertaken for the Project area itself, and the scarcity of located archaeological sites within the proposed development area could be the result of this fact. The occurrences of these sites suggest that the greater region in which the proposed Project is located has been utilized in the past. Therefore, it is quite possible that undiscovered archaeological sites may be adversely impacted during the construction of the proposed Project.

Site types that might be encountered within the Project area include lithics, cache pits, culturally modified trees (CMTs), trails and cairns. Based on the archaeological and ethnographic background presented in Section 3, it is possible that significant habitation sites could be located within most of the Project Area, due to the proximity to salmon-bearing rivers.

CMT sites in the Interior Plateau tend to consist of cambium stripped pine. Within the Project Area, most pine-leading stands occur along the western portion. Therefore, it is unlikely that many cambium stripped CMTs will be identified. Other CMT types, such as blazes and arborglyphs, may occur within the Project Area.

From the historic background presented in Section 3, it appears that major prehistoric settlements and activities occurred close to Fraser River. However, historic sites may be encountered within the Project Area when the area was explored for its resource extraction potential. Historic sites might include prospecting and placer mining remnants; forestry related equipment and markings; agricultural materials; and cabins or temporary campsites. It is likely that any historic sites identified would post-date 1860 (after the Cariboo gold rush) and would not be automatically protected by the *Heritage Conservation Act*.

5.2. Hydrology

In order to completely and accurately predict site densities in any specific area, water availability is the one overwhelming environmental predictor of archaeological site potential. Proximity to water sources is an important indicator of archaeological potential as water is essential for survival. People normally live close to sources of water and will often use watercourses as travel routes. One major hydrological feature surrounds the development area. The confluence of the Nechako and Fraser Rivers are all located around the logistics park area. While there are few significant streams within the area, the proximity of this water system suggests an exceptionally high probability for archaeological remains.

5.3. Topography

As mentioned above, watercourses can be utilized as travel routes. In many cases, however, an elevated travel route is preferred, as these routes tend to be drier, facilitating travel, and can also offer excellent views of the surrounding terrain. Campsites and temporary use sites also tend to be located on level, well-drained terrain. Generally, ridges with south-facing aspects have higher archaeological potential, as they receive more sunlight, thereby providing much needed warmth. Terraces and breaks in slope associated with water features also tend to have higher archaeological potential.

The Project Area is located above 850 masl. Some potential models, such as the Traces Model for the Vanderhoof Forest District (A. Carlson, 1996) assume that high elevation areas (over 1150 masl) were less intensively used than lower elevation areas. This assumption is based on ethnographic evidence and the lack of archaeological sites at high elevations. It is noted, however, that high elevations could be utilized for trail corridors and resource exploitation. As such, the Traces Model assigns high elevations as having “unproven archaeological potential” and recommends that some survey should be carried out in high elevation areas to determine archaeological site distribution patterns (A. Carlson, 1996: 23). From the background research, it is likely that the Project Area has resource extraction potential for traditional use, such as caribou, grizzly bear and plants that are unique to alpine conditions.

The proposed development area has varied topography, generally level with a slight slope to the west. The western portion of the development area has steeply-sloping terrain towards the Fraser. Some level terrace or ridge features may be present towards the western portion of this tributary.

5.4. Existing Disturbance

The archaeological potential of a specific area is ultimately influenced by the condition of the landscape. Landscape altering activities such as road construction, farming and forestry activities have the potential to destroy both surface and subsurface cultural materials and CMTs. If cultural heritage resources are not destroyed in this process, their context usually is, making it difficult to assess significance and age of the sites. Previous disturbances at the eastern end of the proposed development are evidenced from other small scale developments, farming and recreation areas.

5.5. Archaeological potential within the Project Area

Based on the criteria discussed in this section, the Project Area holds significant archaeological potential. The river banks within the area hold the highest archaeological potential within the Central Interior (Figure 2, Figure 3). This potential is due to the following factors: access to the one of the largest, most resource rich rivers in British Columbia; the areas elevation provide a well-drained and advantageous view of the surrounding area; it

provides numerous areas of flat to minimally sloping terrain, ideal for human occupation and travel routes; there are multiple unique plants and animals for resource extraction. The highest potential is located along potential terraces, ridges or breaks in slope associated with Fraser River. Areas of undisturbed moderate to high archaeological potential exist along the western portions of the development area in association with the river.

Figure 2 Subsurface Potential

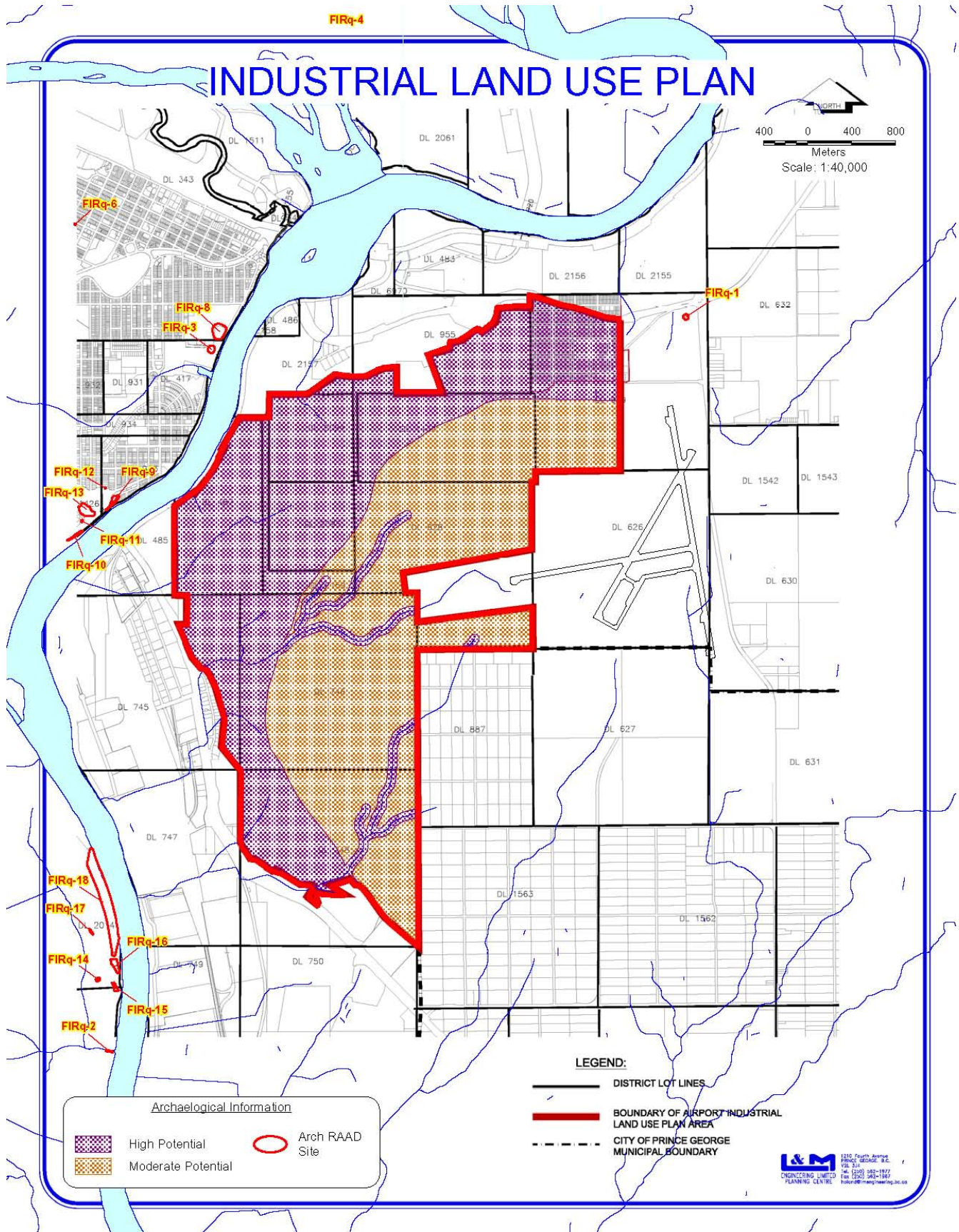
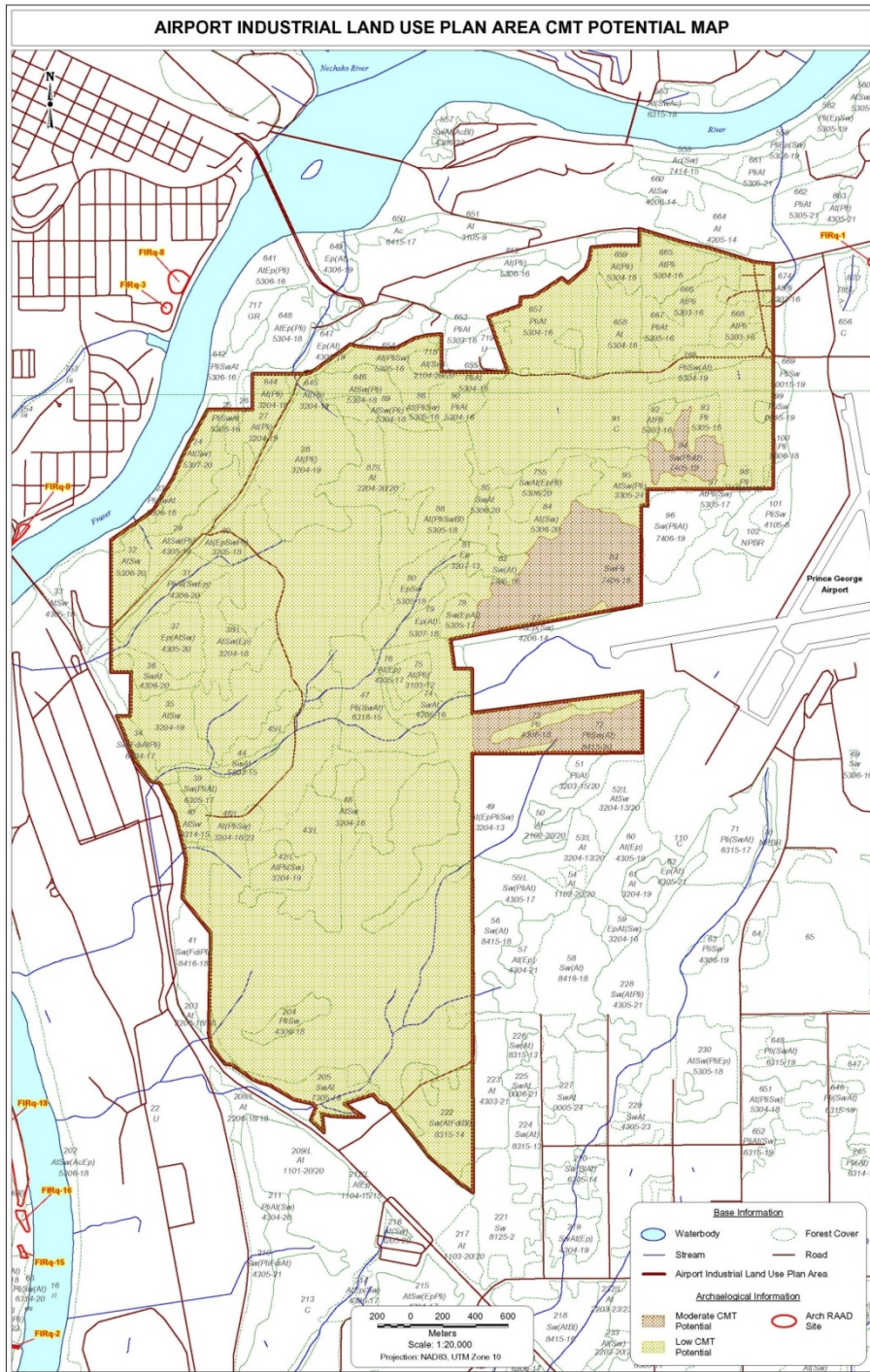


Figure 3 Culturally Modified Tree Potential



6. EVALUATION AND DISCUSSION

The proposed Airport Logistics Park is located within an area exhibiting exceptionally high archaeological potential, as determined through background research presented in Section 5. Areas with moderate to high potential include terraces, ridges or breaks in slope associated with streams, wetlands and lakes, as well as well-drained ridges providing advantageous travel routes, camping spots and resource extraction areas.

Portions of the Project Area have been previously impacted by various levels of impact. Depending on the degree of soil disturbance, the soil matrix has been altered, thereby most likely destroying the context in which cultural material would be found. While soil disturbance does not necessarily remove cultural materials from an area, it has the potential to destroy the materials and hinder in its recovery. Moreover, disturbance activities may result in the creation of pseudo-cultural material; materials that look cultural but have been artificially created (for example, cat-shatter on geophysical lines).

The lack of known archaeological sites within the Project area may be attributed to the minimal amount of archaeological work previously conducted in the area, rather than a lack of sites present. Moreover, there is a shortage of published documentation pertaining to the proposed Project area. Further archaeological work in the Project Area will help establish a greater knowledge of the terrain and settling patterns of the Interior Plateau in addition to increasing our general knowledge of the peopling of the province of British Columbia.

This AOA provides direction for the archaeologist as to where to look for potential in the field; however, ground traverse will more readily determine if, and to what degree, factors of micro-topography, disturbance and slope have influenced archaeological potential. Rock outcroppings will likely be encountered on the high ridges, which would impede subsurface testing. In these cases, archaeological survey will be restricted to surface inspection.

Areas deemed to hold high and moderate archaeological potential in this AOA will be surveyed according to the methodology presented in the AIA permit application and is summarized here. High intensity survey will be conducted in areas of moderate to high archaeological potential. In high potential areas, coverage will consist of systematic pedestrian survey (transect) with each person spaced 3-5 metres apart to ensure that any exposed archaeological material would be identified through surface inspection. Discreet areas of high archaeological potential will be systematically shovel tested at 1-5 metre intervals. Judgmental shovel tests may also be employed where landforms are too small for systematic testing. Large areas of high potential will be shovel tested on a 10 m grid or in clusters of three (3) every 15 metres. In moderate potential areas, coverage will consist of pedestrian survey with each person spaced 5-20 metres apart. Shovel testing in moderate potential areas will be spaced at 10-20 metre intervals. Reconnaissance survey will be employed in low potential zones. Crew members on pedestrian survey will be spaced 20-50 metres apart, depending on the relative archaeological

potential of the area. Shovel tests will be conducted at 20-50 m intervals where required; however, it is likely that most areas of low potential will not require shovel testing.

If cultural materials are encountered, additional testing must be conducted to determine site boundaries, site variability and site size. Areas of cultural significance must be flagged in the field and a 'No Work Zone' avoidance buffer will be recommended to the proponent in order to protect the archaeological resource(s). No development is to occur within the flagged area. To ensure that the construction of the Project does not impact archaeological and/or historical resources, it may be recommended that monitoring of construction occur within close proximity of the protected areas.

7. RECOMMENDATIONS

The objectives of this study were to identify and assess archaeological potential with the Project Area through a review of known archaeological sites, biophysical characteristics and topographic variability in relation to ethnographic and historic sources; and to prepare a written report of the overview that fulfills the requirements outlined in *Archaeological Impact Assessment Guidelines* (Archaeology Branch 1989).

It is strongly recommended that further archaeological work in the proposed Project area be undertaken, in the form of an Archaeological Impact Assessment (AIA) prior to construction. This work needs to be conducted at ground level and include a pedestrian traverse of the locations of all components. For efficient use of time and resources, it is recommended that ground traverse occur once the locations of the components of the development are determined. In this way, only areas with moderate to high archaeological potential that will be impacted by development will be surveyed. If a component's location is to be moved after ground traverse is finished, the new location will have to be traversed as well.

Any archaeological and/or historical sites discovered during the AIA will ultimately contribute to the general knowledge of the settlement patterns of an area not currently documented extensively. All archaeological sites within the province of British Columbia are protected from disturbance, whether intentional or inadvertent, by the *Heritage Conservation Act (2003)*. Monitoring of any construction activities conducted in close proximity of any discovered site(s) may be recommended.

Ecofor encourages consultation between First Nations groups and the Proponent. The results of this AOA and the ensuing AIA will be sent to the Lheidli T'enneh and Nazko First Nations for review.

The recommendations outlined within this AOA are subject to approval by the Archaeology Branch, Ministry of Tourism, Sport and the Arts. Please note that while the major areas of moderate and higher archaeological have been identified as a result of this AOA, additional, smaller areas of archaeological potential may also be present in the Project Area.

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